

<Translation>

Fiscal Year 2018 Business Report

From: April 1, 2018

To: March 31, 2019

Okinawa Institute of Science and Technology
School Corporation

Table of Contents

I.	Basic Information of OIST School Corporation.....	1
1	Summary of the Corporation	1
(1)	Description of Business	1
(2)	Address	1
(3)	Number of faculty members and employees	1
(4)	History	1
(5)	Basis law for the establishment	1
(6)	Supervising ministries.....	1
(7)	Organizational Chart.....	2
2	List of Officers, etc.	3
(1)	Officers and Auditors	3
(2)	Members of Governors	7
(3)	Members of Councilors.....	16
II.	Status of business implementation.....	19

I. Basic Information of OIST School Corporation

1 Summary of the Corporation

(1) Description of Business

- 1) Establish and operate the Okinawa Institute of Science and Technology (OIST) Graduate University
- 2) Provide students with consultations on schooling, career options, and physical and psychological health, and with other support
- 3) Undertake research commissioned by parties outside the School Corporation, conduct joint research with parties outside the School Corporation, or otherwise conduct education and research activities in collaboration with parties outside the School Corporation
- 4) Disseminate the achievements of research at Okinawa Institute of Science and Technology Graduate University, and promote their utilization
- 5) Hold research meetings concerning science and technology, and otherwise conduct business to promote exchange among researchers

(2) Address

Main campus 1919-1 Tancha, Onna-son, Kunigami, Okinawa 904-0495 Japan
Seaside House 7542 Onna, Onna-son, Kunigami, Okinawa 904-0411 Japan

(3) Number of faculty members and employees (as of March 31, 2019)

Faculty members: 58

Employees (exclude temporary staff): 839

(4) History

2011 Nov.: The Okinawa Institute of Science and Technology School Corporation Inauguration

(5) Basis law for the establishment

Okinawa Institute of Science and Technology School Corporation Act (Act No. 76 of 2009)

(6) Supervising ministries

Cabinet Office, MEXT

(7) Organizational Chart (as of March 31, 2019)

As of March 31, 2019



2 List of Officers, etc. (as of 31 March, 2019)

Fixed number: Shall be as prescribed respectively in the Article 5.1, 7 and 19.2 of the OIST Bylaws.

Term: Shall be as prescribed respectively in the Article 9.1 and 24.1 of the OIST Bylaws.

(1) Officers and Auditors

(2) Title	Name	Term	Background	
President/ CEO	Peter Gruss	From Jan. 1, 2017 To Dec. 31, 2021 (1 st Term)	1977 1980 1982 1983 1986 1990 1997 2002 2017 Jan.	Ph.D. in Molecular Biology, University of Heidelberg Expert Consultant/Visiting Scientist, NIH, Bethesda Associate Professor of Microbiology, University of Heidelberg Member, Directorate of the Center for Molecular Biology, University of Heidelberg Director, Max Planck Institute for Biophysical Chemistry, Department of Molecular Cell Biology Honorary Professor, University of Göttingen Managing Director, Max Planck Institute for Biophysical Chemistry President, Max Planck Society CEO, OIST SC President of OIST Graduate University
Executive Vice President for Technology Development and Innovation / Vice-CEO	Robert Baughman	From April 1, 2015 To Sep. 30, 2020 (Reappointed)	1975 1979 1985 1990	Ph.D. in Chemistry, Harvard University Assistant Professor of Neurobiology, Harvard Medical School Associate Professor of Neurobiology, Harvard Medical School Director, Program in Neurosciences, Harvard University

			1995	Director, Division of Fundamental Neuroscience and Developmental Disorders, NINDS
			1999	Associate Director for Technology Development, Office of the Director, NINDS
			2005	Special Research & Training Advisor to the President, OIST PC
			2007	Vice President and Executive Director, OIST PC
			2011	Provost and Vice-CEO, OIST SC
			2014	Executive VP for Sustainable Development of Okinawa, OIST SC
			2015	Executive VP for Sustainable Development of Okinawa/Acting Provost and Vice-CEO, OIST
			2016 Aug.	Executive VP for Technology Development and Innovation/ Vice-CEO, OIST
Auditor	Shinichi Okamoto	From November 1, 2017 to Oct. 31, 2020	1989	Staff of the Cabinet Councilor's Office on Internal Affairs, Cabinet Secretariat
			1990	Staff of the Personal Division, the Minister's Secretariat, Prime Minister's Office
			1991	Legislative Staff of the General Affairs Bureau for General Affairs Division, Okinawa Development Agency, Prime Minister's Office
			1992	Chief of the Personnel Bureau for Planning and Coordination Division, Management and Coordination Agency, Prime Minister's Office
			1993	Chief of the Director General's Secretariat, General Affairs Division, Management and Coordination Agency, Prime Minister's Office
			1994	Overseas Research Personnel at the National Personnel Authority
			1994	Overseas Research Personnel at

			1995	the National Personnel Authority Deputy Director, International Coordination, International Division, Science and Technology Promotion Bureau, Science and Technology Agency
			1996	Deputy Director, General Affairs Division, the Statistics Bureau, Management and Coordination Agency, Prime Minister's Office
			1998	Deputy Director, Office for the Central Government Reform Headquarters, Cabinet Secretariat
			2000	Deputy Director, Cabinet Internal Affairs Office on Okinawa Issues, Cabinet Secretariat
			2001	Deputy Director, Staff for the Director General for Okinawa Affairs, Cabinet Office
			2002	Deputy Director, General Affairs Division, Cabinet Office
			2002	Chief Deputy Director, Secretariat of the International Peace Cooperation Headquarters, Cabinet Office
			2004	Counselor, General Affairs Division, Cabinet Office
			2004	Director, Office for the Promotion of Special Zones for Structural Reform and the Promotion of Regional Revitalization, Cabinet Secretariat
			2006	Director, Unit of the Civil Service Reform, Office for the Headquarters for Administrative Reform
			2008	Counsellor, Records and Archives Management Unit, Cabinet Secretariat
			2008	Counsellor, Records and Archives Management Division, Cabinet Office
			2011	Director, Records and Archives

			2012	Management Division, Cabinet Office
			2014	Professor of Administrative Law, Faculty of Law for Fukuoka University
			2015	Director, Center for Personnel Interchanges between the Government and Private Entities, Cabinet Office
			2017	Cabinet Counsellor, Office of Policy Planning and Coordination on Territory and Sovereignty, Cabinet Secretariat
			2017	Counselor, Minister's Office, Okinawa Development and Promotion Bureau, Cabinet Office,
			2014	Auditor for Okinawa Institute of Science and Technology Graduate University
			2015	Director for Okinawa Affairs, Cabinet Office
			2016	Director of Audit Office, Japan Sewage Works Agency
			Jun.	Auditor, OIST SC
Auditor	Yoshiyuki Uehara	From November 1, 2017 To Oct. 31, 2020	1973	Joined Okinawa Prefectural Government Staff, Department of Civil Engineering and Construction, Road Construction Division
			1976	Staff, Department of Civil Engineering and Construction, Civil Engineering General Affairs Division, Okinawa Prefecture
			1980	Staff, Department of Planning, General Affairs Division, Okinawa Prefecture
			1983	Supervisor, Department of General Affairs, Regional Bureau Administration Division, Okinawa Prefecture
			1989	Supervisor, Department of Commerce, Industry and Labor,

				Industrial Site Promotion Division, Okinawa Prefecture
			1992	Associate Director, Department of General Affairs, Finance Division, Okinawa Prefecture
			1995	Assistant Director, Department of General Affairs, Regional Bureau Administration Division, Okinawa Prefecture
			1996	Deputy Councilor, Department of Planning, International City Formation Initiative Office, Okinawa Prefecture
			2000	Councilor, Department of Planning, International City Formation Initiative Office, Okinawa Prefecture
			2002	Director, Department of Planning, Reconstruction and Development Office, Okinawa Prefecture
			2004	Director, Science and Technology Promotion Division, Okinawa Prefecture
			2005	Vice Chairman, Okinawa Foundation
			2009	Chairman, Moon Beach Hotels and Resorts
			2010	Chairman, Okinawa Convention & Visitors Bureau (~2015)
			2013	Vice Governor of Okinawa
			2016	Secretary of the Prefecture, Executive Office of the Governor, Okinawa Prefecture
			2017	Director General, Department of Planning, Okinawa Prefecture

(2) Members of Governors

Name	Term	Background	
Cherry Murray	From May. 24, 2017 To	1973	Bachelor of Science (Physics), Massachusetts Institute of Technology
		1978	Ph.D. (Physics), Massachusetts Institute of Technology

	May. 23, 2020**	2001	Physical Sciences and Wireless Research Senior Vice President, Bell Laboratories, Lucent Technologies (until December, 2004)
		2004	Deputy Director for Science and Technology at Lawrence Livermore National Laboratory in Livermore, Calif. (until October, 2007)
		2007	Principal Associate Director for Science and Technology at Lawrence Livermore National Laboratory in Livermore, Calif. (until June, 2009)
		2009	Dean, School of Engineering and Applied Sciences (SEAS) (until December, 2014) and John A. and Elizabeth S. Armstrong Professor of Engineering and Applied Science, Harvard University
		2015	John A. and Elisabeth S. Armstrong Professor of Engineering and Applied Sciences and Professor of Physics, Harvard (until July 2015)
		2015	Benjamin Peirce Professor of Technology and Public Policy and Professor of Physics, John A. Paulson School of Engineering and Applied Science, Harvard (-present)
		2015	Director, Office of Science, U. S. Department of Energy (on leave for government service from Harvard University, until January, 2017)
Akito Arima	From Nov. 1, 2011 To Oct. 31, 2020*	1958	Ph.D. (Science), The University of Tokyo
		1971	Professor, The State University of New York at Stony Brook
		1975	Professor, Faculty of Science, The University of Tokyo
		1989	President, The University of Tokyo
		1993	President, RIKEN
		1998	Member of the House of Councilors Minister of Education, Science, Sports and Culture
		1999	Director-General of the Science and Technology Agency
		2000	Chairman, Japan Science Foundation
		2005	Member, Board of Governors, OIST PC
		2006	Chancellor, Musashi Education Institution, Nezu Education Foundation
		2009	President, HFSP Co-Chair, Establishing Member of OIST SC
		2010	President, Shizuoka University of Art and Culture

		2011 Nov.	Vice-Chair, Board of Governors, OIST SC Member, Board of Councilors, OIST SC
Yoko Aniya	From Nov. 1, 2014 To Oct. 31, 2020*	1980 1981 1983 1986 1990 1994 1996 2001 2002 2003 2007 2011 2013 2014 Nov.	Ph.D. (Medical Science), Kagoshima University Councilor, Japanese Society of Pharmacology Postdoctoral Fellow, University of Rochester Medical Center, U.S.A. Associate Professor, Faculty of Medicine, University of the Ryukyus Professor, Faculty of Medicine (School of Health Sciences, Pharmacology & Toxicology), University of the Ryukyus Councilor, Japanese Society for the Study of Xenobiotics Councilor, Japanese Society of Toxicology Head, Integrated Innovation Center for Community, University of the Ryukyus Councilor, University of the Ryukyus Dean, School of Health Sciences, University of the Ryukyus Professor, Graduate School of Medicine, University of the Ryukyus Professor, School of Health Sciences, Faculty of Medicine, University of the Ryukyus Professor Emeritus, University of the Ryukyus Board member, Okinawa Science and Technology Promotion Center Member, Board of Governors, OIST SC Member, Board of Councilor, OIST SC
Robert Baughman (Executive VP for Technology Development and Innovation/ Vice-CEO)		1975 1979 1985 1990 1995 1999 2005 2007	Ph.D. in Chemistry, Harvard University Assistant Professor of Neurobiology, Harvard Medical School Associate Professor of Neurobiology, Harvard Medical School Director, Program in Neurosciences, Harvard University Director, Division of Fundamental Neuroscience and Developmental Disorders, NINDS Associate Director for Technology Development, Office of the Director, NINDS Special Research & Training Advisor to the President, OIST PC Vice President and Executive Director, OIST PC

		2011	Provost and Vice-CEO, OIST SC
		2014	Executive VP for Sustainable Development of Okinawa, OIST SC
		2015	Executive VP for Sustainable Development of Okinawa/Acting Provost and Vice-CEO, OIST
		2016 Aug.	Executive VP for Technology Development and Innovation/ Vice-CEO, OIST
Curtis Callan	From Nov. 1, 2014 To Oct. 31, 2020*	1964	Ph.D. (Physics), Princeton University
		1968	Member, JASON study group
		1969	Long-term Member, Institute for Advanced Study
		1972	Professor of Physics, Princeton University
		1974	Fellow, American Physical Society
		1986	Eugene Higgins Professor, Princeton University
			Member, American Academy of Arts and Sciences
		1989	Member, National Academy of Sciences
		1990	Chair, Steering Committee, JASON study group
		1995	James S. McDonnell Distinguished University Professor, Princeton University
		1998	Chair, Physics Department, Princeton University
		2004	Dirac Medal (International Center for Theoretical Physics)
		2005	Director, Princeton Center for Theoretical Science
		2008	Presidential Line, American Physical Society
			Chair, Physics Department, Princeton University
			Member, Board of Trustees, Institute for Advanced Study
		2014 Nov.	Member, Board of Governors, OIST SC
Rita Colwell	From Nov. 1, 2011 To Oct. 31, 2020*	1961	Ph.D. (Oceanography), University of Washington
		1991	President of the University of Maryland Biotechnology Institute
		1998	11th Director of the United States National Science Foundation (NSF)
			Co-chair of the Committee on Science of the National Science and Technology Council
		2004	Chairman and Senior Vice-President of Canon U.S. Life Sciences
			Distinguished Professor, University of Maryland, College Park

		2006	Distinguished Professor, Johns Hopkins University Bloomberg School of Public Health Senior Advisor and Chairman Emeritus, Canon, U.S. Life Sciences Member, International Advisory Committee, Japan Science and Technology Agency Member, President's Council, University of Tokyo
		2007	President of the American Institute of Biological Sciences 2006 National Medal of Science, U.S.A.
		2011 Nov.	Member, Board of Governors, OIST SC
		2013	President, Rosalind Franklin Society William Procter Prize for Scientific Achievement, Sigma Xi
		2014	Prize Medal, Society for General Microbiology
Peter Gruss		1977	Ph.D. in Molecular Biology, University of Heidelberg
		1980	Expert Consultant/Visiting Scientist, NIH, Bethesda
		1982	Associate Professor of Microbiology, University of Heidelberg
		1983	Member, Directorate of the Center for Molecular Biology, University of Heidelberg
		1986	Director, Max Planck Institute for Biophysical Chemistry, Department of Molecular Cell Biology
		1990	Honorary Professor, University of Göttingen
		1997	Managing Director, Max Planck Institute for Biophysical Chemistry
		2002	President, Max Planck Society
		2017	CEO, OIST SC
		Jan.	President of OIST Graduate University
Jerome Friedman	From Nov. 1, 2011 To Oct. 31, 2020*	1956	PhD (Physics), University of Chicago
		1967	Professor, MIT
		1977	Member, Board of the University Research Association, U.S.A. Vice President, Board of the University Research Association, U.S.A.
		1983	Head, MIT Department of Physics
		1990	Nobel Prize in Physics
		1997	Member of KEK Council, Japan
		1999	President, American Physical Society
		2001	Chair, Council of Scientific Society Presidents, U.S.A.

		2005 2009 2011 Nov.	Member, Board of Governors, OIST PC Establishing Member of OIST SC Member, Board of Governors, OIST SC
Senapathy Gopalakrishnan	From Nov. 1, 2017 To Oct. 31, 2020	1977 2007 2011 2016 2016 2014	Master's degree (Physics), Indian Institute of Technology, Madras Executive Officer and Managing Directory, Infosys Vice Chairman, Infosys Fellow, Indian National Academy of Engineers Honorary Fellow, Institute of Electronics and Telecommunication Engineers (IETE) of India Chairman, Axilor Ventures
Serge Haroche	From Oct. 1, 2015 To Sep. 30, 2021*	1971 1975 1981 1984 1991 1994 2001 2012 2015 Oct.	PhD (Physics), Paris VI University Professor, Paris VI University Visiting professor, Harvard Part time professor, Yale University Member, Institut Universitaire de France Chairman of the ENS Department of Physics Professor, Collège de France (in the chair of quantum physics) President of the Collège de France Nobel Prize in Physics Member, Board of Governors, OIST SC
Kazuhito Hashimoto	From Sep. 1, 2016 To Aug. 31, 2019	1985 1980 1984 1989 1991 1997 2004 2015 2016	Ph.D. (Chemistry), University of Tokyo Technical Associate, Institute for Molecular Science, Okazaki Research Associate, Institute of Molecular Science, Okazaki Lecturer, Department of Applied Chemistry, University of Tokyo Associate Professor, Department of Applied Science, University of Tokyo Professor, Research Center for Advanced Science and Technology, University of Tokyo Professor, Department of Applied Chemistry, University of Tokyo Professor, Special Assistant to the President, University of Tokyo President, National Institute for Materials Science

		2016	Member, Board of Governors, OIST SC
Motoko Kotani	From Nov. 1, 2014 To Oct. 31, 2020*	1990	PhD (Science), Tokyo Metropolitan University
		1993	Visiting Researcher, Max-Planck Society for the Advancement of Science
		1997	Associate Professor, Department of Mathematics. Faculty of Science, Toho University
		1999	Associate Professor, Mathematics Institute, Graduate School of Science, Tohoku University
		2001	Visiting Professor, Institute of Advanced Scientific Studies (IHES)
		2004	Professor, Mathematics Institute, Graduate School of Science, Tohoku University
		2008	Distinguished Professor, Mathematics Institute, Graduate School of Science, Tohoku University
		2011	Deputy Director, Professor, WPI-AIMR, Tohoku University
		2012	Director, WPI-AIMR, Tohoku University
		2014	Executive Member, Council for Science and Technology Policy Cabinet Office, JAPAN
		2014	Member, Board of Governors, OIST SC
		Nov.	
VijayRaghavan Krishnaswamy	From Nov. 1, 2011 To Oct. 31, 2020*	1983	Ph.D. (Molecular Biology), Tata Institute of Fundamental Research, Mumbai, India
		1984	Research Fellow at California Institute of Technology, U.S.A.
		1986	Senior Research Fellow at California Institute of Technology, U.S.A.
		1988	Joined National Centre for Biological Sciences, Tata Institute of Fundamental Research, Bangalore, India
		1998	Senior Professor and Director, National Centre for Biological Sciences, Tata Institute of Fundamental Research, Bangalore, India
		2005	Member, Science Advisory Council to the Prime Minister of India
		2009	Member, Janelia Farm Research Campus, HHMI, Advisory Committee
		2011	Member, Board of Governors, OIST SC
		Nov.	
		2012	Fellow of the Royal Society
		2013	Distinguished Professor, National Centre for Biological Sciences, Tata Institute of Fundamental Research, Bangalore, India

			Secretary, Department of Biotechnology, Government of India
Kiyoshi Kurokawa	From Nov. 1, 2011 To Oct. 31, 2020*	1967 1979 1989 1993 1996 1998 1999 2001 2003 2005 2006 2009 2011 Nov. 2014	Doctor of Medical Science, University of Tokyo Professor of Medicine, Department of Medicine, UCLA School of Medicine Professor and Chairman, First Department of Medicine, University of Tokyo Faculty of Medicine Science Advisor, Ministry of Education , Science and Culture Professor of Medicine and Dean of the Institute of Medical Science, Tokai University Director of the Institute of Medical Science, Tokai University Order of Purple from the Government of Japan for Excellence in Academic Achievements Member of Study Committee, new graduate university in Okinawa, CAO President of the Science Council of Japan Member, Board of Governors, OIST PC Special advisor to the Cabinet (Science, Technology, and Innovation) Professor, National Graduate Institute for Policy Studies Establishing Member of OIST SC Academic Fellow, National Graduate Institute for Policy Studies Member, Board of Governors, OIST SC Visiting Professor, National Graduate Institute for Policy Studies
Erwin Neher	From Jun. 1, 2018 To May 31, 2021	1965 1967 1970 1966 1968 1972	Vordiplom (Physics), Institute of Technology, Munich M.Sc. (Physics), University of Wisconsin Ph.D. (Physics), Institute of Technology, Munich Graduate student and research assistant, the laboratory of Dr. W. W. Beeman, University of Wisconsin, Madison (until 1967) Graduate student and post-doc, the laboratory of Dr. H.D. Lux, Max-Planck-Institute für Psychiatrie, Munich (until 1972) Research Associate, Max-Planck-Institute für

		1975	biophysikalische Chemie, Dept. "Molekularer Systemaufbau", Göttingen (until 1975) Research Associate as a guest, the laboratory of Dr. Ch. F. Stevens, Yale University, Department of Physiology (until 1976)
		1976	Research Associate, Max-Planck-Institut für biophysikalische Chemie, Göttingen (until 1982)
		1989	Fairchild Scholar, California Institute of Technology
		1983	Director, Membrane Biophysics Department, Max-Planck-Institut für biophysikalische Chemie, Göttingen (until 2011)
		2011	Emeritus Director, Max Planck Institute for Biophysical Chemistry (-present)
Koji Omi	From Oct. 1, 2013 To Sep. 30, 2019*	1956	Hitotsubashi University, Faculty of Commerce
		1956	Joined Ministry of International Trade and Industry
		1970	Consul General of Japan in New York City
		1976	Director of General Affairs Department, Osaka Regional Bureau of International Trade and Industry, Ministry of International Trade and Industry
		1979	Director of Administrative Division, Science and Technology Agency
		1981	Director-General of Guidance Department, Small & Medium Enterprise Agency, Ministry of International Trade and Industry
		1983	Elected to a Member of House of Representative (Elected 8 times since then)
		1995	Chairman of Committee on Finance, ■House of Representatives
		1997	Minister of State for Economic Planning
		2001	Minister of State for Okinawa and Northern Territory Affairs, and Science and Technology Policies
		2006	Chairman of Non-Profit Organization Science and Technology Society Forum Minister of Finance
		2013 Oct.	Member, Board of Governors, OIST SC
Ryoji Noyori	From May 1, 2018 to Apr. 30, 2021	1961	Bachelor, Kyoto University
		1963	Master, Kyoto University
		1967	Ph.D. (Engineering), Kyoto University
		1963	Instructor, Kyoto University (until 1968)
		1968	Associate Professor, Nagoya University (until 1972)

		1969	Postdoctoral Fellow, Harvard University
		1972	Professor, Nagoya University (until 2003)
		1997	Dean, Graduate School of Science, Nagoya University (until 1999)
		2002	President, The Chemical Society of Japan (until 2003)
		2003	University Professor, Nagoya University (-present)
		2003	President, RIKEN (until March, 2015)
		2005	Chair, Science and Technology Council, Ministry of Education, Culture, Sports, Science and Technology (until 2015)
		2006	Chair, Education Rebuilding Council (until 2008)
		2015	Fellow, RIKEN (-present)
		2015	Director-General, Center for Research and Development Strategy (CRDS), Japan Science and Technology Agency (JST) (-present)
		2015	Director, Science Museum, Japan Science Foundation
Albrecht Wagner	From Oct. 1, 2015 To Sep. 30, 2021*	1971	PhD (Physics), University of Heidelberg
		1984	Professor, University of Heidelberg
		1991	Professor, University of Hamburg
			Director of Research, DESY
		1999	Chairman, DESY Board of Directors
		2005	Chairman, TESLA Technology Collaboration Board
		2006	Chairman, International Committee for Future Accelerators (ICFA)
		2007	Vice President of the Helmholtz Foundation
		2008	Chairman, Council of Hamburg University
		2010	Member, Board of the Joachim Herz Foundation
		2011	Member, Board of Councilors, OIST SC
		2015	Acting CEO & Acting President, OIST SC
		Oct.	

*Reappointed, Second Term **Reappointed

(3) Members of Councilors

Name	Term	Position
* Yoko Aniya	From Nov. 1 2014 To Oct. 31 2020*	Professor Emeritus, University of the Ryukyus
* Akito Arima	From Nov. 1, 2011	Chairman, Japan Science Foundation

	To Oct. 31, 2020*	Chancellor, Musashi Education Institution, Nezu Education Foundation President, Shizuoka University of Art and Culture
Monte Cassim	From Nov. 1, 2011 To Oct. 31, 2020*	Special Aide to the Chancellor, The Ritsumeikan Trust
Mary Collins	From Feb. 18, 2016 To Feb. 17, 2022	Dean of Research, OIST
Erik De Schutter	From Sep. 1, 2018 To Sep. 30, 2019	Chair of Faculty Assembly, OIST
Yoshiharu Doi	From Nov. 1, 2011 To Oct. 31, 2020*	CEO, Japan Synchrotron Radiation Research Institute
Ralph Eichler	From Nov. 1, 2014 To Oct. 31, 2020*	Former President, EHT Zurich
Ali Ganjehlou	From Oct. 2, 2015 To Oct. 1, 2021	Vice-President for Buildings and Facility Management, OIST
Frederick Gilman	From Nov. 1, 2011 To Oct. 31, 2020*	Dean of the Mellon College of Science, Carnegie Mellon University
Ryo Hirasawa	From Nov. 1, 2011 To Oct. 31, 2020*	Chief Director, Institute for Future Engineering Professor Emeritus, University of Tokyo Member, Administrative Council, Japan Advanced Institute of Science and Technology
Keith Hodgson	From Nov. 1, 2014 To Oct. 31, 2020*	Chairperson, Department of Chemistry, Stanford university
Irene Hirano Inouye	From Feb. 1, 2018 To Jan. 31, 2021	President, U.S.-Japan Council
Tisato Kajiyama	From Nov. 1, 2011 To Oct. 31, 2020*	Board Chairman and President, Fukuoka Women's University Former President, Kyushu University
Yoshihisa Kawakami	From Jan. 4, 2018 To Jan. 3, 2021	Chair, Okinawa Development Finance Corporation
Nasser Kazeminy	From Nov. 1, 2017 To Oct. 31, 2020	Chairman of the National Ethnic Coalition of Organizations (NECO)
Masaki Masudo	From Jan. 1, 2018 To Dec. 31, 2020	Member, Okinawa Promotion Council, Cabinet Office, Government of Japan Senior Advisor, Barclays Securities Japan Limited
Ryo Matsumoto	From Nov. 1, 2011	Professor Emeritus, University of Tokyo

	To Oct. 31, 2020*	Professor, Organization for the Strategic Coordination of Research and Intellectual Properties, Meiji University
Emi Matsushima	From Nov. 1, 2014 To Oct. 31, 2020	General Counsel, OIST
Reiko Ann Miura-Ko	From Nov. 1, 2011 To Oct. 31, 2020*	Co-founding partner, Floodgate
Yoshimi Nagahama	From Feb. 19, 2015 To Oct. 31, 2020	Mayor, Onna Village
Robert Nakasone	From Nov. 1, 2017 To Oct. 31, 2020	Worldwide Uchinanchu Business (WUB) Network Founder-Advisor
Lee James O’Riordan	From Nov. 1, 2017 to Oct. 31, 2020	Computation Research Scientist, the Irish Center for High-End Computing (ICHEC)
Ken Peach	From Nov. 1, 2011 To Oct. 31, 2020*	Professor Emeritus, the Particle Therapy Cancer Research Institute, Oxford
Milind Purohit	From Apr. 1, 2018 To Sep. 30, 2019	Dean of Faculty Affairs, OIST
Katsuhiko Shirai	From Nov. 1, 2011 To Oct. 31, 2020*	President, The Open University of Japan Former President, Waseda University Former Chairman of Okinawa Development Council
Ulf Skoglund	From Apr. 1, 2018 To Oct. 31, 2020	Dean of Graduate School, OIST
David Swinbanks	From Nov. 1, 2011 To Oct. 31, 2020*	Managing Director, Nature Publishing Group Regional Markets & Science & Medical Communications Asia-Pacific India Middle East Ibero-America Russia Managing Director, Macmillan Science & Education Australia & New Zealand
Fuji Takayasu	From Nov. 1, 2011 To Oct. 31, 2020*	Former Assistant PR Officer of the US Consulate in Okinawa
Nobuaki Tanaka	From Nov. 1, 2014 To Oct. 31, 2020*	Former Undersecretary General at the UN Headquarters CEO, GaiaContact
Moritake Tomikawa	From Feb. 19, 2015 To Nov. 5, 2020*	Vice Governor, Okinawa Prefectural Government

Gail Tripp	From Jun. 1, 2018 To May 31, 2021	Vice President for University Community Services, OIST
Albrecht Wagner	From Nov. 1, 2011 To Oct. 31, 2020	Chairman Emeritus, Board of Directors, DESY
Eriko Wauke	From May 18, 2015 To Oct. 31, 2020*	Principal, Okinawa AMICUS International
Hideo Yamasaki	From Nov. 1, 2014 To Oct. 31, 2020*	Dean of Faculty of Science, University of the Ryukyus
Philip Yeo	From Nov. 1, 2011 To Oct. 31, 2020*	Chairman, SPRING Singapore
Keisuke Yoshio	From Apr. 1, 2018 To March 31, 2021	Chief Operating Officer, OIST
Jürgen Zöllner	From May 24, 2017 To May 23, 2020	Executive Board, Stiftung Charité

[Name] *3 persons are also governors.

[Term] *Reappointed, Second Term

**Reappointed

II. Status of business implementation

See the attachment “FY2018 Performance Report.”

<Translation>

Fiscal Year 2018 Performance Report

From: April 1, 2018
To: March 31, 2019

Okinawa Institute of Science and Technology School Corporation

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
--------------	---------	------------------------	-----------------

As of March 31, 2019

Chapter 1 Education & Research				
1.1 Ph.D. Program Goal (1)	Using feedback from 2017, refine and improve measures to ensure that student recruitment, admissions, and enrolment proceed smoothly.			A
1.1 Ph.D. Program Action (1)	<p>(Courses)</p> <p>1101 Continue to develop the curricula, including courses taught by newly recruited faculty. Refine curriculum development process and approvals for new and changed courses.</p> <p>1102 Continue to provide the customized Ph. D. program, including pre-thesis research training and laboratory rotations and assignment of Academic Mentor for each student.</p> <p>1103 Continue to provide the programs for Professional Development for students including training that focuses on group activities and presentation skills, research conduct,</p>		<p>(Courses)</p> <p>1101 The Graduate School continued to refine and expand our curriculum of elective courses over the year. New faculty appointments allowed us to add more electives. In addition, a formal curriculum review process was commenced, to identify areas where teaching could be improved by expanding areas covered and avoiding duplication. A mechanism to award students credit towards the OIST degree for courses taken from other universities was developed, and will be implemented from the next term (May 2019).</p> <p>1102 We continued to provide the customized Ph. D. program, including pre-thesis research training and laboratory rotations and assignment of Academic Mentor for each student. All students were assigned mentors from within the OIST faculty, and have started laboratory rotations and courses.</p> <p>1103 Professional Development classes continued to develop the professional scientific skills of the students. The three main components of the course are (1) weekly seminars</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>career development, teaching experience and a program of student-invited visiting speakers.</p> <p>1104 Continue to provide the examination for progression to thesis research based on oral examination by prominent external examiner.</p> <p>1105 Conduct the final thesis examination based on oral examination by prominent external examiners, and confer degrees on completing students, using procedures refined from previous year's experience.</p> <p>1106 Continue to provide the Gap period training in language and research experience for incoming students, especially those who graduate from Japanese universities in March.</p>		<p>covering basic principles of research conduct and ethics, scientific communication, and aspects of science in society, (2) a cross-disciplinary group project, and (3) professional development skill building workshops and seminars.</p> <p>1104 Thesis proposal exams continue on a regular basis, with examination of the proposal in an oral exam by one external and one internal faculty examiner.</p> <p>1105 Thesis examination by public presentation and oral defense before two external examiners now established. OIST graduated 17 PhD students in FY2018. The second Graduation Ceremony will be held on May 25, 2019.</p> <p>1106 Continued to offer 'Gap Program' to a student before he started the PhD program, to develop English and laboratory skills.</p>	
1.1 Ph.D. Program Action (1)	<p>(Educational Environment)</p> <p>1107 Continue to enhance collaborative relationships with other universities by developing exchange agreements concerning interns, course credits, TA opportunities, and other exchange opportunities.</p>		<p>(Educational Environment)</p> <p>1107 OIST continued development of relationships with other universities by hosting visiting research students and special research students at OIST, and sending several OIST PhD students to other universities (Tokyo University, RIKEN, Princeton University, US Santa Barbara, Earlham Institute, Technische Universität Darmstadt, ATR, PMMH-ESPCI) for periods of research training and collaboration.</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>1108 Continue to maintain and enhance student record systems for monitoring of student progress, grades and completions.</p> <p>1109 Continue to enhance teaching support systems to manage laboratory classes, teaching materials, lecture and tutorial rooms, AV support, computer labs, and liaison between teaching faculty and academic services section.</p> <p>1110 Increase opportunities for OIST PhD students to learn essential research skills by organizing short courses in identified topics (such as mathematics, computer programming) and special topic courses by visiting researchers.</p>		<p>1108 Continued refinements to student records system, including new several graphical aid to visualize the data and the architecture of the future system.</p> <p>1109 New examination timelines, online web forms and project management system were developed to enhance the teaching supports. Continued to improve faculty briefings, student briefings, and have a monthly regular meeting with the Student Council.</p> <p>1110 The very successful Skill Pills short course series was continued, with an even greater variety of subjects and more frequent classes.</p>	
1.1 Ph.D. Program Action (1)	<p>(Student Support)</p> <p>1111 Continue to refine and improve the orientation programs for the incoming students providing information on the educational program, laws and rules, available laboratories for thesis research, and life in Japan.</p> <p>1112 Enhance international student understanding of Japanese culture by organizing cultural visits and provide opportunities for interaction with students in other Japanese universities.</p> <p>1113 Continue to provide an environment for the students</p>	* Increase of students receiving external scholarships, etc.	<p>(Student Support)</p> <p>1111 Refined and improved orientation programs, website and materials for the incoming students to provide clearer information to start their life as a PhD student and life in Okinawa.</p> <p>1112 Continued to provide opportunities to learn Japanese and Okinawan culture. Conducted educational excursions to provide opportunities for getting better understanding of Okinawan culture. Also, organized an exchange party and cultural seminar with other universities in Okinawa.</p> <p>1113 Continued to prepare and manage paperwork such as</p>	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>entering our Ph.D. program in which they will be able to concentrate in their research activities under the living standard comparable to that of the students of the best universities in the world that we are competing with. Commission a survey of comparative levels of support internationally at benchmark universities as a basis for future adjustment to financial support.</p> <p>1114 Continue to track the occurrence, response and outcome of incidents involving students, and if such incidents require involvement of OIST, to deal with the incidents in cooperation with the General Counsel Office and the Chief Operating Officer in charge of compliance.</p> <p>1115 Continue to collect and provide information of external scholarship opportunities to the students.</p> <p>1116 Continue to support career development of students by professional development activities including arranging of TA opportunities at OIST (short courses and OIST undergraduate workshops), appointment of senior research assistants, promotion of networking with leaders of universities and research institutions in Japan and around the world, active provision of the information concerning post-doctoral and other job opportunities, including a program of visiting speakers and individual career advice.</p>		<p>year-end tax adjustment, income tax return, visa renewal application, registration of birth, etc., on behalf of students in a timely manner. Also, supported preparing scholarship application as necessary. The study of comparative levels of support internationally at benchmark universities for future adjustment to financial support has been commissioned and is ongoing.</p> <p>1114 Continued to work closely with OIST Helpline, Health Center, Ganjuu Wellbeing Center, and the General Counsel Office for better response to the incidents and kept record in the Student Database.</p> <p>1115 Continued to provide information on available scholarship/fellowship opportunities for the students. Conducted preparatory seminars and supported application filling as needed.</p> <p>1116 The manager in charge of student professional development left OIST in August 2018. Because of the hiring restriction, we were unable to hire a replacement. Therefore, we were only able to offer a minimum set of professional development workshops and activities as described previously. Furthermore, as soon as the hire freeze was lifted, we prioritized the position of Professional and Career Development Coordinator and are currently interviewing candidates. The lack of availability of new</p>	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>Provide guidance and financial support for company visits to assist job hunting in Japan. Graduate School plans to conduct a survey on an annual basis to keep track of our graduates. In addition, the Graduate School will establish a networking platform, using LinkedIn, dedicated to the OIST PhD Program alumni, separately from the OIST Alumni Network that is to be established for a much broader population.</p> <p>1117 Enhance Student Support website to provide clear information and instructions on student financial support, travel support, and welfare support to students and their family members for better understanding on life at OIST and Okinawa.</p> <p>1118 Continue to support student travel arrangements such as conference/workshop travel, Educational Institutional visit and career development travel for students to enhance their specialty in scientific fields, career development and networking.</p> <p>1119 Continue to provide services to special students such as Special Research Students, Visiting Research Students and Research Interns to quickly adjust to new environment without complications and worries.</p> <p>1120 To emphasize dialogue with students by having regular meeting with Student Council and reflect feedback to</p>		<p>personnel positions is also disallowing us to focus on alumni management. Since we did not have any alumni until last year, this has to be a new position in the future. Since the alumni relations covers the interest of CPR and President's Office (fund-raising) also, the GS is standing by to coordinate with them to develop this. In the meantime, we are conducting exist interviews and doing what we can to keep in contact with our graduates.</p> <p>1117 Launched new Student Support website to provide clearer information and instructions to students and their family members.</p> <p>1118 Continued to provide adequate consultation and timely and smooth travel arrangements. Refined student travel guidelines and website for clearer information on travel rules and procedures.</p> <p>1119 Continued to provide services to special students to settle in new environment and to provide necessary support for them to concentrate on their study at OIST.</p> <p>1120 Having monthly meeting with Student Council to emphasize dialogue with students and reflected their</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	enhance the Graduate School services.		feedback to the Graduate School services to provide better services to students.	
1.1 Ph.D. Program Goal (2)	Continue to attract and select the graduate students for our Ph.D. program from amongst the best available worldwide in science and technology. At least half of the students will be non-Japanese.			A
1.1 Ph.D. Program Actions (2)	<p>1121 Review previous student recruitment and admission activities. Reflect the results of the analysis in the updated procedures and implement them effectively in a planned manner. Also effectively convey the appeal of OIST's unique educational program both in and out of Japan.</p> <p>1122 Continue to carry out student recruitment activities globally to attract the highest caliber graduate student candidates for the next intake of students arriving in September 2018 as follows:</p> <ul style="list-style-type: none"> - The number recruited: About 50 students - Major recruitment activities: <p>Continue to develop the graduate school website as a recruiting tool. In addition, print a concise and well-edited student recruitment brochure.</p> <p>Continue holding OIST Café in major Japanese cities by providing OIST recruiting information and English training.</p> <p>Continue to hold OIST Skill Pills Plus on campus for the undergraduate- and graduate-level students who are currently</p>	<p>* Number of A excellent applicants for the Ph.D. program (Japanese and non-Japanese)</p> <p>* Number of admitted students (Japanese and non-Japanese)</p> <p>* Caliber of incoming students (list of institutes from which the students received degrees, etc.)</p> <p>* Career destination of</p>	<p>1121 Reviewed this year's recruitment and admission activities. We did the close analysis of the data. We have effectively conveyed the appeal of OIST's unique education program in and outside of Japan through a postgraduate school fair in the UK, and individual information sessions in the US.</p> <p>1122 In October 2018, two recruiting members attended graduate school fairs at USC, and organized individual information sessions at USC, UCLA, UC Davis, UC Berkeley, UC San Diego. Also two staff members within OIST travelled to UK and attended three postgraduate school fairs.</p> <p>We have developed concise recruitment brochure both in English and Japanese, and have revamped the graduate school admissions website. The website launched on March 30, 2019.</p> <p>Held two OIST cafes: two in Tokyo (July and January). We had attendance of small groups of students, but the engagement was high (e.g. Two attendees applied for the</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>studying at Japanese higher education institutions</p> <p>Hold the Science Challenge Workshop for undergraduate Japanese students, and the Collaborative Experimental Design and Analytics for undergraduate- and masters-level Japanese and foreign students to provide experience of cutting-edge research and OIST graduate school educational experience.</p> <p>Print specially targeted brochures to recruit applicants from disciplines that have fewer students at OIST such as Chemistry and Marine Sciences.</p> <p>*Particular attention and effort will continuously be made to advertise OIST's unique educational opportunities to Japanese undergraduates. Increase participation by Japanese students through a range of targeted approaches, via holding briefing sessions in some universities and events such as graduate school experience workshop in FY2017.</p>	the students after graduation	<p>PhD program. Three attendees participated in Science Challenge 2019). We also held an additional session at Osaka University to introduce our research internship program.</p> <p>31 Japanese and international students participated in Science Challenge 2019, and they all had an incredible time at OIST. At the end, a total of 6 students have been accepted to our PhD program through our student recruitment activities.</p> <p>Faculty has traveled abroad (conferences) and disseminated their research and OIST information. Also, when they have workshops on campus, we encouraged them to distribute our brochures and promotional materials.</p> <p>We did not create specifically targeted brochures for Marine Science and Chemistry, but we did put together an additional workshop called Skill Pills Plus that invited 13 Japanese and international students. That was a successful event.</p> <p>As for our online presence, the number of followers on Twitter doubled from 520 to 1206 (about 230% increase), and similarly, the number of followers on Instagram also doubled from 500 to 1030 (about 200% increase) within the same fiscal year. Also, we worked with a popular science YouTube channel, MinuteEarth, to highlight OIST research. The video has generated over 250,000 views within 3 days.</p> <p>Attachment 1. 1-1 Students Information</p>	
1.2 Scientific	OIST Graduate University will continue to conduct world-class research in cross-disciplinary fields of science.			

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
Research Goal	<p>OIST Graduate University is committed to the pursuit of new knowledge through basic science. We are committed to the training of an international community of students. OIST Graduate University will encourage, motivate and support its talented faculty, students and scientists by promoting a collaborative cross-disciplinary research environment, providing excellent facilities, equipment and research support, and by conducting regular and rigorous peer review. OIST Graduate University aspires to be responsive and relevant to the needs of society. We believe that the most significant contributions will result from the discoveries made through basic science. Following “Basic Policies for Economic and Fiscal Management and Reform” by the Cabinet, we will continue applying our science and technology to the needs of society and industry in Okinawa.</p>			A
1.2 Scientific Research Action	<p>(Promotion of cross-disciplinary research)</p> <p>1201 Success in cross-disciplinary research depends on the strength of the Research Unit, led by our faculty members. To this end, we will continue to recruit the best people to our Faculty.</p> <p>In October 2017, OIST organized a “Perspective Council” meeting with a number of external world-renowned scientists and OIST Faculty member representatives. They suggested a combination of targeted hiring in some areas, combined with continuing open recruitment.</p>		<p>(Promotion of cross-disciplinary research)</p> <p>1201 Based on the recommendation by “Perspective Council”, we advertised 19 faculty positions in 9 areas. In addition, we had an Open Search, not specific to any given area, but designed to include excellent scientists who either conduct cross-disciplinary research themselves or do not fit into the neat slots of the 9 Search Committees just mentioned. We exchanged faculty candidates’ information across faculty search committees from different disciplines. For instance, we had candidates in computer science and neuro science who were considered by both committees. Also, we currently have a Target of Opportunity search in</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>1202 The architecture of our buildings, the rotation of each new class of graduate students through disciplines outside of their areas of interest and social activities all contribute to promoting joint projects across disciplines. Attachment #1-1 lists the Research Units at OIST as of February 2018. Attachment #1-2 lists the major scientific areas of research.</p>		<p>computational biology where almost 10 faculty across the spectrum of disciplines are interested in collaborating individually or in groups with a prominent scientist. We continue to have faculty lunchtime seminars which encourage faculty from different areas to attend. We held a Faculty Retreat where faculty from many disciplines interacted and discussed science. Finally, efforts continue to bring postdocs together to discuss research, including OIST Science Speed Dating where “romance isn’t the goal, [it is an] opportunity to reach out and meet fellow scientists on campus” in 5 minute meetings.</p> <p>1202 Out of necessity, the Space Allocation Sub-Committee has found that it is advantageous to locate many entry level students who participate in unit work during rotations, in a common area, which encourages students to learn about a variety of disciplines from each other and thereby encourages multi-disciplinary Ph.D. theses. They are encouraged to spend at least 2 rotations outside their declared field of interest.</p>	
1.2 Scientific Research Action	<p>(Research Support)</p> <p>1203 In Research Support Division (RSD), the Section Leader of Mechanical Engineering and Microfabrication Support Section (MEMS) left in March 2018 and we will recruit a new leader. There is a need to recruit further machinists, to deliver a timely and high-quality service. We also need to set up electronics support. In addition, we will conduct international peer reviews of</p>		<p>(Research Support)</p> <p>1203 Research Support Division (RSD) recruited a new section leader of the Mechanical Engineering and Microfabrication Support Section (MEMS). The section reinforced the support for machining and started consideration of required resources for electronics support. We conducted international peer reviews of MEMS and Instrumental Analysis Section (IAS), and received various</p>	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>Instrumental Analysis Section (IAS) and one other section. We will discuss all CAPEX requests (common, shared and dedicated) at Users groups, coordinated by Research Support Sections, to avoid duplication. We will also advise OIST researchers of common equipment available at national facilities, such as NIMS.</p> <p>1204 Animal Resources Section will start new research support service, the production of genetically modified animals using genetical engineering technique. We will consider basic concepts for animal facilities in the future laboratory buildings.</p> <p>1205 DNA sequencing section will continue to support research activities by (1) providing library preparation and sequencing supports using high throughput sequencers, (2) modifying the existing experimental protocols and developing new protocols for library preparation. In addition, the section will newly develop a management system to store and disclose research materials and data according to the “Okinawa Institute of Science and Technology Graduate University Guidelines on Archival and Disclosure of Research Data, Laboratory Notebooks, Research Specimens and Chemicals”.</p>		<p>advice from experts which is very useful for operation of the sections.</p> <p>We discussed all CAPEX requests (common, shared and dedicated) at Users groups to avoid duplication and encourage sharing of equipment. We also advised OIST researchers of common equipment available at national facilities, such as NIMS.</p> <p>1204 Animal Resources Section hired one new technician of gene engineering and gathered apparatus and devices for conducting new research support; production of genetically modified animals. We contributed to basic design of animal facilities in the future laboratory buildings, which was highly convenient for researchers and animal care takers.</p> <p>1205 (1) Providing library preparation and sequencing supports using high throughput sequencers: In January 2019, DNA sequencing section installed PromethION, Oxford Nanopore which has features on long-reads and increment of data per run. The section started test runs on various species with the help of internal users and started collecting know-hows for use including the handling of samples.</p> <p>(2) modifying the existing experimental protocols and developing new protocols for library preparation: To respond to increasing number of samples, we started operation of new equipment such as QIAgility, Qiagen and Mantis, formulatrix and made process automation of routine</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>1206 Mechanical Engineering and Microfabrication Support Section (MEMS) will improve skills of using CNC machining tools to prompt high level machining quickly. Also, MEMS will enforce the safe use of machine tools by staff members, researchers and students.</p>		<p>operations such as a part of DNA determination and library preparation.</p> <p>Development of a management system to store and disclose research materials and data according to the “Okinawa Institute of Science and Technology Graduate University Guidelines on Archival and Disclosure of Research Data, Laboratory Notebooks, Research Specimens and Chemicals”: We have conducted surveys on software which is appropriate for management of information of experiments such as samples and data and listed up local and cloud software which is specialized on lab note, easy to take note, and started its test operations.</p> <p>1206 The MEMS Section has greatly improved skills and usage of CNC machine tools within the section. This has been accomplished through a program of cooperation and training with various tool and software manufacturers. Coupled to this the section has created a more efficient work flow for work passing through the machine shop, where jobs are passed to specialists for each CNC tool. This has improved the quality of work whilst also reducing the lead time.</p> <p>Safety within the machine shop has also been improved by the introduction of enhanced training and rules for staff and researchers and it’s leading to a safer environment for all machine shop users.</p>	
	<p>1207 Scientific Computing and Data Analysis Section</p>		<p>1207 The Scientific Computing and Data Analysis section</p>	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>(SCDA) will continue working on the promotion and research support of the GPU computing system utilization in data analysis and AI computing. Propose integrated support solution to top up the use of the GPU computing system.</p> <p>More generally, SCDA will continue to promote the effective use of High Performance Computing (HPC) in the research environment, and the integration of computing and data analysis research projects with the university centralized IT infrastructure.</p> <p>1208 To respond expanding research fields/activities and research specimen/materials, the number of the personnel involved in health and safety will be increased. Recruitment activity on diving safety officer continues until full-time diving safety officer is hired. The system which promotes and enriches communication on safety, such as assignment of safety contact person in each workplace, will be developed. Emergency training exercises will be planned and executed under newly hired Emergency Response Coordinator.</p> <p>1209 Continue to develop the next generation Research Equipment Database. Continue to improve systematically the websites of Research Support Division/Sections for effective communication.</p> <p>1210 The time when the research unit is closed or the</p>		<p>(SCDA) implemented the second iteration of OIST GPU computing system which allowed to respond to OIST increase in usage and demand for data analysis and AI computing resources. The SCDA also started proposing on premise and cloud-based HPC solution to OIST workshop and seminar events involving external attendees. The SCDA worked together with the IT division and other RSD sections to provide LIMS (Laboratory Information Management System) and high performance image analysis remote desktop platform.</p> <p>1208 The diving safety officer was recruited on March 1, 2019. We decided to establish a safety contact person in each lab, and added the provision on the safety contact person to the Safety and Health Management Rules. See 5301 and 5302 for the Emergency Response Coordinator.</p> <p>1209 We made progress on the planning of the next generation Research Equipment Database. The format of the websites of Research Support Division/Sections has been standardized to provide information systematically and effectively.</p> <p>1210 We have made the guidelines for lab closing and</p>	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>researcher/student left OIST is the critical point for research references storage. Then, the checklist on storage of research references and samples when the research unit closes, or the researcher/student is leaving OIST will be created. We will continue to promote research ethics, such as organizing Research ethics seminar inviting an external specialist.</p> <p>1211 Grants and Research Collaborations Section will encourage further collaborations with other sections, such as Faculty Affairs Office, to provide better support on application and management of external research funding for faculties, researchers and student and continue proactive actions to collect grants information and delivery of the information.</p> <p>1212 Based on the RSD administrator survey, we will develop a training and other package to enhance skills of all administrators and progress their careers.</p> <p>We will benchmark the research facility services, costs and staffing levels with those at IST and Weizmann.</p> <p>To support the new head of MEMS, we will develop a service standard for the machine shop.</p> <p>Imaging Section (IMG) will continue to improve the support structure under leadership of the new section leader, initiate to conduct the support activity on cryo-EM for BINDS</p>		<p>researchers leaving OIST for management of research data and published it on the Research Support Division website. A professor of Tokyo Institute of Technology, Jun Fudano, who is a leader in research ethics education, was invited on December 13, 2018, and a workshop on research ethics was held.</p> <p>1211 Grants and Research Collaborations Section (GRC) received information on new OIST faculties from Faculty Affairs Office (FAO) and prepared supports for external grants. GRC shared the information on external grants with relevant sections to facilitate interaction between sections. Other collaborative activities include the design of a series of seminars and workshop useful for a grant application (with a Postdoctoral Development Specialist, FAO), and the application for the Excellent Graduate University Program (with the Graduate School Office) etc.</p> <p>1212 Based on the RSD administrator survey, we developed a common chart which can be utilized for staff's skills and career development and explained and shared within the division. We visited Caltech for benchmark the research support structure.</p> <p>Policy manuals, clear workflows and rules have been put in place for the Mechanical Engineering and Microfabrication Section (MEMS)'s two teams, the microfabrication team and mechanical team. This has allowed for greater ease of access to all facilities and improved the responsiveness of staff to</p>	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>program. IMG will hold training workshops on light microscopy and image analysis with Advanced Bioimaging Support Platform (ABiS).</p> <p>Instrumental Analysis Section (IAS) continue the analytical instruments support. To answer the complex needs of many users, IAS review and set the user guidelines for instruments and standard operating procedures to create the lab where advanced analytical instruments can be used more efficiently. Continue to improve the training courses for users to provide the lab that can be used by many researchers. Addition to this, improve the level of staff so that they can provide sufficient support for advanced research.</p> <p>By inviting the International Advisory Board on Marine Science for our review, Okinawa Marine Science Support Section will enhance the research support service provided at the OIST Marine Science Station. We will hold an open day for local residents for communication and PR of our research. We will also attend the Okinawa Marine Science Workshop and further enhance our local marine science network.</p>		<p>requests.</p> <p>The MEMS also underwent a peer review in January 2019, where the operation of the section was reviewed. The report which followed this review showed the section was performing well given the current levels.</p> <p>Imaging Section (IMG) has grown with 2 more staff members in light microscopy and 2 staff members in electron microscopy. The new organization resulted in a much-improved support for the OIST users. The section has setup a workflow for single particle analysis in the context of AMED/BINDS program and offers now a trainee program to the Japanese and international Electron microscopy community. In addition to the daily support, members of the IMG are involved in scientific projects with publications and in teaching of national and international courses. In FY18 we organized 2 high-resolution light microscopy courses (ABiS Advanced Light Microscopy Training workshop) and a Tokuyasu cryo-sectioning course (with Juntendo, Tokyo) and a CryoEM course. Further, we setup collaboration agreements with Ryukyu University and Federal University of Minas Gerais (Brazil). More agreements are in preparation.</p> <p>Instrumental Analysis Section (IAS) has extended the support by reviewing user guidelines, standard operating procedures and visualized the progress of users' requests. IAS conducted training courses for the users and improved the staff's skill levels. IAS also received an external review by the experts</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
			<p>from the Max Planck Institute etc. and had advice for the global level instrumental analysis support system.</p> <p>In September, Okinawa Marine Science Support Section invited the International Advisory Board on Marine Science for our review of the research support service provided at the OIST Marine Science Station, and received positive review. We held an open day in conjunction with the Global Oceanographic Data Center for local residents for PR of our research in August, and approximately 90 people visited the station. We also attended the Okinawa Marine Science Workshop in November and enhanced our local marine science network.</p>	
1.2 Scientific Research Action	<p>(Publication and communication)</p> <p>1213 Continue to promote publication of research results in best quality international journals and participation in national and international conferences by encouraging researchers through publicity of research results and rigorous research evaluation.</p> <p>1214 Continue to provide accessible information about OIST research and its results to the scientific community and to the general public in Japan and overseas through OIST Web articles, press releases, press conferences, OIST</p>	<p>* Number of researchers (faculty, postdocs, technicians, and students)</p> <p>* Number of research publications (by impact factor)</p> <p>* Number of joint publications between different faculty members</p> <p>* Number of press</p>	<p>(Publication and communication)</p> <p>1213 Publications are enumerated during Faculty Annual Performance Appraisals. We continue to monitor OIST performance in publications by comparing to other universities. Via the Library and the OIST Institutional Repository (OISTIR) we continue to encourage communication of research publication results that are openly accessible. During the Annual Appraisals, we note the Open Access Percentage for the publications of each faculty member.</p> <p>1214</p> <p>- OIST disseminated information about OIST research and its results in FY2018 to the scientific community and to the general public in Japan and overseas by publishing 46 Web</p>	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>newsletter, brochures, and the OIST social media.</p> <p>---In FY2017, the main OIST websites were updated, streamlined, and moved to cloud hosting to improve site reliability and access speed worldwide. The internal communications website and the Directory were also rebuilt to accommodate the growing needs of the university. Continue updating and moving older OIST systems to the cloud, improve the quality of the public websites, make websites easier to index by search engines, and continue to respond to the university's needs by maintaining existing systems, building new ones, and giving excellent support and training to the users responsible of creating and managing scientific content.</p> <p>---In FY2017, OIST continued to receive significant press coverage resulting from proactive media outreach strategies targeting print, broadcast, and Web-based. This will continue in FY2018 to put in place effective media strategies to generate further press coverage, including those by major media outlets in Japan and overseas. As part of this effort, OIST will continue to produce press releases and articles about scientific outcomes, and other research and education activities at the university, which will then be disseminated to local, national, and international media through Japan's press clubs, and electronic clearing houses such as AlphaGalileo and EurekAlert!.</p> <p>---Continue utilizing ever expanding social media to disseminate OIST research and education activities.</p>	<p>announcements and/or conferences about research results</p> <p>* Number of research honors</p> <p>* Number of awarded research grants (number and amount)</p> <p>* The number of use of our research facilities by external organizations, etc.</p>	<p>articles and issuing 29 press releases, and holding 3 press conferences, as well as 4 press briefing sessions in Tokyo and Okinawa. Science Cafe style press briefing sessions in Tokyo were strategically planned and held in terms of their timing and content, helping to build good relationships with OIST scientists and journalists and generating press coverage, one of which resulting in a collaboration between an OIST scientist and a major textile company. The number of OIST press coverage increased through proactive media outreach activities including visits by print journalists and television crews to OIST.</p> <p>- FY2018 drew local media coverage that required very careful response due to subject matters. Under the direction of the VPCPR, and in close coordination with the President, EVP, Provost, VPGEHR, and Legal Counsel, the Media Section addressed press inquiries in a professional manner, keeping any damage to OIST's reputation to a minimum.</p> <p>- In FY2017, the main websites were hosted on a new cloud hosting service that emphasized flexibility and customization. Digital Service Section (DSS) used new and innovative technologies to rebuild Directory and intranet portal TIDA. However, maintenance and continued development required significant time by DSS and IT staff. Then in mid-FY2018, both DSS developers left OIST unexpectedly, leaving only one section member, and in the same period, key IT technical managerial staff also left. To reduce staff time spent managing the website hosting for DSS, IT transferred all website hosting responsibility to DSS. To improve service to the university in</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
			<p>spite of the limited staff available, DSS migrated four websites and rebuilt three others on a more mature hosting platform that prioritizes convention over customization, provides better maintenance and update support, and offers more established workflows and better tools. To further increase efficiency by streamlining maintenance and training, TIDA and Directory were rebuilt in the same CMS used for the other OIST websites. DSS changed strategy to giving developers better support and a smaller choice of technologies and frameworks to enable them to spend less time on infrastructure and maintenance and more time on development that will promote recognition of university research outcomes. Reliable website hosting and support ensure that OIST can withstand sudden increases in traffic. On January 26, Provost Mary Collins' prime-time TV appearance caused a 924% increase in website traffic compared to the previous day. On March 29, social media response to an OIST science web article drove a 281% increase in website traffic compared to the previous day. In spite of the sudden rise in hits, there was no interruption or degradation of server response time. Stable website hosting and conscientious maintenance keep OIST secure and ready for success. User support help desk sessions were doubled to twice a week, and monthly training sessions for new content editors were introduced. Digital Services also moved to the new IT support desk platform Service Now to provide more comprehensive support to users.</p> <p>- The dissemination of OIST's research results through news</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>1215 To establish a firm academic recognition, OIST will provide technical support to OIST staff, researchers and students for them to perform remote meetings smoothly.</p>		<p>distributions sites AlphaGalileo, EurekAlert!, and Japan's press corps and most importantly individual pitching of stories to journalists resulted in a number of print, TV, radio, and Web reports, including those by national dailies and broadcasters, as well as domestic and overseas media outlets. To note is a Bloomberg report on Prof. Tsumoru Shintake's wave power generation project and Provost Mary Collins' appearance on a very popular, prime-time Japanese infotainment program that led to a significant increase in the number of social media likes and followers.</p> <p>- OIST's reputation among major media outlets in Japan and overseas as well as press officers at Japanese universities and research institutions continued to enhance due to the timely research outcome disseminations and contributions by the Media Section members to Asahi Globe+ and Nikkan Kyogo Shimbun columns, invited talks associated with Japan Association of Communication for Science and Technology (JACST), which is a network of press officers at Japanese universities and research institutions.</p> <p>1215 Handled over 300 AV related requests for support in meetings, conferences and seminars, not inclusive of ad-hoc/email support. Zoom video conference integration was completed on Cisco units at over 40 locations across campus. BOG/BOC meetings continue to run smoothly due to the ease of use and reliability of the Zoom video conferencing platform. Zoom Rooms hardware solutions were installed in 3 locations and are currently in pilot testing</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
			<p>to evaluate alternatives for Lab 4 as part of continued Lab 4 AV planning. Various AV system installations and upgrades were completed, such as B503 dedicated video conference room with simultaneous interpretation, C209/C210 and Auditorium lased based projectors. Digital signage system was also upgraded with all 40 digital signage units switched over to Windows based players for improved reliability. Assisted various units with AV related purchases such as LCD displays, projectors and video conferencing equipment.</p> <p>Attachment 1. 2-1 FY2018 OIST Publications and Presentations</p>	
1.3 Faculty Affairs Goal	The University will continue to recruit international and Japanese scientists, with a mixture of senior scientists with an established record of excellence in research and junior scientists with excellent scholarship and creativity in research, to strengthen leadership in interdisciplinary research and its global presence.			A
1.3 Faculty Affairs Actions	<p>(Faculty Recruitment)</p> <p>1301 Using the recent Development Plan created by the Faculty, The University will continue to recruit new faculty consistent with the annual projections summarized in the Framework Document II, towards the goal of reaching 100 Faculty Units by 2023. Specifically in FY2018, OIST will seek to appoint outstanding faculty members in Chemistry, Cell Biology, Computer Science and Marine Science to increase the number of Faculty Units to 70.</p>		<p>(Faculty Recruitment)</p> <p>1301 Our goal of a net increase of 10 faculty for the FY18 Search seems clearly achievable at this point. We already have acceptances from candidates of two of these fields, and our hope is to hire in all 4 fields. Workshops and conferences continue to be held at OIST and continue to attract potential candidates. We expect the number of units to cross 75 by the end of June 2019.</p> <p>We continue to target the goal of 10 net faculty per year, and</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	Publicize OIST and solicit faculty recruiting to the conference participants by inviting and hosting prestigious international conferences to OIST. A 'Perspective Council' meeting held in October 2017 encouraged the continuing of our present policy of expanding in our areas of strength but encouraging more targeted hires in growth areas. In FY2018, OIST will further discuss recommendations internally and develop a strategy for faculty 20recruiting.		will adjust our hiring in FY19 to increase the number of units from 65 to 85 (we expect the FY18 hiring to exceed its target). The applicant pool had 1544 applicants and they were processed using Interfolio's system for the first time this year. We interviewed 40 candidates, and 6 have already accepted offers with many more to come. We are aware that only 10% of the interviewees are female, and it is very likely that the fraction of female candidates will drop this year. On the other hand, the FAO ensured that the ads placed excluded terms that are known to reduce female applications, that we had diversity officers on every faculty search committee, and we conveyed to these committees our desire and commitment to hiring more female faculty. We feel we did all we could to promote the women candidates but ultimately were limited by the mix of candidates selected by the faculty search committees.	
1.3 Faculty Affairs Actions	<p>(Faculty/Research Evaluation)</p> <p>1302 A new approach to Tenure Evaluation will be introduced to provide a flexible timetable for the tenure review and guidance to Assistant Professors. Changes to the tenure policy have been drafted and agreed by General Counsel Office and Administrative Compliance Divisions in FY2017, and we will implement the new tenure policy in FY2018.</p> <p>1303 Continue the evaluation of research units by</p>	* Number of research units evaluated	<p>(Faculty/Research Evaluation)</p> <p>1302 The changes to the PRP are complete.</p> <p>1303 We conducted 5 unit reviews in FY2018. Of these at</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>external committees consisting of world-class prominent scholars at the internationally highest standard – the committees will rigorously evaluate the achievements, uniqueness, future possibilities, and other elements of the research unit with fair and transparent standards. The evaluation results will be used in judgments of continuation of the research units. Unit evaluation of up to 4 units is planned in FY2018.</p> <p>1304 In addition to the existing Tenure Review Evaluation Committee (TREC, composed of OIST faculty members and an external member), we will implement a new tenure review system to be assessed by TREC (composed of external members) who are world-class prominent scholars and will conduct the review using internationally highest standard. The evaluation results will be used in judgments of promotion of the faculty members. Currently, three tenure reviews are ongoing, and another three tenure reviews will be completed during FY2018.</p> <p>1305 Continue to publish the summary of research evaluation expeditiously to fulfill the accountability to the public in using public expenses for the research projects.</p>		<p>least in 3 cases, units received an “Outstanding” rating in one or more areas. These 3 units essentially received all the operational and personnel funds and equipment that was requested. One of the other two received mostly had “Excellent” ratings and also will be funded well. Funding for the last unit is to be decided.</p> <p>1304 We are experiencing for the first time requests from faculty for the new tenure system that has been outlined in the PRP. We are still waiting for the first case of the new tenure review system to begin in FY2019.</p> <p>Under the existing tenure review system, 3 faculty members were granted tenure in FY2018, and other 2 reviews will be completed in FY2019.</p> <p>Regarding promotion review, one faculty member was promoted to full professor in FY18, and promotion reviews for other 3 faculty members will be completed soon.</p> <p>1305 With the implementation of Faculty Annual Performance Appraisal, we find that the response rate for Annual Reports have shot up.</p> <p>Attachment 1. 2-2 FY2018 Research Honors Attachment 1. 2-3 FY2018 Outreach by Faculty and Researchers</p>	
1.3	(Research Productivity Report)			

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
Faculty Affairs Actions	1306 Continue to publish the summary of research productivity expeditiously to fulfill the accountability to the public in using public expenses for the research projects. OIST Institutional Repository will be operated during FY2018 to allow open access to the publications from our Faculty. In FY2018, we will continue to improve efficiency to increase the number of publication in Institutional Repository.		1306 Research productivity is displayed in the form of publication lists that form part of the Annual Report. With the implementation of Faculty Annual Performance Appraisal, we find that the number of publications in OISTIR is also increasing.	
1.3 Faculty Affairs Actions	(Senior Appointment & Post retirees) 1307 New policies with respect to hiring senior faculty and extending faculty's contract beyond retirement was introduced at the end of FY2017 with a view to continuing to expand the University in new directions and towards our goal of maintaining innovative and productive faculty on campus. From FY2018, under the new policy, review shall be made on faculty member at age 70 or older, and the title of Professor Emeritus shall be provided. The first of our faculty who will reach retirement age has agreed to run his Unit down over the next two years. Over the next few years from FY2018, we will review the situation of all faculty over the age of 70, and most of them will be given 'Emeritus' status.		1307 One of the five units mentioned above that have undergone unit reviews is a senior professor over the age of 70. This was one of the units that received "Outstanding" rating.	
1.3 Faculty Affairs Actions	(Faculty Development) 1308 In FY2018, as part of the faculty development plan, we will continue to enhance "Mentor System" for each of the new hires at Assistant Professor level to help with development of the research units. We will also implement "Appointment & Promotion Committee" to give more		1308 All of our assistant professors are now required to report to us the name of at least one mentor. In addition during the Annual Appraisal, the DFA also provides mentoring especially regarding tenure and promotion. The APC has now been formed and is active in both faculty	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	efficient support for untenured faculty members. A post in the Faculty Affairs Office is advertised to take the lead in providing opportunities for development of Faculty members in OIST.		recruiting and evaluation. The post in Faculty Development area in the Faculty Affairs Office is still open.	
1.3 Faculty Affairs Actions	(Postdoctoral Career Development) 1309 Our first development officer for postgraduate career development initiated a wide-ranging program for 2016. Continuing the work, we will initiate an OIST wide development program to increase postdoctoral awareness of opportunities for development in their time here and for the future. (Purohit)		1309 We are in the negotiation with the Graduate School to expand the scope of career development opportunities even further to include graduate students and their job placement. After the GS hires a person for this task, we will combine efforts and expect OIST to benefit.	
1.4 Global Networking Goal	OIST Graduate University will continue to create strong networks with the international science community. It will do this, for example, by increasing collaborative agreements with universities and institutions, and by hosting academic workshop. OIST will increase its reputation as an International Graduate Research University committed to the betterment of society through conducting leading basic research and training the best scientists.			A
1.4 Global Networking Actions	1401 Continue to foster collaboration with other universities involving students; Develop exchange agreements concerning reciprocal student visits. Continue to expand collaborative relationships with other universities and institutes domestically and internationally for improving quality of research support sections. We will develop further partnership with University of the Ryukyus and the University of Tokyo.	* Number of collaboration agreements with universities and research institutions * Number of international courses and workshops	1401 We continued making new collaborative relationships with other universities and institutes domestically and internationally for improving quality of research support sections. Current initiatives in Okinawa and the wider Japan include the JUMPS program to allow Japanese researchers to use the OIST research facilities, participation in the AMED BINDS program for cryo-TEM protein structure determination, annual symposium with Univ. of Ryukyus's Medical School, first symposium with	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>1402 Continue to host international courses and workshops at the highest level in the world and provide students and young researchers with the opportunities of learning forefront science and interacting with outstanding peers. In addition, invite world-class international conferences to OIST venue to increase opportunities for the OIST researchers and students to establish networks with other researchers through academic and social events. Maintain flexible and efficient operation of each workshops by keep ensuring a reduction of cost for each workshop by reducing the travel support for the workshop participants and lecturers, obtaining funding support from other institutes and more efficient travel and accommodation procedures.</p> <p>1403 Continue to host top undergraduate students in residential courses and laboratory placements as research</p>	<p>* Number of participants of international courses and workshops</p> <p>* Number of students accepted from domestic and international universities</p>	<p>Univ. of Osaka. We have extended agreement on scientific and academic corporation with Univ. of Tokyo for 5 years. International efforts include the OIST KICKS program to encourage collaboration both in Japan and internationally, membership of the BRIDGE network with Weizmann, IST and Francis Crick Institutes, selection as a member of the Taiwan Dragon Gate program, and joint symposium with IBS Korea.</p> <p>OIST hosted 36 Visiting Research Students from international universities, including 9 Japanese students.</p> <p>1402 Held 8 OIST Workshops, 3 Mini-Symposia and 5 jointly funded workshops, including highly prestigious international conference "Strings 2018". OIST Workshops and Mini-Symposia are recommended by the Conference and Workshop Committee through strict judgment process to meet the criteria of world-class programs. In total 1,183 people participated, of which 688 were from overseas. A new category of travel support "travel bursaries", which has been introduced in FY2017 has been widely applied in FY2018, to further reduce the travel support cost for the workshop participants and to reduce the workload of the section staff.</p> <p>1403 OIST hosted 120 research interns including 27 Japanese students, 6 from University of the Ryukyus,</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>interns in research units.</p> <p>1404 Continue to implement special research student programs, and through those programs, accept students from universities in Japan and around the world for practical trainings in research units.</p>		<p>through a combination of Graduate School programs and Research Unit funded arrangements.</p> <p>1404 OIST hosted 15 Special Research Students from international universities.</p> <p>Attachment 1. 4-1 Academic Exchange Agreements List</p> <p>Attachment 1. 4-2 FY2018 List of OIST Funded Workshops/Mini-Symposia</p>	
Chapter 2 Governance & Administrative Transparency and Efficiency				
2.1 Basic structures for governance and business operations Goal	<p>The Board of Governors (BOG), which consists mainly of non-executive members based on the OIST SC Act and the OIST Bylaws unlike the case of most Japanese traditional institutions, takes ultimate responsibility for operation of the OIST SC and OIST Graduate University. The Board of Councilors (BOC) reviews the operations of the corporation with broad views of the society, including those of the local community. These two boards play key roles together in ensuring effective and transparent governance of the OIST SC in accordance with pertinent Japanese laws and the OIST SC Bylaws. The CEO/President will continue to provide the leadership in the execution of the Business Plan and accountable to the BOG. The governance of OIST SC especially features the appropriate relationship between these boards and the CEO/President. Auditors of the corporation will conduct rigorous audits to ensure appropriateness and</p>			A

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	efficiency of the operations of the corporation.			
2.1 Basic structures for governance and business operations Actions (1)	<p>(Basic Management)</p> <p>2101 Commences the seventh year since the School Corporation began. Regular BOG meetings will be held in May, September and February, and regular BOC meetings will be held in May and February 2019. In the BOG meeting in May, the performance and achievements of FY2017 will be reported and evaluated. The results of this assessment are made available to the CAO for public sharing.</p> <p>2102 BOG and BOC meetings will be augmented by two-three days of meetings that immediately precede the May and October meetings, to allow the BOG Steering Committee and the BOG and BOC sub-committees the opportunity to pre-discuss important issues. The BOG Steering Committee will continue its practice of meeting with the Faculty Council during the pre-meetings.</p> <p>2103 The CEO/President will continue to exercise leadership in all matters of daily operation of the OIST SC and the OIST Graduate University and ensure steady implementation of the Business Plan.</p>		<p>(Basic Management)</p> <p>2101 The BOG met in May and October 2018 at OIST, and in February 2019 over video conference. Both the May and October meetings consisted of full 2 days plus pre-meetings, however, October meeting had to be ended in the afternoon of Oct 4 due to a typhoon. Some non-urgent items were postponed until February. The BOC met for 2 days in May 2018 and by teleconference in February 2019. Both the BOG and BOC reviewed the FY2017 Performance Report prior to and during the May meeting. The Report was approved by the BOG and made available to the CAO for public posting.</p> <p>2102 New format of the BOG subcommittees was adopted to give opportunities for more focused discussions before the May and October meetings. The BOG Steering Committee continued its non-standard practice of meeting with the Students, Faculty Council and the Cabinet Office during the pre-meetings.</p> <p>2103 The CEO/President both exercised strong and effective leadership in all matters of daily operation of the OIST SC and the OIST Graduate University. The Business plan was utilized as the guide to management.</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>2104 Auditors will continue to conduct rigorous regular audits of all aspects of business operations, including budget execution, tendering and contracts, and the status of compliance, based on the Auditing Plan developed in advance while coordinating with internal audits and accounting audits, and conduct special audits in addition when deemed necessary. While keeping appropriate independence, Auditors will continue to maintain effective communications with the university management and will be provided sufficient information and staffing necessary for conducting their duties. Plan and result of Auditors' audit will be presented at BOG meetings, etc. for recommendations to reflect on business operations.</p>		<p>2104 Conducted the periodical audit in Nov. 2018 – Apr. 2019 on all aspects of business operations. Personal Information Protection Audit was conducted as well. Auditors' Audit Report for FY2018 will be submitted to BOG and BOC in May.</p> <p>Aside from the periodical audit activities, gathered information on the business operation through weekly meetings with the Chef Compliance Officer, and from the President, EVP, COO, Provost, VPs, etc. when necessary to gain better understanding of the management condition.</p>	
<p>2.1</p> <p>Basic structures for governance and business operations</p> <p>Actions (1)</p>	<p>(Commence Expansion)</p> <p>2105 In July 2015 an external “Peer Review” was conducted to evaluate OIST’s progress and expansion plan. The focus of the evaluation was to assess whether OIST Graduate University is on track to become a world-class education and research university capable of generating sustainable development for Okinawa. The Peer Review Panel unambiguously confirmed that progress across all key measures of excellence has been outstanding. In these measures, OIST was judged to be on a par with the 25 universities ranked highest by World University Rankings 2014/2015.</p> <p>As a central recommendation the Panel endorsed the general plan of growth suggested in the Framework Document II, aiming at a goal of approximately 100 outstanding research</p>		<p>(Commence Expansion)</p> <p>2105 Expansion of the University continued to be pursued. Preparation of the Strategic Framework started in order to direct the future of OIST. The plan has been developed since August 2018 based on an open consultation within OIST, through Task Forces and Working Groups which directly involved more than 100 OIST members. There have been many focus group and individual discussions with our external and internal consultants, and a series of well-attended Open Meetings on the Strategy to keep people informed and to allow comments and questions.</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>groups, with a proper balance among different fields of research, and a graduate school of a few hundred students in one decade by the mid 2020's. Toward the end of this decade of development, further growth of OIST should be deliberated and planned.</p> <p>Recruitment of new faculty will continue, under the guidance of the Faculty Development Working Group enriched by the recommendations delivered from the Perspective Council. Construction of Lab 4 will continue, design of Lab 5 will start and its construction plan will be prepared. In regards to the Incubator Facility, based on the operational status of the Facility to be developed in 2018, future development, etc. will be considered. Regarding accommodation, preparation will start for planning of new on-campus housing, and discussion will be made for future development of off-campus housing.</p>			
2.1 Basic structures for governance and business operations Goal (2)	<p>OIST Graduate University will continue to build and maintain the administrative organizations by which a world-class international graduate university will be effectively administered. While being autonomous, OIST Graduate University will keep close contact with the Cabinet Office (CAO) to be accountable for its budget execution and business operations to the Japanese Government.</p>			A
2.1 Basic structures for governance and business	<p>2106 Continue to hold regular meetings with the President/CEO, Vice CEO, and other executives to prepare major decisions, to share information and review the status of business operations. Continue to hold the bi-monthly</p>		<p>2106 The Executives and the Chair of the Faculty Assembly continued the practice of a regular bi-weekly meetings. The meetings were conducted under an agenda and recorded. Regular weekly management meetings were</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
operations Actions (2)	<p>information sharing meeting between the Executive and the Faculty Assembly to improve the flow of information between senior management and the Faculty. Continue to hold meetings of the Salary Review Committee as needed. Weekly meetings of the President, Executive Vice President, COO and Provost should facilitate a smooth coordination between the individual executives.</p> <p>2107 Maintain close communication with CAO under the supervision of newly appointed Chief Operating Officer (COO). Specifically, continue the periodical meeting to share information such as the implementation status of the Business Plan. In addition, prepare business sketch and budget requests for FY2019 well in advance through close discussion with CAO.</p> <p>2108 Submit the self-inspection and evaluation report to Japan Institution for Higher Education and Evaluation(JIHEE) , which has been authorized by MEXT as an independent accreditation organization before the end of June. And after the visit survey conducted by JIHEE in October, the evaluation result notified by JIHEE is publicized within FY 2018.</p> <p>2109 Provide a high quality of IT service, in alignment with the missions of the University.</p>		<p>conducted by the President with Provost, COO and EVP. President also continued regular meetings with individual Executives. The Executives also constitute the membership of the Salary Review Committee that has the mission to establish and maintain equitable compensation and associated policies at the University.</p> <p>2107 Maintained close communication with CAO through the Quarterly Meetings in April, July, November and January and other meetings held for specific issues. Appropriately and timely shared necessary information such as progress in FY2018 Business Plan, FY2019 Business Sketch, budget request for FY2019, and preparation of FY2019 Business Plan, etc.</p> <p>2108 OIST has been informed in March by JIHEE that OIST has conformed to all the designated evaluation standards and has made the result public on the website.</p> <p>2109 OIST IT continues to strive to provide a high level of IT service. IT introduced a new service portal. This service portal is easier to search, supporting users to self-service and enabling automated workflows. This portal</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>2110 Continue to ensure that clear and concise documentation and education programs exist to allow users to capitalize on IT resources and services. Overhaul the IT website and request management platform making them easier to use.</p> <p>2111 Continue to identify, evaluate, design, deploy and maintain infrastructure to support the business of the University, ensuring that infrastructure deployed can scale with the growth of OIST. Ensure that support infrastructures for research and education are as automated and efficient as possible. Work to create a more flexible and secure network environment, in response to growing demand for isolated research networks.</p> <p>2112 Ensure the alignment of IT with the business</p>		<p>has seen a reduction in requests for assistance and reductions in staff time spent on previously manual processes. The Network and Connectivity Section has also bolstered business continuity through the establishment of a geographically independent backup line to the Internet.</p> <p>2110 The migration to the new IT service portal has seen a complete revision of the request management platform and much of the IT service documentation. The new service portal features a simpler and easier to read format.</p> <p>2111 IT has seen substantial uplift in the network environment of OIST, allowing for the addition of Lab 4, handling the increasing data volumes of our research programs and more flexibly managing the need for isolated researcher networks. The firewall, core switches and campus network have all seen replacements or substantial improvements. As part of these improvements a new VPN service has been deployed, providing simpler and faster remote access to the campus. The video conferencing platform has been replaced, providing a far superior and reliable experience over the previous solution. The identity management solution has also been largely renovated, providing more complete and reliable information and allowing for increased automation downstream.</p> <p>2112 The IT strategic plan was endorsed by the IT Service</p>	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>through the development of an IT strategic plan. Ensure the alignment of the plan with the business and best practice through an external review of IT.</p> <p>2113 Continue to develop or assist in the specification of enterprise systems and services that support the research and administrative activities of the University. Work to develop systems that will increase the quality of the student experience, and lead to increased student retention and success. Assist the facilities division to develop accommodation and parking management solutions that ease management of these resources.</p> <p>2114 Best position the University within relevant local and global IT initiatives to enhance and support the research and administrative activities of the University, and best promote Okinawa.</p> <p>2115 Further standardize the operating environment provided to the administration, simplifying operation while reducing operating costs and increasing security.</p>		<p>and Support Committee. Subsequently a university wide strategic planning activity is underway, once complete the plan will be revised. The external review has been delayed to FY2019 owing to scheduling conflicts.</p> <p>2113 The Enterprise Applications Section has continued to make improvements and changes to our HEART (Finance and HR) system. These changes have improved user experience or modified the system to align with changes in law or rule. OIST IT has supported the Graduate School in evaluating several products to support student recruiting activities, with a system implementation slated for FY2019. IT has also supported the development of applications covering parking permit management, desk management and strategic planning.</p> <p>2114 The CIO participated in a benchmarking activity with Caltech. The CISM has presented a multiple conference national around the OIST efforts in cyber security. OIST IT continues to meet and collaborate with Nara Institute of Science and Technology, and meet with NAIST, JAIST, Kanazawa and Toyama Universities in an information sharing workshop centered around information security.</p> <p>2115 The automation and security of the IT managed devices has been improved in FY2018, through increased control over security and operating system updates, coupled with increased functionality in mobile device management.</p>	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>2116 Continue to increase information security through increased information security education, multiple factor authentication and device based access control. Further enhance existing monitoring capabilities, allowing for the detection of malicious software or activity which may reduce the integrity of OIST networks or systems.</p> <p>2117 Provide legal advice in connection with legal issues arising at the relevant divisions at OIST, and ensure legally appropriate operation of the OIST SC by providing overall legal support in drafting, negotiation and execution of the agreements handled by relevant divisions at OIST.</p>		<p>2116 The CISM has developed, and the COO approved an OIST personal information protection training program. This program is mandatory for all OIST members, educating them in the basics of Japanese personal information protection law. Cybersecurity monitoring services have been greatly improved over FY2018. These enhanced services are already flagging issues in real time, preventing or mitigating information security incidents.</p> <p>2117 By executing umbrella agreements for a part of simple Material Transfer Agreements to improve efficiency, the number of reviewed Material Transfer Agreements has been reduced to 66 (35% decrease from FY2017). However, more than 250 of complicated agreements requiring negotiation, including Collaborative Research Agreement (Industry / Academic), Patent Licensing Agreement, Sponsored Research Agreement, Non Disclosure Agreement and Collaborative Agreement with other Universities, have been drafted, negotiated, and concluded (13% increase from FY2017). More than 190 legal consultation (20% increase from FY2017) has been provided to the wide range of divisions at OIST, including human relations, faculty affairs and compliance matters. By responding to these demands in a timely and appropriate manner, the legally appropriate operation of the OIST SC has been ensured.</p> <p>- In the late FY2018, one of the two legal counsels left OIST and replacement for the position has not been retained yet.</p>	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>2118 Defend OIST SC from claims in and out of court and avoid financial damage and reputational risk.</p> <p>2119 In order to prevent any misconduct in and out of OIST, all employees, faculties and students will be required to take a program on Japanese laws and rules annually</p>		<p>However, the General Counsel Office at OIST (one General Counsel, one legal counsel and one paralegal/executive assistant) has made best effort to perform timely, more efficiently and carefully its increasing responsibilities including dispute resolution and drafting and negotiation of contracts with third parties.</p> <p>2118</p> <ul style="list-style-type: none"> - In one of the Tenure Review related lawsuits, after the Naha District Court judgement in favor of OIST in FY2017, the Higher court rendered a judgement to fully support OIST's argument, which was finalized and the lawsuit has been terminated after two and half years from the commencement. - In connection with another Tenure Review related lawsuit pending at the Naha District Court, a request to disclose relevant personal information in Tenure Review has been filed. The Committee at the Ministry of the Internal Affairs and Communication is currently reviewing the request to review OIST non-disclosure decision filed by the counter party. The General Counsel Office has provided to the Committee our opinion to explain the reason for non-disclosure decision and is waiting for the Committee to render its award. <p>2119</p> <ul style="list-style-type: none"> - Continued to provide educational program on Japanese laws and rules (especially on drug restrictions, drinking and 	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	(especially on drug restrictions, drinking and driving, carrying weapons, criminal procedure/deportation, OIST discipline).		driving, carrying weapons and knives, criminal procedure /deportation and OIST disciplinary action) to new employees at the time of hiring and existing employees annually (mandatory annual training), thereby raised awareness of compliance. - In early December with many drinking occasions, a warning against drinking and driving has been posted at TIDA (inter university website) to raise awareness against drinking and driving, thereby avoided any potential incident and accident by OIST employees and students.	
2.2 Budget allocation and execution Goal	On executing the budget including government subsidies, OIST Graduate University will make appropriate and effective allocation and execution of budget, by reviewing the cost performance, to fulfill its accountability to the government, sponsors, and general public. In particular, under the prevailing severe fiscal circumstances, the university will make efforts to improve cost efficiency to maintain and develop research and education.			A
2.2 Budget allocation and execution Actions	2201 By holding Resource Allocation Committee, formulate high-level budget allocation and reallocations proposals of the university resources, such as Personnel budget, Operational budget, Equipment budget, and Space. For the purpose of appropriate allocation of the university resources, the proposals will be reviewed by the Executive Committee and then approved by the President/CEO. 2202 Continue to have budgetary units, which are the		2201 By holding Resource Allocation Committee, formulated high-level budget allocation and reallocations proposals of the university resources, such as Personnel budget, Operational budget, Equipment budget, and Space. For the purpose of appropriate allocation of the university resources, the proposals were reviewed by the Executive Committee and then approved by the President/CEO. 2202 Continued to have budgetary units, which are the	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>allocation/execution unit, consistent with the organizational structure of the university and allocate the necessary budget to implement the Business Plan to each budgetary unit.</p> <p>2203 Continue to reinforce the budget allocation and reporting process by collaboration with the budget analyst assigned in each division. The status of budget execution will be reported monthly to the President/CEO at the monthly Budget Review Meeting in order to ensure appropriate and integrated budget management of all funds including the Subsidy for Facilities. In addition, report the budget execution status to CAO on monthly basis.</p> <p>2204 We will allocate Research Budget based on the rules of new start-up units and base budget allocation, which have been created in FY17. Also, we will implement new review sheet for external review of research units, which has been created in FY17.</p> <p>2205 Mid-year review in September and another review in January, at the beginning of the fourth quarter will be conducted. These are the time when all the research-related budgets are reviewed and adjusted when needed. This fine-tunes the expenditures to optimize spending. The reviews provide opportunities to check and to ensure capital purchases are in line for delivery and acceptance by the end of the Fiscal Year. As for the proper management of</p>		<p>allocation/execution unit, consistent with the organizational structure of the university and allocate the necessary budget to implement the Business Plan to each budgetary unit.</p> <p>2203 The budget allocation and reporting process was reinforced by actions such as front-loading the schedule through the collaboration with the budget analyst assigned in each division. The status of budget execution was reported monthly to the President/CEO at the monthly Budget Review Meeting in order to ensure appropriate and integrated budget management of all funds including the Subsidy for Facilities. In addition, reported the budget execution status to CAO on monthly basis.</p> <p>2204 We started improvement of operation of research budget allocation based on the rules of new start-up units and base budget allocation developed in FY17. Also, we implemented new review sheet for external review of research units which was improved in FY17.</p> <p>2205 Conducted Mid-year review in August and September and year-end review in November and December. Appropriate budget reallocation was made by taking into account the delivery and acceptance of capital purchases by the end of the Fiscal Year.</p> <p>2205 As for the proper management of competitive research funds including KAKENHI (Grants – in – Aid for</p>	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>competitive research funds including KAKENHI (Grants – in – Aid for Scientific Research), we will continuously and thoroughly implement proper management to the researchers through posting Misconduct prevention plan.</p> <p>2206 Continue to implement the procedures to comply with laws and University policy and rules – the procedure in budget execution includes reviews by the person in charge of compliance when individual budget expenditures exceed a predetermined threshold.</p> <p>2207 Conduct internal audit, as well as develop human resources through sending our staff to training courses provided by government agencies, etc. on regular basis, to ensure proper contract, procurement and accounting procedures.</p> <p>2208 In order to ensure proper implementation, a committee consisting of external experts will review contracts concluded by the University, taking into consideration whether appropriate procedures have been applied to for the General Competitive Bidding, public recruiting and proposal competition, and whether competitiveness and transparency have been ensured. At the same time, the University will seek comments from the committee concerning measures for improvement of</p>		<p>Scientific Research), through Misconduct prevention plan posted on our website and explanatory sessions, we continuously and thoroughly implement proper management to the researchers.</p> <p>2206 As cases are broken into some patterns when individual budget expenditures exceed a predetermined threshold, the section leader in charge of compliance reviewed the appropriateness of the negotiated contracts which do not exceed 5M JPY and the COO/AVP reviewed the ones which exceed 5M JPY.</p> <p>2207 Conducted internal audit based on the internal auditing plan under the Chief Compliance Officer. Continued to develop human resources through sending our staff to training courses provided by government agencies, etc. on regular basis, to ensure proper contract, procurement and accounting procedures.</p> <p>2208 Held a committee consisting of external experts twice and the committee reviewed contracts concluded by the University to ensure proper implementation of the tendering. And improved contracting procedures based on their advice.</p> <p>The number of holding of Specification and Technical Review Committee concerning large scale research tools/equipment is 10.</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>procurement procedures. In addition, exert efforts in ensuring fair and transparent procurement through measures such as establishing a committee including external experts and having their review on specifications of large research tools/equipment for each purchase based on the University's policy and rules.</p> <p>2209 The RSD Section Leaders will organize users group meeting to discuss with users to consider proposals of common research resources including Research CAPEX as well as shared and dedicated CAPEX.</p>		<p>2209 The RSD Section Leaders organized users group meeting to discuss with users to consider proposals of common research resources including Research CAPEX as well as shared and dedicated CAPEX to encourage sharing of equipment.</p>	
2.3 Efficiency of business operations Goal (1)	OIST Graduate University will continue its efforts to improve efficiency in its business operations.			A
2.3 Efficiency of business operations Actions (1)	<p>2301 Support research activities, such as promoting common/shared use of research equipment and tools (See 1.2) and utilizing the methods of unit price contracts, bulk purchase for research materials and reagents, and multi-year contracts.</p> <p>2302 Streamline the tender procedure by introducing new electronic bidding system.</p> <p>2303 Reduce costs of research equipment maintenance by reviewing the methods of maintenance etc.</p>	<p>* Reduction of costs by unit-price contracts and bulk purchase</p> <p>* Increase of use of the internal supply store</p> <p>* Ratio of purchase contracts concluded through tendering or other competitive</p>	<p>2301 Promoted unit price contracts, bulk purchase, and multi-year contracts research materials and reagents. The number of unit price contract: 32 items.</p> <p>2302 Started operation of the new electronic bidding system and streamlined the bidding process.</p> <p>2303 Reduced cost of research equipment maintenance by reviewing the methods of maintenance and by price</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>2304 Increase the number of the available items at the Internal Supply Store for supporting research activities efficiently and effectively.</p>	<p>processes (number of contracts and amount)</p>	<p>negotiation. Streamlined the contract process for such item that only one vendor will be able to provide the maintenance, by utilizing negotiated contract under the approval of Procurement Committee.</p> <p>2304 Improved the internal supply store operation to support research activities efficiently and effectively. The number of goods available at the store: 2657(vs. FY2017, increased 218 items) The number of customers for internal supply store and office supply store has decreased since there were fewer start-up laboratories due to the delay of completion of Laboratory 4 A large portion of the use of the internal supply store has shifted to online store. Increase of use of the internal supply store Amount of sales: JPY64,044,359 (vs. FY2017, increased -7.8%) Number of customers: 5,758 person (vs. FY2017, increased -2.1%)</p> <p>Increase of use of the office supply store Amount of sales: JPY 13,481,899 (vs. FY2017, Increased -5.7%) Number of customers: 5,526 person (vs. FY2017, 6,243 person, increased -4.5%) The sales amount has decreased as the result of promotion of cheaper goods with the same specifications.</p>	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
	<p>2305 Contracts of the University shall be based on the principle of ensuring sufficient transparency and competitiveness, and in case of making a negotiated contract, thorough information disclosure will be ensured, such as by disclosing the reason for the negotiated contract. Monitor procedure for negotiated contract continuously. At the same time, review procurement policy, rules and procedures regularly from the perspectives of efficiency and simplicity. Continue streamlining the segregation and procedures related to procurement for the future expansion of the University.</p>	<p>Use of online store for reagents Amount of sales: JPY 231,240,606 (increased 34.1%) Number of customers: 7,605 person (increased 94.2%)</p> <p>2305 To ensure proper and efficient implementation of tendering and contracts, we held the Contract Review Committee consisting of external experts, which reviews contracts concluded by the University. The 14th (July 22, 2018) and the 15th (Feb 19, 2019) meetings were held in FY2018. Reported to Committee the measures which is taken for cost reduction, and the measures for further improvement on procedure for tender and contracts. Held the internal Procurement Committee and reviewed 89 contracts.</p> <p>Also, established Specification Formulation Committees and Technical Examination Committee consisting of external experts to have their review on specifications of large research tools/equipment for each purchase exceeding 50m yen, to ensure impartiality and competitiveness on the tender procedure.</p> <p>The number of the Committee: 10</p> <p>Thorough information disclosure was ensured, such as by disclosing the reasons for the negotiated contracts when those expenditures exceeded a predetermined threshold (Building construction 2.5M, Goods 1.6M, Services 1.0M, Lease 0.8M).</p> <p>Started to take measures for further optimization for contract</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>2306 Based on the fruit of the previous investigations on price differences between Japanese and international markets, take actions to decrease the said differences and to promote cost-saving.</p> <p>2307 Collect reference data comparing prices of supplies and equipment etc. in Japan and abroad, and use such data in direct negotiation with manufacturers/agents/vendors, and provide information for internal users to improve cost efficiency of purchasing. And mitigate price increases caused</p>		<p>process while ensuring appropriate monitoring process for negotiated contracts. Additionally, prepared framework for explanation to clarify the relationship between required specifications and the reason for vendor selection.</p> <p>Reviewed the stipulations related to the PRP28 and procurement policy, rules, and procedures from the perspectives of compliance, efficiency and compatibility with the other rules and regulations.</p> <p>Exchanged information with the other research institutes (Tokyo University, Tokyo Institute of Technology, Kyoto University, Tokai University, Research Manager and Administrator Network Japan, IT company M, Mining company C, Service company C, and International logistic company F) to improve knowledge, skill, sense of compliance of the procurement staff, and enhancement of supply chain.</p> <p>2306/2307 Based on the analysis for the collected data (1,875 items in total), tried a new competitive process to get better procurement condition, and prepared for implementation of the process based on the result of the trial. Exhibited the analysis and result of the trial at the conference sponsored by Research Manager and Administrator Network Japan and Contract Review Committee. The exhibition won the poster prize.</p> <p>There were fewer number of large scale purchase contracts due to the delay of Lab4 construction, and hence start-ups of</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>by exchange fluctuations.</p> <p>2308 Take necessary actions, including revision of HEART system, in preparation for the change of consumption tax.</p> <p>2309 Support those efforts for administrative internationalization made by national universities and other institutions through conducting a training program at OIST to their staff members and enhance administrative efficiency by absorbing their knowledge and experience on university operation and management.</p>		<p>new unit.</p> <p>Ratio of purchase contracts concluded through tendering or other competitive processes (number of contracts and amount)</p> <p>Contract number: 105 (13.9%) [FY2017 130(21.7%)]</p> <p>Contract amount: JPY3,366 million (50.0%) [FY2017 JPY5,992 million (66.4%)]</p> <p>2308 Took necessary actions, including revision of HEART system, in preparation for the change of consumption tax.</p> <p>2309 Contributed to promote their administrative internationalization by receiving two trainee members from Tohoku and Osaka university. Enhanced administrative efficiency by absorbing their knowledge and experience on university operation and administration.</p>	
2.3 Efficiency of business operations Goal (2)	OIST Graduate University will continue to make the best use of its facilities and equipment.			A
2.3 Efficiency of business operations Actions (2)	2310 Continue efforts for optimization of use of academic and administration spaces, and research equipment through regular survey of current spaces in the existing buildings, close coordination with Research Support Division, and meeting and interviews with the research units to understand		2310 Continued update of survey data, formed a team consisting of members from BFM and RSD for process of space allocation, and completed the plans for installation of desk identification software after a test stage. Completed fit-out and installation of equipment for all new hires in	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>their needs.</p> <p>2311 Proceed with scheduling of repairs and maintenance of the Seaside House facilities and continue investigation in optimization of the use of the available space.</p>		<p>FY2018 and made modifications to the existing research and administration spaces that required expansion or relocation within existing buildings. Planned fit-out and allocation of research space in Lab 4, including physics labs that require special structural, mechanical and electrical arrangement.</p> <p>2311 Replaced or repaired air conditioning systems of guestrooms and common spaces. Completed renovation of the second floor of the buildings and succeeded in on-time and within-budget conversion the space to a community hall for use by all members of OIST. Have started studies on further optimization of the use of the existing building, and planning of new housing at the site of Seaside Campus.</p>	
2.4 Personnel management Goal	<p>OIST Graduate University will continue to improve the HR system toward a more effective organizational structure to provide better competitive compensation and benefits. It aims at hiring qualified employees, who have internationalized mind-sets and capabilities for the university operation. At the same time, as a corporation operated with the largely financial support from the Japanese Government, OIST Graduate University will continue to make efforts to contain overall personnel costs and to set the proper range of compensation. Moreover, the standard of employees' salary will follow the statement established by "Review of Salary Level of Independent Administrative Institutions, Special Public Corporations, etc. (distributed in Related Ministers' Meeting in December 2012)". The University will use the standard along with the Government's goal for the</p>			A

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	University in ensuring accountability by embodying actions following “On the Salary of Officers and Employees of Special Public Corporations, etc. (by Management Bureau, Ministry of Internal Affairs and Communications on November 17, 1017)			
2.4 Personnel management Action	<p>(Recruitment)</p> <p>2401 Establish the HR plan considering the prospective view. We also continue to maintain a timely and fair recruiting process in accordance with the Personnel Budget Sub Committee’s decisions. In addition, we continue to operate the HEART system as an alternative to the ERP system for the productive HR operation.</p> <p>2402 As the university expands, administration growth is expected. We will continue to make efforts to simplify and streamline administrative functions and operational processes, including utilization of job rotations, etc. It may include reassignment of employees among divisions, particularly for those who are categorized to the revision of the employee contract, converting fixed-term employees to a new category of non-fixed term employment ensured by the Japanese employment contract laws.</p> <p>2403 Review available information on applicants, interviewees and offers for candidates to ensure equal access for all persons in accordance with OIST policies. Analyze the current ratio of gender balance among all job levels and</p>	<p>* Number of employees (by job categories, nationalities, and gender), by seniority</p> <p>*Ratio of staff in administrative divisions to the total headcounts</p> <p>*Ratio of labor costs to the total operational budget</p>	<p>(Recruitment)</p> <p>2401 Discussed and prioritized new opening positions at PEREX Budget Sub-Committee, and allocated the new positions to divisions with the committee approval.</p> <p>2402 All open positions are posted on OIST Website where employees are encouraged to seek internal opportunities by checking the advertised job descriptions. Some people changed their job within or across divisions to develop their career.</p> <p>2403 To ensure fair selection process, interviewers include internal major stakeholders as well as the hiring managers. Also, multiple reference checks for each final candidate are conducted.</p>	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>categories. Identify strategies to improve the balance.</p> <p>2404 Consolidate available data and perform gap analysis on necessary data required for developing and implementing evidence-based strategies to accomplish the Taskforce Goals. Promote gender equality in all aspects of university management through diverse methods. Review best practices in developing a Gender Policy Code of Conduct in order to design one for OIST employees. Ensure the OIST Gender Policy Code of Conduct and other gender policies, rules and procedures are properly incorporated into the PRP document. Deliver unconscious bias and gender equality training for all managers who assess employees. Provide high quality sensitivity training for harassment and discrimination and educate all OIST staff on the process for reporting incidents through the OIST hotline and other communication mediums. Collaborate with Buildings and Facilities Management Division to plan, design and outfit appropriate, world-class facilities for pregnant women and working parents in each OIST building. Continue to offer networking opportunities for female OIST employees. Determine an appropriate assessment methodology of all prior collaborative programs/projects with Okinawa Prefecture and universities in promoting science to middle/high school girls; build on previous successes by further developing relationships and implementing more high-quality programs/projects.</p>		<p>2404 Available data were reviewed and a preliminary assessment was performed. A Gender Code of Conduct was created with input from various stakeholders. The policy was finalized as submitted for implementation for OIST employee. Unconscious bias and gender equality training were delivered for managers. Training was provided to all new OIST staff on the process for reporting incidents at OIST. Information cards were printed with this information and made available to all OIST employees. A parent's room and separate mother's room were designed for pregnant women and working parents. Networking opportunities were offered for female OIST employees during lunchtime events and special speakers throughout the year. Assessment are conducted via electronic feedback from previous participants and follow-up meetings. Relationship with the University of the Ryukyus were strengthened through ongoing meetings so that high-quality programs can continue to be implemented.</p>	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>2405 Collaborate with appropriate stakeholders (e.g., Occupational Health Section) to develop and implement policies to promote the health and safety of persons with disabilities at OIST by the revision of Act on Employment Promotion etc. of Persons with Disabilities scheduled for 2018. Provide counsel and input on removing barriers for providing equal working opportunities, as appropriate.</p> <p>2406 Improve data collection process in the Resource Center to identify opportunities to improve service to OIST stakeholders. The new staff will be embedded and trained. They will consider the feasibility of re-starting the OIST Clinic. Collaborate with staff at the Medical Center and Ganjuu to further improve service-related functions for OIST employees. Develop and implement an effective Children's Development Center staffing model to ensure continuous high-quality child care services. Evaluate CDC budget and spending history to streamline processes and reduce expenses. Identify, plan and deliver more robust after-school STEM programming to increase opportunities for K-12 children of OIST employees. Continue to provide with the service-related function, information, and facilities possessed under OIST to the faculty, employee, student, their family members, and external employees for the short term 45 accommodation. To achieve the goal, the HR service-related function will be reinforced through child-care services, family support, food services, health/medical services, and living needs.</p>		<p>2405 Developed and implemented the policy to promote the health and safety of people with disabilities at OIST through collaboration with Occupational Health Section.</p> <p>2406 The data collection process was improved by revising the categories of services and other details of how the services are delivered (e.g., time of day, a way of requesting service). A lunchtime session about getting a Japanese driver's license was offered to communicate information to more OIST stakeholders about the process and other details. The staffing models were evaluated and changes were made to ensure continuous high-quality child care services. The CDC budget and spending history were reviewed and the task of streamlining the process to reduce expenses has begun. More robust after-school STEM programming has been identified. Two positions, one for a school-age programs director and one for a dedicated school age programs teacher, were created and the selected staff will start their positions in the near future. Family member access card services were provided to families to access OIST for language education classes. Information for family member orientations was also gathered for future implementation.</p> <p>Training for new health center staff has been completed. A</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
			<p>new doctor joined in October and medical treatment at the clinic has been resumed.</p> <p>Attachment 2. 4-1 FY2018 Number of Employees</p> <p>Ratio of staff in administrative divisions to the total headcount; 32%</p> <p>Ratio of labor costs to the total operational budget: 39% (current estimate)</p>	
2.4 Personnel management Action	<p>(Compensation)</p> <p>2407 Referring to salary levels of national government employees and those of academic institutions in and outside of Japan, embody and implement actions following “On the Salary of Officers and Employees of Special Public Corporations, etc. (by Administrative Management Bureau, Ministry of Internal Affairs and Communications on November 17, 2017).”</p>	* Salary Level of employees (average salary by job category)	<p>(Compensation)</p> <p>2407 Raised 0.2% on all salary levels as correlating to the national government level based on “On the Salary of Officers and Employees of Special Public Corporations, etc. (by Administrative Management Bureau, Ministry of Internal Affairs and Communications on November 17, 2018).”</p> <p>Attachment 2. 4-2 FY2018 Salary Level of Employee</p>	
2.4 Personnel management Action	<p>(Career development, training and evaluation)</p> <p>2408 Deliver competency-based learning programs and management planning tools to support management succession planning and professional development.</p> <p>2409 Establish a menu of online and in-person learning modules and provide learning guidelines to strengthen selected workforce group competencies. Evaluate each</p>	* Number of employees taking training programs	<p>(Career development, training and evaluation)</p> <p>2408 Held Management Forum sessions to develop manager candidate pool.</p> <p>2409 Delivered online training to strengthen selected workforce group’s competencies.</p>	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>learning program effectiveness.</p> <p>2410 In line with OIST's PRP directive, continue to provide a monthly orientation to new incoming staff. Orientation will consist of general orientation about the university, its procedures and Japanese laws along with practical orientation on OIST administrative systems/rules for administrative staff.</p> <p>2411 In FY2018 OIST will maintain the number of language courses given to staff and family members. There is a very strong demand for language training and the ability to communicate in English and Japanese is a foundation of the success of the University.</p>		<p>2410 Provided monthly orientations to new employees. The program contains general orientation about the university, its procedures and Japanese laws along with practical orientation on OIST administrative systems/rules for administrative staff.</p> <p>2411 In FY2018, OIST maintained the same number of language courses as in previous fiscal years. There were 42 Japanese courses and 30 English courses.</p> <p>In FY2018 there were 549 students taking Japanese courses and 397 students taking English courses.</p> <p>In addition, English teachers collaborated with the graduate school, CPR, and the Office of Faculty affairs to produce seminars and trainings for OIST employees. English teachers also provided a weekly English club and weekly drop-in English support for OIST employees.</p> <p>The Japanese teachers gave a seminar on survival Japanese and worked with OIST's president to develop his conversational language skills in addition to offering cultural events such as Rakugo (traditional Japanese comedy) and Mame-maki (bean throwing).</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	2412 Continue to manage the Annual Performance Evaluation system based on the set objectives/metrics of each fiscal year. In addition, implement the Competency-based goal setting and performance evaluation defined to match its desired behaviors for each job grade and enhance Annual Performance Evaluation for its future improvement activities. Furthermore, through quarterly review, self-assessment and review by the reviewer, ensure to reflect the evaluation results in employee salaries, through fair and transparent evaluation and a reliable process with the advice from the Salary Review Committee. In addition, implement training on a regular basis to provide newly promoted managers as well as newly hired employees, with necessary updates to the process.		2412 Developed and conducted Goal Setting trainings for both managers and employees. The program contains purpose of performance management, how to cascade down of the organizational goals, importance of progress monitoring, effective feedback and how to use the findings for employees' development. Encouraged the quarterly meeting between a manager and an employee for a regular basis communication. Attachment 2. 4-3 FY2018 Number of Employees Taking Training Programs	
2.5 Compliance Goal:	OIST Graduate University will ensure compliance in all aspects of the university operations.			A
2.5 Compliance Actions	2501 Continue to review the budget execution status and contracts exceeding a predetermined threshold as well as new and revised policies, rules and procedures from a view point of compliance. 2502 Continue to establish and revise policies, rules and procedures appropriately in cooperation with the General Counsel Office at the right time in response to revision of relevant laws and regulations or changing situation, and hold the PRP review committee periodically to maintain consistency in policies, rules and procedures as a whole.		2501 Continued to review the budget execution status and contracts exceeding a predetermined threshold as well as new and revised policies, rules and procedures from a view point of compliance. 2502 Established and revised policies, rules and procedures appropriately in cooperation with the General Counsel Office at the right time in response to revision of relevant laws and regulations or changing situation. Besides, held the PRP Review Committee in February to maintain consistency in policies, rules and procedures as a whole.	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>Provide legal advice to each policy owner division in drafting and revising the policies, rules and procedures.</p> <p>2503 Continue to ensure appropriate creation, management and retention of documents concerning decision making and its processes in the operation, based on the Act concerning the Management of Public Documents (Act No. 66 of 2009) and University Policy and rules that are developed accordingly.</p> <p>2504 Handle personal information properly based on the Act on the Protection of Personal Information held by Incorporated Administrative Agencies etc. (Act No. 59 of 2003), the Act on the Use of Numbers to Identify a Specific Individual in the Administrative Procedure (Act No. 27 of 2013) and the University policy and rules that are developed accordingly. In addition, awareness on personal information is to be improved through obligation for faculty and employees to observe the University policy and rules including maintenance of a ledger or etc. that manages retained personal information.</p> <p>2505 Through Auditors' audit and internal audit, provide rigorous review of the status of compliance including the implementation of the policies and rules, and reflect the result as necessary.</p>		<p>Provided legal advice to each policy owner division in drafting and revising the policies, rules and procedures.</p> <p>2503 Ensured appropriate creation, management and retention of documents concerning decision making and its processes in the operation, based on the Act concerning the Management of Public Documents (Act No. 66 of 2009) and University Policy and rules that are developed accordingly.</p> <p>2504 Gave advice to relevant divisions, handled personal information properly based on the Act on the Protection of Personal Information held by Incorporated Administrative Agencies etc. (Act No. 59 of 2003), the Act on the Use of Numbers to Identify a Specific Individual in the Administrative Procedure (Act No. 27 of 2013) and the University policy and rules that are developed accordingly. In addition, awareness on personal information is to be improved through making Training materials for Staff .</p> <p>2505 Conducted internal audits based on the internal audit plan under the Chief Compliance Officer to ensure proper contract, procurement and accounting procedures. When individual budget expenditures exceed a predetermined threshold, the section leader in charge of compliance reviewed the appropriateness of the negotiated</p>	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>2506 To facilitate evaluation of situations that may give rise to conflicts of interest, formal written disclosure of external activities and commitments is required of all University officers and employees each year, based on the PRP Section 22.3.1 in “Avoiding Conflicts of Interest & Commitment”.</p> <p>2507 Review of research protocols by internal review boards and professional staff will continue to ensure that our research activities are compliant with pertinent regulations and laws. Professional staff will be sent the briefing session on pertinent regulations and laws to keep legal information updated and develop the professional staff.</p> <p>2508 To prevent misconduct of research funds, various measures will be taken, including initiatives for ensuring through familiarization of all faculty members and researchers with rules of use of research funds, and</p>		<p>contracts which are less than 5M JPY and the COO/AVP reviewed the ones which exceed 5M JPY.</p> <p>As concerning compulsory training in compliance, we provide the e-learning programs for all faculty and employees (mandatory training for newly hired).</p> <p>2506 To facilitate evaluation of situations that may give rise to conflicts of interest, COO required all university officers and employees to disclose their external activities and commitments on a formal basis based on the PRP Section 22.3.1 in “Avoiding Conflicts of Interest & Commitment”, and implemented its management and operation.</p> <p>2507 After reviewing of research and experimental plans by the Field Work Safety Committee, Biosafety Committee, Human Subject Research Review Committee, Laser Safety Advisory Committee and Radiation Safety Committee, all research activities were ensured to comply with relevant laws and regulations. We dispatched our specialists to conferences and workshops on safety and health such as ACSEL (The Asian Conference on Safety and Education in Laboratory) 2019.</p> <p>2508 To prevent misconduct of research funds, all new employees now learns about “proper use of public research funds” through on-line training. We explained about our rules of use of research funds to new faculty members at the</p>	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>increasing the awareness of thereof from the time they decided to join OIST. We will explain about our rules of use of research funds to new faculty members at the preliminary meeting before their start. Also after their arrival, we will explain the rules in more details.</p> <p>2509 All OIST researchers and students will be required to take research ethics education in order to promote responsible conduct of research. (See1.2). All OIST researchers and students who are awarded the external research funds will be required to take additional necessary research ethics education. Seminar on responsible conduct of research will be organized inviting the external specialist.</p>		<p>preliminary meeting before their start. Also after their arrival, we explained the rules to the faculty and his/her RUA in more details.</p> <p>2508 We are in discussions to have all the incoming faculty meet with the 3 Deans, preferably in groups, in order to mentor them on research fund misuse, tenure and evaluations, hiring of postdocs, teaching, and other issues. The Annual Appraisals are another opportunity where we convey any of this information as needed on a case-by-case basis.</p> <p>2509 A professor of Tokyo Institute of Technology, Jun Fudano, who is a leader in research ethics education, was invited on December 13, 2018, and a workshop on research ethics was held (refer to 1210). In order to make it easy to receive online training from the Association for the Promotion of Research Integrity, we have registered the staff and students in a batch.</p> <p>2509 We are creating a set of guidelines for ethical and collegial atmosphere for researchers in units. These will include anecdotes and examples of safe, respectful, and ethical conduct. We received the list of mandatory training (including research ethics) completion of OIST researchers and students and are devising a system to contact those who have not completed their training.</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>2510 The time when the research unit is closed or the researcher/student left OIST is the critical point for research references storage. Then, the checklist on storage of research references and samples when the research unit closes, or the researcher/student is leaving OIST will be created.</p> <p>2511 Through the Shohei Suzuki Research Safety Fund which was established in November 2017, we will promote research safety awareness and training at OIST and enable students and junior researchers or technicians from OIST to undertake fieldwork while developing the necessary skills including research safety training. We will also continue the Safety Enhancement Month in November and make enforcement of measurement for health and safety at OIST. Also, strict review of field work plan by the Field Work Safety Committee continues in FY2018. Field Work Manual is completely revised toward safer field work, and on-site inspection of field work by professional staff will be enforced.</p>		<p>2510 The guidelines of storing the relevant research data to the OIST server every time a research paper is published as well as at the timing of Unit closing or leaving of a researcher/student.</p> <p>2511 Through the Shohei Suzuki Research Safety Fund's financial support program to research safety, 6 programs were supported for training for fieldwork, purchase of fieldwork equipment. During Safety Enhancement Month, we conducted seminars and trainings on safety and health during field work activities, responses to mass casualties, and how to use emergency equipment. As a result of strict review of field work plan to ensure safety, no accidents occurred during 52 field work activities in FY 2018. There were no non-compliance items in the on-site inspection by the professional staff (diving safety officer). The field work manual is still being revised.</p>	
2.6 Information Disclosure and Public Relations Goal:	<p>The fast growth of the Graduate University requires OIST to guarantee transparency of academic and administrative operations, and accountability to the general public. In order to obtain broad support for OIST both from Japan and overseas, and to enhance worldwide recognition of the Graduate University, we will communicate actively with various stakeholders and promote OIST.</p>			A

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
2.6 Information Disclosure and Public Relations Actions:	<p>2601 Continue to disclose the information appropriately on the OIST website etc. to comply with the School Education Act (Act No. 26 of 1947) and the Act on Access to Information held by IAI (Act No. 140 of 2001).</p>		<p>2601 Continued to disclose the information appropriately on the OIST website etc. to comply with the School Education Act (Act No. 26 of 1947) and the Act on Access to Information held by IAI (Act No. 140 of 2001).</p>	
	<p>2602 Digital Services with 3 staff members in the CPR division maintains OIST's internal and external web functions at the highest level.</p>		<p>2602 In the first half of FY2018, two of three members of Digital Services (DSS) left OIST unexpectedly. One developer was hired in March. In spite of staffing problems, DSS has continued to maintain a high standard for internal and external web functions.</p>	
	<p>2603 Continue organizing press briefing sessions and press conferences in Okinawa and on the mainland, and generate press visits to OIST, in order to maintain consistently positive press coverage of the Graduate University. Continue working with other Japanese universities and research institutions through initiatives of the Japanese Association for Communication in Science and Technology (JACST). In so doing, continue enhancing OIST's presence in the academia and among journalists in Japan and overseas.</p>		<p>2603 The Media Section organized 3 press conferences, 4 press briefing sessions in Tokyo and Okinawa, as well as OIST visits by both print journalists and television crews to cover not just research and education activities at OIST but also community outreach events, club activities, and people at OIST. These resulted in a number of positive press coverage. Science cafe style press briefing sessions in Tokyo were strategically planned and organized in terms of their timing and content, generating media interest and helping to build good relationships between OIST scientists and staff, and science journalists. OIST's reputation among press officers at other institutions and good working relationships with them continued to increase due to contributions by the Media Section Leader and the Media Relations Specialist to science communication events associated with Japan Association of Communication for Science and Technology (JACST), which is a network of press officers at Japanese universities and</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>2604 Continue improving the OIST Graduate School Website, publication database, and News Center to facilitate retrieval of information about the OIST Ph.D. program and publications by OIST researchers, and to encourage use of OIST photos, videos, and other multimedia.</p> <p>2605 Continue increasing effective use of social media such as Facebook, Twitter, Flickr, You Tube, Vimeo, and Instagram to propagate excitement about the OIST Graduate University and to generate followers and fans of OIST, which include potential Ph.D. students, scientists, and faculty.</p> <p>2606 Continue to maintain and improve the library of OIST Policies, Rules and Procedures on the website.</p> <p>2607 In case of any incident, consult the General Counsel Office and the Chief Operating Officer to release duly and timely information in consideration of reputation</p>		<p>research institutions. In addition, an event was organized with a research unit in Tokyo to publicize an OIST wave energy project. The Media Section invited media outlets there and generated press coverage. Similar results were obtained for the OIST Forum. The OIST Forum succeeded in establishing a good working relationship with a relevant media company.</p> <p>2604 The Admissions website was redesigned to promote not only the PhD program but internships and other student-oriented programs.</p> <p>2605 The Media Section, the Community Relations Section, and the Graduate School continued to use social media for various outreach activities within and outside Japan. A consistent and improved content has been generated across OIST social media channels in 2 languages. The existence of more video is greatly improving engagement. Specifically, the Media Section Specialist worked closely other sections to increase OIST 's social media followers.</p> <p>2606 Maintained and improved the library of OIST Policies, Rules and Procedures on the website.</p> <p>2607 In March 2019, several claims were made by Okinawan newspapers that impact the reputation of the university. There was some delay in reaching consensus</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	risk.		internal statements to respond to misleading claims but the response by the time of the second article was significantly improved. Response times to all questions from journalists were appropriate. We are looking at ways to improve the timeliness of the decision making process.	
Chapter 3 Finance				
3 Finance Goal:	OIST Graduate University will continue to broaden its financial basis strategically by proactively increasing the amount of research grants, donations, and other income sources. Towards this end, the university will establish a set of incentive measures to encourage faculty and staff to be more active in applying to the third party income. OIST will also prepare a newly revised Medium-Term Strategy for External Funding.			A
3 Finance Actions:	<p>(Grants) 3001</p> <p>(a) Increase opportunities to deliver grant information, available application support, importance of networking etc. to OIST researchers through Grants and Research Collaborations Section's website and visit to their offices.</p> <p>(b) Make effort to recruit more external grant facilitators according to the research field where more OIST scientists wish to receive advice from the facilitators.</p> <p>(c) Further discuss design of incentive programs with Dean of Research and other executives.</p>	<p>* Increase of the number of application for external research grants</p> <p>* Increase of the number of awarded research grants (number and amount)</p> <p>* Increase of the number of external funding to OIST</p>	<p>(Grants) 3001</p> <p>(a) Grants and Research Collaborations Section (GRC) actively interviewed researchers to understand their need for grants and provided grant information of their interest to individual researchers. Also, through the GRC website and an email, GRC announced supports for a grant application that included internal seminars organized by GRC. GRC worked with a Postdoctoral Development Specialist (FAO) to provide an opportunity of interactive discussion about KAKENHI with OIST researchers, and the GRC manager became one of the panelists.</p> <p>(b) GRC made an effort to secure more external grant</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>3002 The Grants and Research Collaborations Section continue to collect information about grant opportunities in Japan and abroad and communicate these on a regular basis to members of our research community. In addition, the section will actively visit major funding agencies to collect information about any precursory activities leading to announcements of new grants.</p> <p>3003 Encourage researchers to apply for private sector and industry-related grants and provide proactive application support such as translation, editing, and budgeting.</p>	(total amount and breakdown)	<p>facilitators through a human network and also discussed how the grant facilitators should function for practical support in a grant application process.</p> <p>(c) GRC discussed the design of a KAKENHI incentive program to increase the number of applications and adoption rate. GRC offered a variety of supports to OIST researchers until the application deadline, and the researchers enrolled in this program will receive the incentive depending on the result in April 2019.</p> <p>3002 GRC has distributed grant information to the OIST research community using the on-campus information portal site TIDA and e-mail. In particular, according to the needs of researchers, GRC paid attention to whether necessary information was successfully delivered to them. GRC also visited and exchanged information with major funding agencies such as the Ministry of Education, Culture, Sports, Science and Technology, and Japan Society for the Promotion of Science, etc., in order to learn current discussions on scientific and technological policies.</p> <p>3003 GRC shared information on the grants from private sectors and industries to the Business Development Section responsible for applications for the grant of this kind.</p> <p>3003 The Technology Development & Innovation Center (TDIC) manages industry-related collaborations focused on technology development and funded by the government and</p>	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
	<p>3004 We anticipate healthy proportional increase of third party income hoping for added income encouraged through incentive systems.</p>	<p>the private-sector. In FY2018, TDIC:</p> <ul style="list-style-type: none"> Concluded and managed 23 industry-related projects: <ul style="list-style-type: none"> ➤ 22 collaborative research projects (2 new and 20 renewed projects) ➤ 1 Startup Accelerator Program project Promoted 40 private-sector funding opportunities to the OIST research community, supported the submission of 19 grant proposals, and secured 4 private grants <p>By providing proactive encouragement and support to the research community and strengthening relationships with government and private-sector funding agencies, external funding to support technology development research at OIST was more than ¥143M in FY2018.</p> <p>3004 We continued our incentive scheme to provide research fund to postdocs for KAKENHI applications and upgraded the program. In this program, postdocs receive review of their application before the submission by leading Japanese scientists who have experience reviewing KAKENHI applications.</p> <p>In addition, we introduced a new incentive scheme to provide a one-off salary bonus in proportion to the money received to professors and STG members.</p> <p>Attachment 3. 1 FY2018 External Grants and Donations Table</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
3 Finance Actions:	(Donations) 3005 OIST has started to establish a Development Office to manage gift and donation solicitation including representation in the USA.		(Donations) 3005 Senior Advisor for Institutional Development joined in June, expanded the network in US, developed a mechanism to encourage and receive donation outside Japan. This foundation is expected to be launched in Nov 2019. Senior Associate continued to develop basic infrastructure for fundraising operation.	
Chapter 4 Contribution to Self-sustainable Development of Okinawa				
Contribution to Self-sustainable Development of Okinawa Goal:	<p>The Cabinet Office “Basic Policy on Economic and Fiscal Management and Reform 2017” includes measures to develop Okinawa as a driving force in stimulating the Japanese economy and advocates support for the formation of a global intellectual and industrial cluster in Okinawa. The Technology Development & Innovation Center (TDIC) reflects the university’s commitment to national policy and to its founding objective to contribute to the self-sustaining development of Okinawa, as stipulated in the OIST School Corporation Act of 2010.</p> <p>The mission of the Technology Development & Innovation Center is to foster innovation at OIST and in Okinawa by promoting the transfer of discoveries made in the research laboratories to industry for societal and economic benefit. TDIC proactively supports proof-of-concept research, inventions and patents, collaborations with industry, entrepreneurship and start-ups, and partnerships with other public and private organizations that promote innovation in Okinawa</p> <p>In FY2018, TDC will continue to implement the following</p>			A

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>broad measures:</p> <ul style="list-style-type: none"> (a) Identify, protect, and market research discoveries with the aim of promoting innovation and technology transfer (b) Enhance the proof-of-concept program to support innovative technology research and drive inventions towards commercialization (c) Foster entrepreneurship and the creation and incubation of startup companies with the aim of developing an innovation ecosystem (R&D cluster) in Okinawa (d) Expand collaborations with industry as a mechanism to develop new technologies and promote technology transfer (e) Strengthen regional, national, and international partnerships with innovative public and private organizations with the aim of developing an innovation ecosystem (R&D cluster) in Okinawa (f) Understand the components and indicators of successful innovation in science and technology and measure their socio-economic impact on Okinawa <p>Self-sustaining development of Okinawa also depends on the dynamic, inclusive, and diverse engagement and participation of local citizens. To this end, OIST cares deeply about its social impact on Okinawa and engages with the local community through campus tours, science festivals, and educational events. The university also strives to develop its campus as a center for cultural and community activities.</p>			

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
4 Contribution to Self-sustainable Development of Okinawa Actions:	(a) Identify, protect, and market research discoveries with the aim of promoting innovation and technology transfer 4101 Ensure that invention disclosure procedures capture the intellectual assets of OIST while complementing its basic research mission by proactively engaging with faculty and researchers.	* OIST intellectual property (number of invention disclosures, patents filed and awarded, etc.).	(Identify, Patent, and Promote Research Discoveries) 4101 OIST research continues to result in new discoveries that have the potential for commercial applications. Proactive engagement with faculty and researchers identified inventions from new Research Units and in new areas, including quantum computing. In FY2018, the OIST intellectual property portfolio was expanded. OIST achieved a milestone of 100 total awarded patents, with a total number of 111 by the end of the year. The total number of patent applications reached 368 by the end of the year. Attachment 4.1 Patent Status	
	4102 Expand the panel of international external experts for efficient and strategic management of the university's intellectual property. Enhance quality of the Invention Evaluation Committee and patent filing with the expanded panel of external experts.		4102 5 new external patent experts (3 from the US and 2 from Japan) were integrated into the IP Specialist Network. The network now totals 37 members from 5 countries. The extensive network of experts and the discovery and protection of seeds have led to the following achievements this fiscal year. <ul style="list-style-type: none"> • 12 new invention disclosures evaluated by the Invention Evaluation Committee • 59 new patent applications filed • 47 new patents awarded • 4 new license agreements 	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>4103 Introduce an intellectual property assets evaluation platform on which industrial partners, competing technologies and potential for infringement are periodically reviewed to effectively protect the intellectual property assets and accelerate technology transfer activities.</p> <p>4104 Continue to expand awareness of inventions and protection of intellectual property throughout the university by organizing training courses, seminars, and workshops for students and researchers. Hold an international conference to increase visibility of the university as technology development and innovation center in Asia.</p>		<p>4103 An intellectual property assets evaluation platform, PatSnap, was introduced, which facilitated exhaustive and objective searches of prior art and evaluation of patentability. In addition, the platform helped identify business trends and target industries for marketing.</p> <p>4104 TDIC increased activities to strengthen awareness of inventions and intellectual property by targeting specific segments of the OIST community:</p> <ul style="list-style-type: none"> • Graduate Students: “Introduction to Intellectual Property” for 1st year graduate students conducted by a global patent expert • All Staff: Introducing intellectual property policies and procedures to all new employees at orientation • Researchers: “Intellectual Property for Researchers” courses conducted by global patent experts; Training inventors to pitch their technologies at the JST Technology Showcase • Research Units: Frequent visits to research units to discuss intellectual property and introduce TDIC services • Faculty, Researchers, Students: Technology Licensing Specialists conduct one-on-one meetings with faculty, students, and researchers at their request 	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
			<p>To increase OIST's visibility as a technology transfer hub in Asia, TDIC, in partnership with the World Intellectual Property Organization (WIPO), hosted a 3-day Presidents Summit on Intellectual Property and Technology Transfer in November 2018. 70 attendees from 5 countries in Asia participated, including science ministers, university presidents, and technology transfer managers.</p> <p>Attachment 4. 1 Patent Status</p>	
4 Contribution to Self-sustainable Development of Okinawa Actions	<p>(b) Enhance the Proof-of-Concept Program to support innovative technology research and to drive inventions towards commercialization</p> <p>4105 Upon the successful completion of the R&D Cluster Research Program in FY2017, the Proof-of-Concept Program will be enhanced to include support for innovative technology research in areas that offer technological breakthroughs based on advances in basic research. The new initiative, Innovative Technology Research (ITR), will complement the existing Phase I and Phase II Commercialization Research phases of the POC Program. Results from ITR are expected to promote collaborations with industry, provide a base on which to build external funding, and lead to new inventions that feed into Phase I and Phase II commercialization phases.</p> <p>4106 Ensure the advancement of ongoing Phase I and</p>	<p>* Number of official contacts with companies, with the view of future collaborations.</p> <p>* Number of collaborative projects with companies (collaboration agreements, joint research projects, commercialization of intellectual property, etc.).</p>	<p>(Expand R&D Projects with Industry Collaborators and Diversify Funding Sources)</p> <p>4105 Innovative Technology Research (ITR) was integrated as a new phase of the POC Program to seed and complement the pre-commercialization Phases I and II.</p> <p>5 new ITR projects were selected in the areas of energy, environment, health, and physical science.</p> <p>4106</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>Phase II POC projects by continuing to provide funding, market reports and analysis, hands-on project management, educational courses and events, and access to industry experts. Maintain connections to completed POC projects to ensure continued commercialization efforts.</p> <p>4107 Expand and strengthen the panel of industry reviewers, experts, and mentors for the POC Program by attending industry conferences to identify experts, coordinating meetings with POC project teams, and organizing networking events.</p>		<ul style="list-style-type: none"> 3 new Phase I projects were awarded in the areas of drug development, renewable energy and AI. 2 new Phase II projects were awarded in the areas of waste water treatment and bio sensing. <p>A total of 12 POC projects received support in FY2018: 10 new and 2 ongoing from the previous fiscal year. Since the POC program was established in FY2016, 31 total projects have been supported.</p> <p>4107 The POC Program continues to expand its Specialist Network of external technical and industry experts to enhance peer-review and mentorship of projects it supports. In FY2018, 18 global technical and industry experts were added to the network, which now totals over 70.</p> <p>Attachment 4. 2 FY2018 Industry-related Collaboration and Innovation Seminars and Events</p>	
<p>4 Contribution to Self-sustainable Development of Okinawa Actions</p>	<p>(c) Foster entrepreneurship and the creation and incubation of startup companies with the aim of developing an innovation ecosystem (R&D cluster) in Okinawa</p> <p>4108 Develop and implement a Startup Accelerator Program to support entrepreneurs and startups, including access to facilities and equipment, assistance with fundraising, and connections to commercialization experts. Develop and implement rules for eligibility, selection,</p>	<p>* Number of technology development research projects supported (Proof-of-Concept, R&D Cluster Research, etc.)</p>	<p>(Foster the Creation of Entrepreneurial Spinoff Companies)</p> <p>4108 In FY2018, OIST piloted Okinawa's first global startup accelerator program with ¥15M external funding from the Okinawa Prefectural Government. The program leverages OIST to attract innovative entrepreneurs from around in the world to incubate their venture businesses in</p>	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>other technologies at OIST. Open the workshop to students and researchers from other universities in Okinawa to promote entrepreneurship in the prefecture. Explore ways to expand the workshop by training instructors to provide the courses in Japanese.</p> <p>4110 Identify industrial areas in which OIST is developing expertise through analysis of OIST intellectual property.</p> <p>4111 Operate space in the Technology Development Labs (Lab 3 Level A) to nurture new technologies and proof-of-concept research towards commercialization.</p> <p>4112 Implement an incubator facility proximal to the campus to serve as a launchpad for startups and a collaboration space for OIST researchers and industry partners. In order to achieve its function, ensure development of the facility and its operations. Design, equip, and market the facility to foster collaboration and seed an innovation ecosystem centered around OIST.</p>		<p>TDIC also organized a “Train the Trainer” program where 5 OIST staff were trained on lean startup methodologies to enhance their ability to provide hands-on support to OIST researchers interested in commercializing their technologies. This will enable TDIC to provide lean startup training throughout the year, both in English and Japanese.</p> <p>4110 An intellectual property assets evaluation platform, PatSnap, was introduced to explore the patent landscape, including the competitive landscape. The platform also helps identify business trends and target industries for marketing.</p> <p>4111 Space in the Technology Development Labs (Lab 3 Level A) continues to be at full capacity. The first team recruited into the Startup Accelerator Program incubated their startup in the Technology Development Labs while the incubator facility was under construction.</p> <p>4112 In FY2018, OIST finished construction on a 500m2 facility on-campus to incubate startup companies. The “Innovation Square Incubator” can house ~5-10 seed-stage startup companies. The incubator is unique in that it: (1) is available to startups not only from OIST but also from anywhere in the world; (2) is open to established companies collaborating with OIST researchers; (3) includes both engineering lab space and biotechnology lab space in one facility; (4) contains open co-working labs as well as private</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
			<p>lab suites; and (5) provides access to the core facilities and equipment on the main campus.</p> <p>OIST aims to leverage the incubator facility to seed an innovation ecosystem with research, startups, and established companies collaborating and doing business in Okinawa. While the primary goal of the incubator facility is to promote the growth and success of startup companies, there are opportunities to collect modest rent income and other external funding starting in FY2019.</p>	
4 Contribution to Self-sustainable Development of Okinawa Actions	<p>(d) Expand collaborations with industry to facilitate development of new technologies and promotion of technology transfer</p> <p>4113 Promote collaborative research with industry by proactively identifying potential partners, building long-term relationships, and hosting company visits and exchanges.</p> <p>4114 Ensure success of existing industry-related research projects funded by the Okinawa Prefectural Government (OPG). Proactively pursue new projects that align with the</p>		<p>(Drive Inventions towards Commercialization through the Proof of Concept Program)</p> <p>4113 In FY2018, TDIC managed:</p> <ul style="list-style-type: none"> ▪ 23 collaborative research projects (2 new and 20 renewed collaborations) ▪ 7 new Non-Disclosure Agreements (NDA)s were concluded with companies to discuss new collaborative projects ▪ 60+ new connections with companies to introduce OIST research and discuss opportunities for collaboration. <p>Attachment 4-2 FY2018 Industry-related Collaboration and Innovation Seminars and Events</p> <p>4114 In FY2018, TDIC worked closely with Okinawa Prefectural Government to pursue new projects aligned with the Okinawa Prefecture Science and Technology Promotion</p>	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>Okinawa Science and Technology Roadmap to support research at OIST and diversify funding. In addition, contribute to meetings and symposia related to the projects to enhance knowledge and technology transfer.</p> <p>4115 Promote OIST technologies and strengthen relationships with industry by participating in industrial exhibitions, workshops, and conferences nationally and internationally.</p> <p>4116 Expand external funding by identifying relevant sources of public and private-sector funding, encouraging researchers to apply, and supporting the application process.</p>		<p>Roadmap. As a result of these efforts, the OPG supported 7 OIST projects, including providing funding to the Startup Accelerator Program.</p> <p>4115 To promote OIST technologies, TDIC specialists participated in 8 domestic and international industry exhibitions including:</p> <ul style="list-style-type: none"> ▪ Medix Tokyo ▪ Okinawa Promotion Seminars in Osaka and Tokyo ▪ BioJapan 2018 Yokohama ▪ Okinawa Venture Market, Naha ▪ MRO Aviation Meeting Okinawa, Naha ▪ nanotech 2019, Yokohama ▪ SLUSH Tokyo 2019 ▪ ConnecTech Asia 2018, Singapore <p>In addition, in January 2019, TDIC organized with JST the 2nd OIST technology showcase to exclusively feature 4 patented OIST technologies to more than 100 companies that registered for the event. OIST inventors conducted one-on-one meetings with industry officials to explore licensing and collaboration opportunities, with several opportunities for follow up.</p> <p>4116 To enhance external funding, TDIC promoted 40 private-sector funding opportunities to the OIST research community and supported the submission of 19 grant</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>4117 Enhance business development activities by strengthening internal expertise in business and marketing of science and technology by encouraging staff participation in professional development courses.</p> <p>4118 Work closely with the Office of the General Counsel to build university expertise in negotiating and administering complex agreements with industry, including non-disclosure agreements, materials transfer agreements, collaborative/sponsored research agreements, licenses, consulting agreements, and MOUs.</p>		<p>proposals of which 4 were funded.</p> <p>4117 TDIC staff members continued to strengthen their professional expertise in technology transfer best practices by participating in more than 22 professional development courses and seminars on topics including: contract writing, machine learning for AI, social innovation, trademark fundamentals, and management of technology.</p> <p>4118 TDIC continues to work the Office of the General Counsel to complete, often with significant negotiation, research and non-disclosure agreements, and to standardize agreements and streamline negotiations with companies as much as possible.</p>	
<p>4</p> <p>Contribution to Self-sustainable Development of Okinawa Actions</p>	<p>(e) Strengthen regional, national, and international partnerships with innovative public and private organizations with the aim of developing an innovation ecosystem (R&D cluster) in Okinawa.</p> <p>4119 Proactively coordinate interactions with local and national organizations that encourage innovation and technology transfer.</p>		<p>(Support Research in Areas that Offer Breakthroughs in Technology through the R&D Cluster Research Program)</p> <p>4119 Connecting to organizations with mutual interests in developing innovation in Japan is a key part of OIST strategy. To this end, TDIC achieved the following:</p> <ul style="list-style-type: none"> In June 2018, OIST signed an MOU with DeepCore, an AI-focused incubator that cultivates entrepreneurs in Japan who want to change the world with technology. DeepCore is a wholly-owned subsidiary of the SoftBank Group. Exchanges of researchers and entrepreneurs were 	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>4120 Develop a long-term strategic plan for how the incubator facility, Startup Accelerator Program, and other entrepreneurial programs will contribute to the development of an innovation ecosystem centered around OIST. Host global experts in entrepreneurship to advise on strategy to accelerate startup activity in Okinawa.</p> <p>4121 Work closely with the Cabinet Office, Okinawa Prefectural Government, and other key entities on actions to</p>		<p>carried out to lay the foundation for future collaboration.</p> <ul style="list-style-type: none"> Helped establish the Startup Okinawa Club, a membership club for aspiring entrepreneurs in Okinawa to meet and connect. The Startup Okinawa Club organized its first meeting at OIST in December 2018 Hosted the 3rd Okinawa Startup Program Demo Day, sponsored by the Bank of Ryukyus and Okinawa Times Hosted the “Technology Startup Accelerator Summit” organized by Beyond Next Ventures where 5 OIST teams pitched their technologies and participated in office hours with venture capitalists <p>Joined Hello Tomorrow Japan, a Tokyo-based organization established by the Japan Deep Tech Association to promote science and deep technologies to create a better future.</p> <p>4120 A strategic plan to develop an innovation ecosystem centered around OIST was drafted in 2018 with three main goals: (1) broaden innovation initiatives at OIST; (2) facilitate a startup ecosystem around OIST; and (3) participate in regional planning initiatives in Okinawa. In FY2018, OIST hosted meetings with entrepreneurship experts and investors to advise on innovation strategy, including: BEENEXT, ANRI, Euglena Fund, 0→1Booster, Google Japan, Beyond Next Ventures, Spiral Ventures, and Global Life Science Ventures.</p> <p>4121 OIST worked with the Okinawa Prefectural Government to support the establishment of the Startup</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>establish an innovation ecosystem in Okinawa.</p> <p>4122 Organize international seminars, workshops, and symposia on the theme of innovation, entrepreneurship, and R&D cluster development to increase global awareness of Okinawa and to strengthen local expertise in international relationships.</p>		<p>Accelerator Program. We also worked with the Cabinet Office on a strategic plan to develop an innovation ecosystem centered around OIST.</p> <p>4122 To promote innovation and entrepreneurship, TDIC organized 16 courses, seminars, workshops, and events, reaching 640+ participants (Attachment 4-2).</p> <p>Of particular note, in March 2019, TDIC and CPR organized the “DeepTech Evolves the World” Forum in Tokyo in partnership with NewsPicks. ~200 participants from industry attended the forum, which included keynotes, panel discussions, and startup pitches from 3 OIST research teams</p>	
4 Contribution to Self-sustainable Development of Okinawa Actions	<p>(f) Understand the components and indicators of successful innovation in science and technology and measure their socio-economic impact on Okinawa.</p> <p>4123 Establish partnerships necessary to advance analysis of innovation indicators at OIST and in Okinawa. Establish methods that produce and aggregate statistical data to develop indicators of technological innovation in Okinawa and analyze their impact.</p>	<p>* Number of symposiums, meetings, workshops organized or hosted by OIST around topics related to innovation, technology development and R&D cluster development.</p> <p>* Number of participants in events, courses, symposia, meetings, workshops,</p>	<p>(Strengthen Regional, National, and International Partnerships for R&D Cluster Development)</p> <p>4123</p> <ul style="list-style-type: none"> TDIC established collaborative research with Dr. Jun Oshiro, Professor of Law and Economics at Okinawa University to analyze the socio-economic indicators of science and technology in Okinawa. Professor Oshiro and his students will work with OIST determine the strengths and opportunities in the Prefecture to support innovation, based on available social, economic, and technological data. TDIC is also working with Dr. Guarev Tikas, Suzuki 	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
		and seminars on topics related to innovation, technology development, and R&D cluster development.	Foundation Fellow at Toyohashi University of Technology on a case study on how research-driven universities can contribute towards socio-economic development of a region.	
4 Contribution to Self-sustainable Development of Okinawa Actions	(Networking with local institutions and communities)	* Number of visits and visitors (including visitors on the Open Campus Day) .	(Networking with local institutions and communities)	
	4124 Continue exchange programs by holding science lectures with core medical institutions such as Chubu Hospital and Nanbu Medical Center and Medical Department of the University of the Ryukyus.	* Number of local students who visited the campus.	4124 Helped medical staff in Okinawa to organize the Harvard Medical School Introduction to Clinical Research Training Program at OIST, which has been introduced by OPG. Many medical professionals in Okinawa attended the program.	
	4125 Support large number of visitors (including companies and etc.) to the campus.	* Number of lectures and talks for local students.	4125 Providing the tour information to the Prefectural Board of Education and schools and also posting the information on OIST website, we welcomed 27,673 visitors including 4,500 to OIST Science Festival.	
	4126 Hold the 9 th OIST Science Festival (Open Campus Day) at the OIST Campus. Promote the involvement by school students and local residents.		4126 Held 2018 OIST Science Festival, and 4,500 visitors enjoyed the 31 science programs. 350 OIST faculty, research staff, students, and administrative staff helped the event. 14 elementary and junior high school students in Onna joined the event as volunteer in public address. We invited the students in Leading Program, University of Hokkaido for a science demonstration.	
	4127 Continue to invite school children in Okinawa to the OIST campus to give them the opportunities to see and learn		4127 Sending the tour information to each school through Prefectural Board of Education and each education office, we	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>about cutting-edge research facilities, with the aim of increasing their interests in academic and professional careers in science and technology. Continue the campus visit program for all senior high-schools in Okinawa in close collaboration with the Okinawa Board of Education and individual schools. Also invite the elementary and junior high school students.</p> <p>4128 Continue and strengthen visits program for mainland Super Science High Schools, which provide advanced science and technology education programs, in collaboration with OPG and tourism organizations.</p> <p>4129 OIST will maintain as series of talks to all levels of school children given by faculty and other well-known scientific figures.</p> <p>4130 Organize the 9th Onna/OIST Children's School of Science in collaboration with Onna Village.</p> <p>4131 Organize a series of cultural events such as concerts and exhibitions both in the Auditorium and other facilities, to attract the local population to the University.</p>		<p>welcomed 1,480 students from 25 high schools, 435 students from 11 junior high schools, and 1,780 students from 24 elementary schools. (Total 3,554 students)</p> <p>4128 We joined the School Trip Fair in Tokyo which was organized by Okinawa Convention and Visitors Bureau, and 313 students 5 Super Science High Schools. (Total number of mainland schools: 683 students from 13 schools)</p> <p>4129 We welcomed the speakers from National Astronomical Observatory of Japan, and Tokyo Institute of Technology for the science talks at OIST Science Festival.</p> <p>4130 Held the 9th Onna/OIST Children's School of Science, and welcomed 142 students. 31 OIST teaching staff, 55 OIST administrative staff, 12 from Onna Village Office, 35 school teachers in Onna helped the program. Also 10 university interns helped the classes.</p> <p>4131 4 Art exhibitions including the collaborative one with Okinawa Prefectural University of Arts, 2 music concerts, 1 Ryukyuan Traditional Performing Arts.</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	4132 Assist local schools to enhance children's English ability and cross-cultural understanding by participating in meetings on English education hosted by local boards of education and facilitating OIST community's contribution to English programs at local schools.		4132 -A member of UCS has attended meetings of the Onna Junior High School planning Committee. UCS is discussing possible initiatives with with a member of the Onna Education Board regarding science education, especially for girls, at the Onna Junior Highs School that is being built. -OIST hosted "English Story and Speech Contest" by Onna Board of Education, and 1 English instructor and 1 admin staff joined the contest as judge. (CPR)	
4 Contribution to Self-sustainable Development of Okinawa Actions	<p>(Other matters concerning Okinawa development)</p> <p>4133 Continue to employ talented people from Okinawa by holding community-based job fairs and participating in an information session regarding job opportunities for the students of the National Institute of Technology, Okinawa College.</p> <p>4134 As we participated in events such as Okinawa Sangyo Matsuri and others, we will continue to have OIST representation at major cultural, industrial or academic events in Okinawa. OIST will continue to work with the U.S. Consulate and the OPG to organize the science event for the high school students' research for enterprise, "SCORE," which is becoming one of the major science education competitions on the island.</p> <p>4135 Establish OIST FAN Club and provide to the club members information of OIST, chance to join the events, and</p>	<p>* Number of employees from Okinawa (researchers and staff)</p> <p>* Number of externally organized international conferences and workshops and number of the participants at the OIST venue.</p>	<p>(Other matters concerning Okinawa development)</p> <p>4133 Employed talent from Okinawa by holding community-based job fairs.</p> <p>4134 We participated "OKIDEN Exhibition of Science Work by Students", "Nago Science Festival", and did science demonstrations. Held 7th SCORE, and 12 teams from 8 high schools competed in science projects with the application proposals for the society.</p> <p>4135 We laid aside the program due to shortage of the manpower, as the priority of the program was not so high as</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>help OIST staff.</p> <p>4136 Continue internship program with University of the Ryukyus and other universities in Okinawa, and provide the chance to work at CPR, OIST and promote the exchange with OIST students.</p> <p>4137 Continue the science classes in remote islands of Okinawa with the help of OIST young researchers and students.</p> <p>4138 Increase the number of externally organized international conferences and workshops at the OIST venue to strengthen the academic networks and the recognition of OIST researchers and students. This will be achieved in collaboration with OPG and the Okinawa Convention and Visitors Bureau, in addition to the support programs for MICE Ambassador program sponsored by JNTO.</p>		<p>other science events.</p> <p>4136 We had intern students, 3 for community relations work and 2 for interpretation, and 3 for media from the University of the Ryukyus. Students experience the work at OIST and had interactions with staff, researchers, and students. They worked in Onna/OIST Children's School of Science.</p> <p>4137 We had a science talk and demonstrations in Iheya, Miyako, and Ishigaki Island with the help of OIST young researchers and students.</p> <p>4138 Provided meeting facilities such as Conference Center to 21 external academic conferences/workshops and 38 other externally organized non-academic events. In total 6,473 people participated in these events. Highly prestigious events such as the Harvard Medical School Introduction to Clinical Research Training Program were continued to be held at OIST for the second year, and 6 Nobel Laureates participated to the 11th HOPE Meeting organized by JSPS.</p>	

FY 2018 Plan		Metrics	Achievements in FY2018						Self-evaluation
				Admin. etc	Technicians	Researchers	Total	Ratio	
			Okinawa	120	15	60	195	23.24%	
			Others	154	56	434	644	76.76%	
			Total	274	71	494	839	100.0%	
Chapter 5 University Campus and Community Development; Safety and Environment Protection									
5.1 Campus Development Goal	OIST Graduate University will continue to develop the campus as planned.								A
5.1 Campus Development Actions:	<p>5101 Continue study and updating of 2014 Master Plan based on phased expansion of OIST.</p> <p>5102 Along with starting Lab 5 basic design, consideration will be made regarding implementation of the future Lab 5 execution design.</p> <p>5103 Plan and complete infrastructure and civil work related to Lab 4, including roads and bridges connecting to</p>		<p>5101 Studies for development of new Master Plan began in FY2018 along with the studies under the taskforce for future development of the campus chaired by VPBFM. Preliminary studies, including an estimate of the number of future populations of OIST and the facilities required for research, administration, and other activities, have been completed in FY2018, and will be further developed in FY2019. Investigations with consultants for design of an updated master plan have started in FY2018 and will continue in FY2019.</p> <p>5102 The consultants for basic design of Lab 5 were selected in FY2018 and concept design for Lab 5 building which will include research space for 25 units and an animal facility, has been completed in FY2018 as planned.</p> <p>5103 All planned construction work for Lab 4 including building construction, infrastructure, and civil work were</p>						

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	the building.		achieved as scheduled despite a major typhoon in the summer of 2018.	
	5104 Continue feasibility study and cost analysis of infrastructure and civil work for the future R&D Zone and on-campus housing.		5104 Feasibility studies for infrastructure and civil work for housing has been completed as planned and the work will begin in FY2019 based on the allocated budget. Feasibility studies and cost analysis for infrastructure for R&D Zone have been completed and design & construction work will begin as soon as the budget for this work is approved by the government.	
	5105 We will develop necessary infrastructure at an early stage to start its utilization of Incubator. In addition, we will consider future development of Incubation Facility considering the result of investigation on FY18 operation status of the Incubation Facility.		5105 The first incubator building, and its infrastructure were completed successfully within budget and on-schedule in FY2018, as planned. Utilization of the building has started through TDIC in FY2018.	
	5106 Operate and maintain the completed campus buildings, facilities.		5106 Additions to the operation and maintenance work in FY2018 include expansion of CDC, a new incubator building, several parking lots and new roads, and several new research or work spaces within existing buildings. Regardless, all existing and new facilities have been operated and maintained without any major incident by the Buildings and Facilities Management Division together with an out-sourced team of professional maintenance company under contract by the Division.	
	5107 Based on the Act for Promoting Proper Tendering		5107 Transparency and disclosure of information in	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	and Contracting for Public Works (Act No. 127 of 2000), continue to promote disclosure of pre- and post- tendering and contract information such as tendering schedule and result, etc., to ensure transparency.		bidding process is highly observed within all divisions and units of OIST. Among several thousand contracts, major bids included several construction and civil work contracts for Lab 4, selection of consultants for Lab 5, and selection of PFI Company for design and construction of on-campus housing. All completed successfully in compliance with Act No. 127 of 2000 and other rules and regulations.	
5.2 University Community and Education/Childcare Services Goal	Continue to facilitate the development of the University community that includes staff, students, and their families, which is an important factor for the success of the University operation. OIST Graduate University will continue to enhance the education and childcare environment available to OIST employees through the Resource Center and the Child Development Center (CDC). To achieve successful recruitment and retention of faculty, OIST needs to pay attention to provide international recognized schooling. The University will also discuss and plan new housing on/off campus for increasing number of staff, students and their families.			A
5.2 University Community and Education/Childcare Services Actions	(Developing the University Community) 5201 Improve data collection process in the Resource Center to identify opportunities to improve service to OIST stakeholders. The new staff will be embedded and trained. They will consider the feasibility of re-starting the OIST Clinic. Collaborate with staff at the Medical Center and Ganjuu to further improve service-related functions for OIST		(Developing the University Community) 5201 (a) Previously the information about the users of the Resource Center were collected in a shared email account. Improvements were made by tracking the type of user (e.g., faculty, student, administration, family member, etc.) and the reason for using the service (e.g.,	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>employees. Develop and implement an effective Children's Development Center staffing model to ensure continuous high-quality child care services. Evaluate CDC budget and spending history to streamline processes and reduce expenses. Identify, plan and deliver more robust after-school STEM programming to increase opportunities for K-12 children of OIST employees. Continue to provide with the service-related function, information, and facilities possessed under OIST to the faculty, employee, student, their family members, and external employees for the short-term accommodation. To achieve the goal, the HR service-related function will be reinforced through child-care services, family support, food services, health/medical services, and living needs."</p>		<p>converting a driver's license, getting a cell phone SIM card, etc.). The new staff were embedded and trained to collect this information.</p> <p>(b) Several meetings were held between UCS and the Manager of the Health Center and the new Industrial Physician. A decision was reached, in consultation with the Provost, to reopen the clinic with limited hours. The clinic reopened at the end of the FY2018. Early in FY2019 the medical clinic will come under the oversight of University Community Services. The Manager of the Health Center and the Industrial Physician participated the Task Force 5 of the strategic planning exercise. Current and future OIST health needs were identified. The Ganjuu Wellbeing Service staff meet regularly with other UCS sections to discuss best strategies to provide for the emotional wellbeing of the OIST community. Staff members participated in Task Force 5 (strategic planning) to develop plans to maintain and extend current services.</p> <p>(c) When the CDC was established in 2013, there were 6 teaching staff, 1 administrator and 1 director. This was an appropriate number of staff for the Director to manage. By 2017, there were over 30 staff for the Director to manage and the work load became unreasonable for 1 manager as the structure was flat. The CDC requested and were allocated 2 new positions to create 1 Assistant Director to help with the preschool and a new Program Director to manage the after-school program. The CDC has worked with UCS in the hiring of new teachers to accommodate growth in CDC</p>	

FY 2018 Plan	Metrics	Achievements in FY2018	Self-evaluation
<p>5202 As the university grows the number of clubs and activities grow. Stronger oversight is needed to ensure that there are no contraventions of university rules and regulations. Resource Center oversees club activities.</p>		<p>numbers. The CDC has also worked with the Division to hire dedicated teachers for the School aged program. Both teachers will begin working at OIST early in FY2019. This will improve the ability of the School Aged Program to provide quality after school and holiday programs for the children of OIST staff and students.</p> <p>(d) With the CDC moving to the Division of University Community Service, there is more specialist support (Senior Manager and Specialist with business background) to assist in evaluating the CDC budget and spending history for the CDC. The UCS Business Analyst joined UCS part way through FY2018, thus analysis of CDC finances is ongoing. It has taken some time to be granted access to all the necessary information and documentation through the Finance section.</p> <p>(e) A new School Age Program Director and a trained, dedicated school age program teacher have been hired to begin implementing more robust programming in the after school and Holiday programs.</p> <p>(f) These functions were transferred from HR to UCS in June/July 2018. UCS has maintained and expanded service delivery to all OIST.</p> <p>5202 Club activity oversight has been successfully transitioned to a newly hired Director of Recreational Services. There is stronger oversight of clubs including development of rules and procedures for club activities, use of OIST space by clubs. This was done in consultation with</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>5203 The Registration Desk will continue to provide coming in-boarding services for visiting researchers and invited guests by registering and integrating them into the database. This function is now run by the Resource Center, which brings additional administrative and web-based strength.</p> <p>5204 Along with the expansion of OIST, start civil and infrastructure works for the additional on-campus housing at the existing PPP residential area, and work on development of additional on-campus housing through PPP scheme at that area. Start planning additional on-campus housing project with new PFI scheme, including design of civil and infrastructure for the project. Continue discussions with the business operators of the old military site at Onna-son for development of off-campus housing for OIST.</p>		<p>the OIST legal Counsel. Club registration is required and an approval process has been put in place to review proposed club. This oversight helps to ensure that there are no contraventions of university rules and regulations. All relevant documentation is available on the Recreation Services Web page.</p> <p>5203 The Registration Desk function is still being successfully managed under the Resource Center. Applications for visiting researchers are accepted and processed smoothly. The Resource Center also processes ID cards for guests upon request from Research Unit Administrators (RUA).</p> <p>5204 The contract for PPP housing was concluded in FY2018 design work for that has started. Design of civil work is completed, and earthwork has already started in the new PPP housing area. The process of public announcement and selection of a company for PFI housing was completed in FY2018 and a contract with the PFI company has been signed. Design of earthwork for PFI housing area has been completed and the construction work will begin in FY2019. The plans for development of Old Military Site at Onna-son has been changed by the Village Office and the Village Office is currently studying alternative plans. OIST is one of the participants of the study team.</p>	
5.2 University	<p>(Education and Childcare Services for OIST Family)</p> <p>5205 Continue the efforts to improve the educational</p>		<p>(Education and Childcare Services for OIST Family)</p> <p>5205 A full-time qualified native English speaking</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
Community and Education/Childcare Services Actions	<p>environment for children of employees and students by increasing the opportunities of taking classes in English, in collaboration with OPG, Onna-son and other surrounding communities.</p>		<p>teacher (in the country of training) was hired to support the children of OIST families attending Onna Elementary School. It is intended that this teacher will provide a language arts curriculum for the children. The teacher holds regular meetings to discuss progress with the OIST parents with children in Onna Elementary School. Also, regular meetings are held with Onna Elementary School Principal to maintain a positive relationship.</p>	
	<p>5206 Continue to provide high quality and fully bilingual Preschool and Afterschool/Holiday program for OIST families with appropriate user fees through the CDC and Afterschool classroom. The CDC Governing Board will continue to meet quarterly with separate meetings of the CDC Finance Committee, which will keep a strict eye on the budget of the school. Enrollment in these programs is anticipated to continue its steady growth. Complete the construction project that is expanding the size of the CDC and incorporating the Afterschool program into the same physical complex.</p>		<p>5206 With the completion of the construction of second CDC building, the CDC and School Age Programs (Afterschool and Holiday Programs) are now co-located. The CDC BOG met twice last year to discuss oversight issues. Program enrollment will continue and we will continue to assess the appropriate user fees for all programs. With the hiring of a Business Analyst in UCS, much of the routine oversight of the CDC budget has been transferred to the UCS Divisional office.</p>	
	<p>5207 Offers a very valid educational opportunity to OIST staff members' children such as the international program at the Onna Elementary School and conduct a study about international education environment to them.</p>		<p>5207 As noted above a full time teacher was hired to support the children of OIST families attending Onna Elementary School. The teacher holds regular meetings to discuss progress with the OIST parents with children in Onna Elementary School. As part of efforts to identify the educational needs of OIST families a survey was undertaken in late FY2018. The results of this survey are currently being</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>5208 In FY2018 OIST will maintain the number of language courses given to staff and family members. There is a very strong demand for language training and the ability to communicate in English and Japanese is a foundation of the success of the University.</p>		<p>analyzed.</p> <p>5208 In FY2018, OIST maintained the same number of language courses as in previous fiscal years. There were 42 Japanese courses and 30 English courses.</p> <p>In FY2018 there were 549 students taking Japanese courses and 397 students taking English courses.</p> <p>In addition, English teachers collaborated with the graduate school, CPR, and the Office of Faculty affairs to produce seminars and trainings for OIST employees. English teachers also provided a weekly English club and weekly drop-in English support for OIST employees.</p> <p>The Japanese teachers gave a seminar on survival Japanese and worked with OIST's president to develop his conversational language skills in addition to offering cultural events such as Rakugo (traditional Japanese comedy) and Mame-maki (bean throwing).</p>	
5.2 University Community and Education/Childcare Services	<p>(Student Support)</p> <p>5209 Enhance student support services and general welfare activities to promote a positive social and psychological environment for students. (See 1.1)</p>		<p>(Student Support)</p> <p>5209 Student Support Services:</p> <ul style="list-style-type: none"> -Continued to run Peer Mentor Program to provide living supports by students from other universities in Okinawa. <p>General Welfare Activities:</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
Actions	5210 Continue efforts in improvement of opportunities for sport, recreation, and social activities for the students and other members of OIST community.		<p>-Organized cultural excursions, welfare seminars, and exchange events for students to interact with other students in Okinawa. Also administer multiple student organized activities.</p> <p>5210 A new hall for social activities has been completed in Seaside Building in FY2018. Outdoor sport grounds have been included in the design of new on-campus housing. Sports and recreation facilities are among important items included in the master plan studies for future development of OIST.</p>	
5.3 Safety and Environment Protection Goal (1)	OIST Graduate University will develop an all-campus-wide Business Continuity Plan and take necessary measures to control risks, prevent disasters and protect the safety of all members of OIST and visitors.			A
5.3 Safety and Environment Protection Actions (1)	<p>5301 Having the newly hired Emergency response coordinator as a core member, OIST will develop an all-campus-wide business continuity plan and take necessary preparation for risks.</p> <p>5302 Continue safety training for OIST employees and students.</p> <p>5303 Enhance the sustainability of the campus under natural disasters in collaboration with Onna-son, and offer the campus to local residents for evacuation under disasters.</p>		<p>5301 Seven major BCPs such as Earthquake/tsunamis, Pandemics, Fire, Super Typhoon were established.</p> <p>5302 Education and trainings on Fire/earthquake/tsunamis were conducted to faculty, staff and students.</p> <p>5303 In cooperation with the emergency response coordinator and other divisions or sections, safety measures and preparedness for natural disasters have been enhanced and plans for improvement of emergency and business</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
			sustainability have been studied in more details. Continued collaboration with the community, including the Village Office of Onna-son and the Ward Office of Tancha for cooperation in the event of any disaster by the leadership of Community Relations Section.	
5.3 Safety and Environment Protection Goal (2)	OIST Graduate University will conduct its business in an environmentally friendly manner.			A
5.3 Safety and Environment Protection Actions (2)	<p>5304 Continue promoting use of recycled products.</p> <p>5305 Continue to monitor and optimize operations to minimize volume of greenhouse gas emission and energy consumption.</p> <p>5306 Minimize environmental impact on surrounding waters through providing measures such as enhancing the proper use and management of the water recycling system. In addition, prevent impact to local aquifers.</p>		<p>5304 Continued cooperation with other divisions and units in promoting use of recyclable products.</p> <p>5305 Energy Management Committee organized by the Buildings and Facilities Management Division was successful in a considerable reduction of use of energy by turning AC and lighting off in many areas during after-hour times and weekends. ESP (Energy Supply Provider) system installed for Lab 4 and future facilities, which will generate heat source from gas instead of oil, will decrease the level of CO₂, and will have considerable benefits for OIST, both economically and environmentally.</p> <p>5306/5307 Despite heavy rains and occurrence of typhoons in FY2018, was able to control flow of red soil to the sea through construction of water retention ponds and constant inspection of construction sites. Maintained and repaired naturally damaged terrains in the Main Campus and</p>	

FY 2018 Plan		Metrics	Achievements in FY2018	Self-evaluation
	<p>5307 For various construction works associated with facility development, provide sufficient measures such as installation of turbid water treatment plants to prevent red soil run off.</p> <p>5308 Manage campus facilities and landscaping to preserve natural balance and protect indigenous species.</p>		<p>the Seaside Campus except for some parts. Wastewater treatment plants of OIST produce the highest grade of treated water, which are inspected and tested constantly for prevention of any flaws.</p> <p>5308 OIST has been a forefront in protection of the environment by commissioning highly qualified environmental assessment consultants on annual basis, who regularly monitor and inspect the campus and recommend steps for prevention of any impact by new construction to the environment. Construction of new buildings and roads were carefully planned to have minimum impact on environment. As a result, all indigenous species continue to thrive in a healthy ecosystem. Energy Management Committee organized by the Buildings and Facilities Management Division was successful in a considerable reduction of use of energy by turning AC and lighting off in many areas during after-hour times and weekends. ESP (Energy Supply Provider) system installed for Lab 4 and future facilities, which will generate heat source from gas instead of oil, will decrease the level of CO₂, and will have considerable benefits for OIST, both economically and environmentally.</p>	

平成30年度 業務実績報告 添付資料リスト

No.	File No.	資料名
1	1. 1-1	学生に関する情報
2	1. 2-1	平成30年度 OIST論文・発表数
3	1. 2-2	平成30年度 研究に関する受賞実績
4	1. 2-3	平成30年度 アウトリーチ活動実績
5	1. 2-4	平成30年度 OIST 研究施設の外部利用者
6	1. 4-1	学術交流協定一覧
7	1. 4-2	平成30年度 OIST主催によるワークショップ・ミニシンポジウム
8	2. 4-1	平成30年度 職位毎・国籍別職員数
9	2. 4-2	平成30年度 職員の給与水準
10	2. 4-3	平成30年度 研修の受講職員数
11	3. 1	外部資金・寄附金獲得状況
12	4. 1	特許状況
13	4. 2	平成30年度 受託研究等(産学連携)及びイベント

List of Attachment Documents to the FY2018 Performance Report

No.	File No.	Document Name
1	1. 1-1	Students Information
2	1. 2-1	FY2018 OIST Publications and Presentations
3	1. 2-2	FY2018 Research Honors
4	1. 2-3	FY2018 Outreach by Faculty and Researchers
5	1. 2-4	FY2018 The number of use of our research facilities by external organizations
6	1. 4-1	Academic Exchange Agreements List
7	1. 4-2	FY2018 List of OIST Funded Workshops/Mini-Symposia
8	2. 4-1	FY2018 Number of Employees
9	2. 4-2	FY2018 Salary Level of Employee
10	2. 4-3	FY2018 Number of Employees Taking Training Programs
11	3. 1	FY2018 External Grants and Donations Table
12	4. 1	Patent Status
13	4. 2	FY2018 Industry-related Collaboration and Innovation Seminars and Events

Attachment 1. 1-1 Students Information

	No. of Applicants	No. of candidates attended admissions workshop	No. of offers made to applicants	No. of Students Admitted	No. of Males	No. of Females	Distribution of ages	Nationality	Major/Scientific Field	BS	MS	University
Class of 2018	502	114	60	34	20	14	22 (2) 23 (8) 24 (8) 25 (4) 26 (3) 27 (6) 28 (2) 29 (1) Average (24.9)	Argentina (1) Brazil (1) China (6) Colombia (1) Croatia (1) Egypt (1) India (7) Indonesia (1) Italy (1) Japan (1) Kazakhstan (2) Philippines (1) Russian Federation (3) Spain (1) Taiwan (2) United Kingdom (3) Viet Nam (1)	Biochemistry (1) Bioinformatics (1) Chemistry (4) Education and Rehabilitation Sciences (1) Environmental, Ecological, Marine (3) Mathematical and Computational Sciences (3) Molecular, Cell Developmental Biology (7) Neuroscience (5) Physics, Material Sciences (9)	9	25	Bandung Institute of Technology Beijing Normal University Cambridge University Doshisha University Edmond and Lily Safra International Institute of Neurosciences Ain Shams University Imperial College London Indian Institute of Science Education and Research (3) National Center for Biological Sciences, Tata Inst (2) National Institute of Technology Calicut National Taiwan Normal University National Technological University National Tsing Hua University Nazarbayev University (2) Novosibirsk State University Shanghai University Southern University of Science and Technology (2) Sun Yat-sen University Università di Bologna Universiteit van Amsterdam - Vrije Universiteit University of Barcelona University of Bristol University of Cape Town University of Edinburgh University of Science, Vietnam National University University of the Basque Country University of the Philippines Diliman University of Tsukuba University of Zagreb

平成30年度 研究成果（ユニット別）
FY2018 Scientific Productivity Summarized by Unit

	Books	Book Chapters & Journal Articles	Presentations	Dissertations, Online Databases, etc.	Unit Total
Administration	0	3	0	0	3
Arbuthnott	0	5	4	0	9
Bandi	0	4	6	0	10
Bourguignon	0	7	14	0	21
Busch	0	12	46	0	58
Chakraborty	0	3	23	0	26
Dani	0	7	21	1	29
De Schutter	0	5	6	0	11
Doya	0	5	42	1	48
Economo	0	23	25	0	48
Faculty Affairs	0	2	0	0	2
Feng (New)	0	1	7	0	8
Fried	0	7	12	0	19
Fukunaga	0	2	2	0	4
Gioia	0	1	16	1	18
Goryanin	0	1	15	0	16
Graduate School	0	1	0	0	1
Hikami	0	8	21	0	29
Ishikawa	0	1	7	0	8
Khusnutdinova	0	5	3	0	8
Kitano	0	2	12	0	14
Kono	0	1	12	0	13
Konstantinov	0	7	8	0	15
Kuhn	0	3	23	0	26
Kusumi	0	3	16	0	19
Laurino	0	3	11	0	14
Luscombe	0	9	1	0	10
Maruyama	0	2	9	0	11
Masai	0	5	15	0	20
Mikheyev	0	5	15	0	20
Miller	0	6	15	0	21
Mitarai	0	13	18	0	31
Narita (New)	0	3	0	0	3

	Books	Book Chapters & Journal Articles	Presentations	Dissertations, Online Databases, etc.	Unit Total
Neiman	0	4	9	0	13
Nic Chormaic	0	12	49	0	61
Okada	0	3	7	0	10
Pauly	0	6	12	0	18
Pigolotti	0	4	21	0	25
Qi	0	24	3	0	27
Research Support	0	18	8	0	26
Rokhsar	0	4	6	0	10
Satoh	0	46	28	0	74
Saze	0	5	8	0	13
Shannon	0	8	31	0	39
Shen	0	21	45	0	66
Shintake	0	5	14	0	19
Skoglund	0	7	5	0	12
Sowwan	0	4	8	0	12
Stephens	0	3	13	0	16
STG	0	4	10	0	14
Sugawara	0	12	0	0	12
Takahashi	0	0	13	0	13
Tanaka	0	6	9	0	15
Tani	0	7	19	0	26
Toriumi (New)	0	0	2	0	2
Tripp	0	1	3	0	4
Tsvietkova	0	3	27	0	30
Uusisaari	0	3	14	0	17
Van Vactor	0	0	4	0	4
Watanabe	0	4	13	0	17
Wickens	0	9	7	0	16
Wolf	0	6	5	0	11
Yamamoto	0	8	30	0	38
Yanagida	0	8	17	0	25
Yazaki-Sugiyama	0	3	6	0	9
Yokobayashi	0	5	8	0	13
Zhang	0	1	12	0	13

	Books	Book Chapters & Journal Articles	Presentations	Dissertations, Online Databases, etc.	Unit Total
Totals	0	416	891	3	1310

Remarks: The numbers of publications in the unit data are higher in those in the university data because of collaborative publications that are credited to each participating unit.

OISTの論文数・発表数（平成24～30年度）

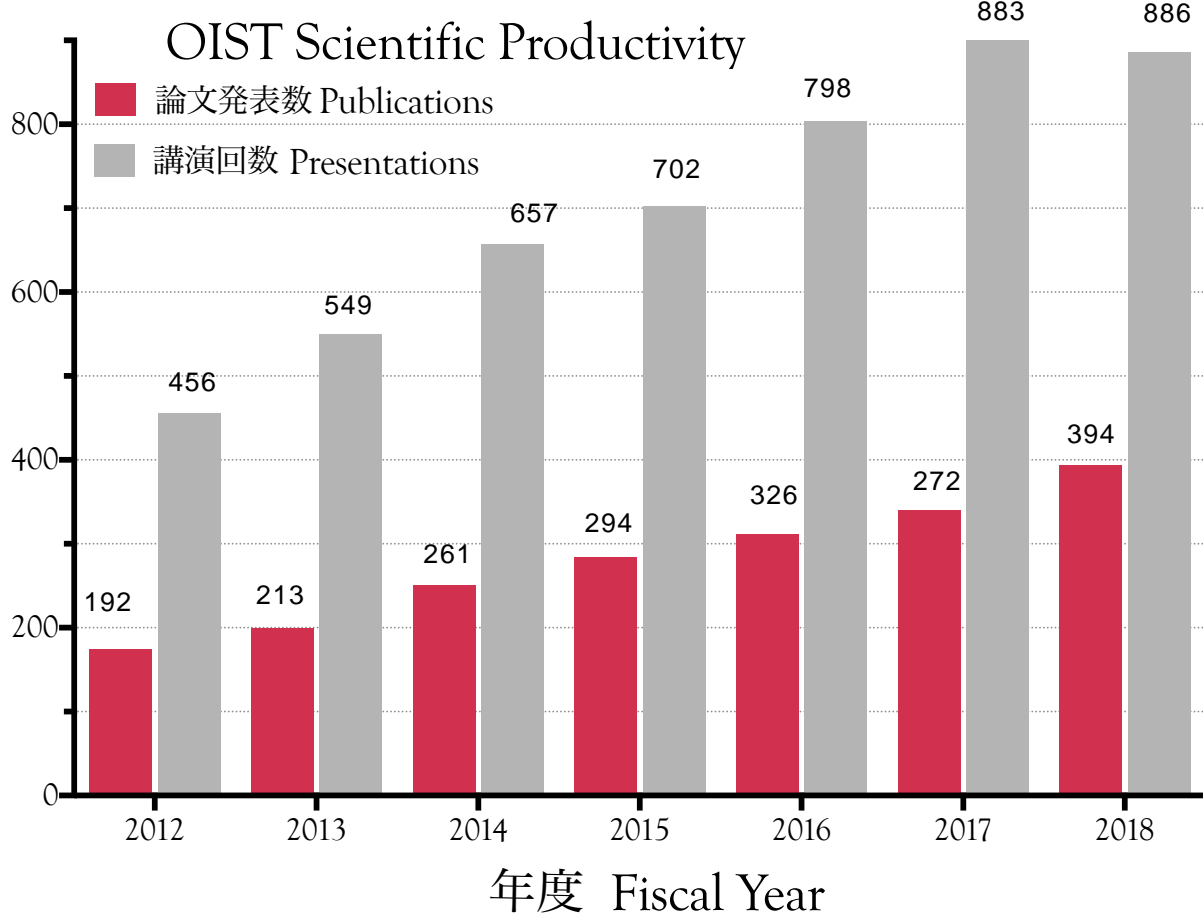
OIST Scientific Productivity

Fiscal Year	書籍の執筆 及び編集	書籍の章及び 学術論文の執筆	学会でのプレゼン	セミナー	博士論文	発表数	論文数
	Books and Edited Books	Book Chapters and Journal Articles	Conference Presentations	Seminars	Dissertations	Presentations	Publications
FY2012	0	192	309	147	0	456	192
FY2013	2	211	430	119	0	549	213
FY2014	0	261	491	166	0	657	261
FY2015	2	292	535	167	1	702	294
FY2016	2	324	616	182	4	798	326
FY2017	2	270	692	191	7	883	272
FY2018	1	393	703	183	3	886	394

OIST Scientific Productivity

OISTの論文発表数・講演回数

論文発表数 Publications
講演回数 Presentations



OIST FY2018 Publication List

OIST論文数 - 著者別（平成30年度）

1. Abudukeyoumu, N., Hernandez-Flores, T., Garcia-Munoz, M., Arbuthnott, G.W., 2019. Cholinergic modulation of striatal microcircuits. *European Journal of Neuroscience* 49, 604-622.
2. Ackerman, E.E., Kawakami, E., Katoh, M., Watanabe, T., Watanabe, S., Tomita, Y., Lopes, T.J., Matsuoka, Y., Kitano, H., Shoemaker, J.E., Kawaoka, Y., 2018. Network-guided discovery of influenza virus replication host factors. *MBio* 9.
3. Agavekar, G., Agashe, D., Economo, E.P., 2018. Dimensions of ant diversity on a small tropical island. *Insect Conserv Diver*, 1-11.
4. Aharonian, F., Akamatsu, H., Akimoto, F., Allen, S.W., Angelini, L., Audard, M., Awaki, H., Axelsson, M., Bamba, A., Bautz, M.W., Blandford, R., Brenneman, L.W., Brown, G., V, Bulbul, E., Cackett, E.M., Chernyakova, M., Chiao, M.P., Coppi, P.S., Costantini, E., de Plaa, J., de Vries, C.P., den Herder, J.-W., Done, C., Dotani, T., Ebisawa, K., Eckart, M.E., Enoto, T., Ezoe, Y., Fabian, A.C., Ferrigno, C., Foster, A.R., Fujimoto, R., Fukazawa, Y., Furuzawa, A., Galeazzi, M., Gallo, L.C., Gandhi, P., Giustini, M., Goldwurm, A., Gu, L., Guainazzi, M., Haba, Y., Hagino, K., Hamaguchi, K., Harrus, I.M., Hatsukade, I., Hayashi, K., Hayashi, T., Hayashida, K., Hiraga, J.S., Hornschemeier, A., Hoshino, A., Hughes, J.P., Ichinohe, Y., Iizuka, R., Inoue, H., Inoue, Y., Ishida, M., Ishikawa, K., Ishisaki, Y., Iwai, M., Kaastra, J., Kallman, T., Kamae, T., Kataoka, J., Katsuda, S., Kawai, N., Kelley, R.L., Kilbourne, C.A., Kitaguchi, T., Kitamoto, S., Kitayama, T., Kohmura, T., Kokubun, M., Koyama, K., Koyama, S., Kretschmar, P., Krimm, H.A., Kubota, A., Kunieda, H., Laurent, P., Lee, S.-H., Leutenegger, M.A., Limousin, O., Loewenstein, M., Long, K.S., Lumb, D., Madejski, G., Maeda, Y., Maier, D., Makishima, K., Markevitch, M., Matsumoto, H., Matsushita, K., McCammon, D., McNamara, B.R., Mehdipour, M., Miller, E.D., Miller, J.M., Mineshige, S., Mitsuda, K., Mitsuishi, I., Miyazawa, T., Mizuno, T., Mori, H., Mori, K., Mukai, K., Murakami, H., Mushotzky, R.F., Nakagawa, T., Nakajima, H., Nakamori, T., Nakashima, S., Nakazawa, K., Nobukawa, K.K., Nobukawa, M., Noda, H., Odaka, H., Ohashi, T., Ohno, M., Okajima, T., Ota, N., Ozaki, M., Paerels, F., Paltani, S., Petre, R., Pinto, C., Porter, F.S., Pottschmidt, K., Reynolds, C.S., Safi-Harb, S., Saito, S., Sakai, K., Sasaki, T., Sato, G., Sato, K., Sato, R., Sawada, M., Schartel, N., Serlemitsos, P.J., Seta, H., Shidatsu, M., Simionescu, A., Smith, R.K., Soong, Y., Stawarz, L., Sugawara, Y., Sugita, S., Szymkowiak, A., Tajima, H., Takahashi, H., Takahashi, T., Takeda, S., Takei, Y., Tamagawa, T., Tamura, T., Tanaka, T., Tanaka, Y., Tanaka, Y.T., Tashiro, M.S., Tawara, Y., Terada, Y., Terashima, Y., Tombesi, F., Tomida, H., Tsuboi, Y., Tsujimoto, M., Tsunemi, H., Tsuru, T.G., Uchida, H., Uchiyama, H., Uchiyama, Y., Ueda, S., Uno, S., Ueda, Y., Urry,

C.M., Ursino, E., Watanabe, S., Werner, N., Wilkins, D.R., Williams, B.J., Yamada, S., Yamaguchi, H., Yamaoka, K., Yamasaki, N.Y., Yamauchi, M., Yamauchi, S., Yaqoob, T., Yatsu, Y., Yonetoku, D., Zhuravleva, I., Zoghbi, A., Sato, T., Nakaniwa, N., Murakami, H., Guest, B., 2018. Hitomi X-ray observation of the pulsar wind nebula G21.5-0.9. Publications of the Astronomical Society of Japan 70, 16.

5. Aharonian, F., Akamatsu, H., Akimoto, F., Allen, S.W., Angelini, L., Audard, M., Awaki, H., Axelsson, M., Bamba, A., Bautz, M.W., Blandford, R., Brenneman, L.W., Brown, G.V., Bulbul, E., Cackett, E.M., Chernyakova, M., Chiao, M.P., Coppi, P.S., Costantini, E., de Plaa, J., de Vries, C.P., den Herder, J.W., Done, C., Dotani, T., Ebisawa, K., Eckart, M.E., Enoto, T., Ezoe, Y., Fabian, A.C., Ferrigno, C., Foster, A.R., Fujimoto, R., Fukazawa, Y., Furuzawa, A., Galeazzi, M., Gallo, L.C., Gandhi, P., Giustini, M., Goldwurm, A., Gu, L.Y., Guainazzi, M., Haba, Y., Hagino, K., Hamaguchi, K., Harrus, I.M., Hatsukade, I., Hayashi, K., Hayashi, T., Hayashida, K., Hiraga, J.S., Hornschemeier, A., Hoshino, A., Hughes, J.P., Ichinohe, Y., Iizuka, R., Inoue, H., Inoue, Y., Ishida, M., Ishikawa, K., Ishisaki, Y., Iwai, M., Kaastra, J., Kallman, T., Kamae, T., Kataoka, J., Katsuda, S., Kawai, N., Kelley, R.L., Kilbourne, C.A., Kitaguchi, T., Kitamoto, S., Kitayama, T., Kohmura, T., Kokubun, M., Koyama, K., Koyama, S., Kretschmar, P., Krimm, H.A., Kubota, A., Kunieda, H., Laurent, P., Lee, S.H., Leutenegger, M.A., Limousin, O., Loewenstein, M., Long, K.S., Lumb, D., Madejski, G., Maeda, Y., Maier, D., Makishima, K., Markevitch, M., Matsumoto, H., Matsushita, K., McCammon, D., McNamara, B.R., Mehdipour, M., Miller, E.D., Miller, J.M., Mineshige, S., Mitsuda, K., Mitsuishi, I., Miyazawa, T., Mizuno, T., Mori, H., Mori, K., Mukai, K., Murakami, H., Mushotzky, R.F., Nakagawa, T., Nakajima, H., Nakamori, T., Nakashima, S., Nakazawa, K., Nobukawa, K.K., Nobukawa, M., Noda, H., Odaka, H., Ohashi, T., Ohno, M., Okajima, T., Ota, N., Ozaki, M., Paerels, F., Paltani, S., Petre, R., Pinto, C., Porter, F.S., Pottschmidt, K., Reynolds, C.S., Safi-Harb, S., Saito, S., Sakai, K., Sasaki, T., Sato, G., Sato, K., Sato, R., Sawada, M., Schartel, N., Serlemitsos, P.J., Seta, H., Shidatsu, M., Simionescu, A., Smith, R.K., Soong, Y., Stawarz, L., Sugawara, Y., Sugita, S., Szymkowiak, A., Tajima, H., Takahashi, H., Takahashi, T., Takeda, S., Takei, Y., Tamagawa, T., Tamura, T., Tanaka, T., Tanaka, Y., Tanaka, Y.T., Tashiro, M.S., Tawara, Y., Terada, Y., Terashima, Y., Tombesi, F., Tomida, H., Tsuboi, Y., Tsujimoto, M., Tsunemi, H., Tsuru, T.G., Uchida, H., Uchiyama, H., Uchiyama, Y., Ueda, S., Ueda, Y., Uno, S., Urry, C.M., Ursino, E., Watanabe, S., Werner, N., Wilkins, D.R., Williams, B.J., Yamada, S., Yamaguchi, H., Yamaoka, K., Yamasaki, N.Y., Yamauchi, M., Yamauchi, S., Yaqoob, T., Yatsu, Y., Yonetoku, D., Zhuravleva, I., Zoghbi, A., Uchida, Y., Hitomi, C., 2018. Detection of polarized gamma-ray emission from the Crab nebula with the Hitomi Soft Gamma-ray Detector. Publications of the Astronomical Society of Japan 70, 19.

6. Aird, S.D., Silva Jr., N.J., Qiu, L., Villar-Briones, A., Saddi, V.A., Campos Telles, M.P.d., Grau, M.L., Mikheyev, A.S., 2018. Addendum: Aird, S.D. et al. Coralsnake Venomics: Analyses of Venom Gland Transcriptomes and Proteomes of Six Brazilian Taxa. *Toxins* 10.
7. Akella, V.S., Bandi, M.M., Hentschel, H.G.E., Procaccia, I., Roy, S., 2018. Force distributions in frictional granular media. *Physical Review E* 98.
8. Alberola-Borras, J.-A., Vidal, R., Juarez-Perez, E.J., Mas-Marza, E., Guerrero, A., Mora-Sero, I., 2018. Relative impacts of methylammonium lead triiodide perovskite solar cells based on life cycle assessment. *Solar Energy Materials and Solar Cells* 179, 169-177.
9. Aoki, S., Coulon, P., Ruigrok, T.J.H., 2019. Multizonal cerebellar influence over sensorimotor areas of the rat cerebral cortex. *Cerebral Cortex* 29, 598-614.
10. Aoki, S., Liu, A.W., Akamine, Y., Zucca, A., Zucca, S., Wickens, J.R., 2018. Cholinergic interneurons in the rat striatum modulate substitution of habits. *European Journal of Neuroscience* 47, 1194-1205.
11. Apps, R., Hawkes, R., Aoki, S., Bengtsson, F., Brown, A.M., Chen, G., Ebner, T.J., Isope, P., Jorntell, H., Lackey, E.P., Lawrenson, C., Lumb, B., Schonewille, M., Sillitoe, R.V., Spaeth, L., Sugihara, I., Valera, A., Voogd, J., Wylie, D.R., Ruigrok, T.J.H., 2018. Correction to: Cerebellar Modules and Their Role as Operational Cerebellar Processing Units: A Consensus paper. *Cerebellum* 17, 683-684.
12. Apps, R., Hawkes, R., Aoki, S., Bengtsson, F., Brown, A.M., Chen, G., Ebner, T.J., Isope, P., Jorntell, H., Lackey, E.P., Lawrenson, C., Lumb, B., Schonewille, M., Sillitoe, R.V., Spaeth, L., Sugihara, I., Valera, A., Voogd, J., Wylie, D.R., Ruigrok, T.J.H., 2018. Cerebellar Modules and Their Role as Operational Cerebellar Processing Units. *Cerebellum* 17, 654-682.
13. Arbuthnott, G.W., Garcia-Munoz, M., 2018. A cortical substrate for Parkinsonism: A Personal journey. *International Journal of Clinical Research & Trials* 3.
14. Arimoto, A., Nishitsuji, K., Higa, Y., Arakaki, N., Hisata, K., Shinzato, C., Satoh, N., Shoguchi, E., 2019. A siphonous macroalgal genome suggests convergent functions of homeobox genes in algae and land plants. *DNA Research*.
15. Arimoto, A., Tagawa, K., 2018. Regeneration in the enteropneust hemichordate, *Ptychodera flava*, and its evolutionary implications. *Development, Growth and Differentiation* 60, 400-408.
16. Ashworth, W., Stoney, P.N., Yamamoto, T., 2019. States of Decay: The Systems Biology of mRNA Stability. *Current Opinion in Systems Biology*, 1-16.
17. Attig, J., Agostini, F., Gooding, C., Chakrabarti, A.M., Singh, A., Haberman, N., Zagalak, J.A., Emmett, W., Smith, C.W.J., Luscombe, N.M., Ule, J., 2018. Heteromeric RNP Assembly at LINEs Controls Lineage-Specific RNA Processing. *Cell* 174, 1067-+.

18. Augustinaite, S., Heggelund, P., 2018. Short-term synaptic depression in the feedforward inhibitory circuit in the dorsal lateral geniculate nucleus. *Neuroscience* 384, 76-86.
19. Ball, J.R., Yamashiro, Y., Sumiya, H., Onoda, S., Ohshima, T., Isoya, J., Konstantinov, D., Kubo, Y., 2018. Loop-gap microwave resonator for hybrid quantum systems (vol 112, 204102, 2018). *Applied Physics Letters* 113, 1.
20. Bandi, M., 2018. Tension grips the flow. *Journal of Fluid Mechanics* 846, 1-4.
21. Bandi, M.M., Hentschel, H.G.E., Procaccia, I., Roy, S., Zylberg, J., 2018. Training, memory and universal scaling in amorphous frictional granular matter. *Epl* 122.
22. Barato, A.C., Roldán, É., Martínez, I.A., Pigolotti, S., 2018. Arcsine Laws in Stochastic Thermodynamics. *Physical Review Letters* 121.
23. Barlow, J., França, F., Gardner, T.A., Hicks, C.C., Lennox, G.D., Berenguer, E., Castello, L., Economo, E.P., Ferreira, J., Guénard, B., Gontijo Leal, C., Isaac, V., Lees, A.C., Parr, C.L., Wilson, S.K., Young, P.J., Graham, N.A.J., 2018. The future of hyperdiverse tropical ecosystems. *Nature* 559, 517–526.
24. Barros, J.M., Schultz, M.P., Flack, K.A., 2018. Measurements of skin-friction of systematically generated surface roughness. *International Journal of Heat and Fluid Flow* 72, 1 to 7.
25. Baughman, K.W., 2018. The Crown-of-Thorns Starfish: From Coral Reef Plague to Model System. *Results and Problems in Cell Differentiation* 65, 547-568.
26. Beedessee, G., Hisata, K., Roy, M.C., Van Dolah, F.M., Satoh, N., Shoguchi, E., 2019. Diversified secondary metabolite biosynthesis gene repertoire revealed in symbiotic dinoflagellates. *Scientific Reports* 9.
27. Belcaid, M., Casaburi, G., McAnulty, S.J., Schmidbaur, H., Suria, A.M., Moriano-Gutierrez, S., Pankey, M.S., Oakley, T.H., Kremer, N., Koch, E.J., Collins, A.J., Nguyen, H., Lek, S., Goncharenko-Foster, I., Minx, P., Sodergren, E., Weinstock, G., Rokhsar, D.S., McFall-Ngai, M., Simakov, O., Foster, J.S., Nyholm, S.V., 2019. Symbiotic organs shaped by distinct modes of genome evolution in cephalopods. *Proceedings of the National Academy of Sciences of the United States of America* 116, 3030-3035.
28. Benseny C., A., Reshodko, I., Busch, T., 2018. Entanglement in Spatial Adiabatic Processes for Interacting Atoms. *Few-Body Systems* 59.
29. Benton, O., Jaubert, L.D.C., Singh, R.R.P., Oitmaa, J., Shannon, N., 2018. Quantum spin ice with frustrated transverse exchange: from a pi-flux phase to a nematic quantum spin liquid. *Physical Review Letters* 121, 067201.

30. Bhalla, N., Chiang, H.-J., Shen, A.Q., 2018. Cell biology at the interface of nanobiosensors and microfluidics., *Microfluidics in Cell Biology Part C--Microfluidics on a Molecular Scale*, pp. 203-227.
31. Bhalla, N., Estrela, P., 2018. Exploiting the signatures of nanoplasmon-exciton coupling on proton sensitive insulator-semiconductor devices for drug discovery applications. *Nanoscale* 10, 13320-13328.
32. Bhalla, N., Jamshaid, A., Leung, M.H.M., Ishizu, N., Shen, A.Q., 2019. Electrical contact of metals at nanoscale overcomes the oxidative susceptibility of silver-based nanobiosensors. *ACS Applied Nano Materials*, 1-12.
33. Bohra, M., Chowdhury, D.R., Bobo, J.F., Singh, V., 2019. Anomalous electric transport across Verwey transition in nanocrystalline Fe₃O₄ thin films. *Journal of Applied Physics* 125.
34. Bourguignon, T., Dahlsjö, C.A.L., Salim, K., Evans, T.A., 2018. Termite diversity and species composition in heath forests, mixed dipterocarp forests, and pristine and selectively logged tropical peat swamp forests in Brunei. *Insectes Sociaux* 65, 439-444.
35. Bozek, K., Hebert, L., Mikheyev, A.S., Stephens, G.J., 2018. Towards dense object tracking in a 2D honeybee hive. *Computer Vision and Pattern Recognition*.
36. Brezin, E., Hikami, S., 2018. Random supermatrices with an external source. *Journal of High Energy Physics* 19, 138.
37. Bricogne, C., Fine, M., Pereira, P.M., Sung, J.L., Tijani, M., Wang, Y., Henriques, R., Collins, M.K., Hilgemann, D., 2019. TMEM16F activation by Ca²⁺ triggers plasma membrane expansion and directs PD-1 trafficking. *Scientific Reports* 9.
38. Brisbin, M.M., 2019. Differential gene expression supports a resource-intensive, defensive role for colony production in the bloom-forming haptophyte, *Phaeocystis globosa*. *Journal of Eukaryotic Microbiology*.
39. Brisbin, M.M., Mesrop, L.Y., Grossmann, M.M., Mitarai, S., 2018. Intra-host Symbiont Diversity and Extended Symbiont Maintenance in Photosymbiotic *Acantharea* (Clade F). *Frontiers in Marine Science*, 14.
40. Burshtein, N., Chan, S.T., Toda-Peters, K., Shen, A.Q., Haward, S.J., 2018. Microfluidic fabrication with selective laser-induced etching: New opportunities in fluid dynamics and rheology. *Current Opinion in Colloid and Interface Science*, 1-14.
41. Burshtein, N., Chan, S.T., Toda-Peters, K., Shen, A.Q., Haward, S.J., 2019. 3D-printed glass microfluidics for fluid dynamics and rheology. *Current Opinion in Colloid and Interface Science* 43, 1-14.
42. Burshtein, N., Shen, A.Q., Haward, S.J., 2019. Controlled symmetry breaking and vortex dynamics in intersecting flows. *Physics of Fluids* 31, 1-13.

43. Chakrabarti, A.M., Henser-Brownhill, T., Monserrat, J., Poetsch, A.R., Luscombe, N.M., Scaffidi, P., 2019. Target-Specific Precision of CRISPR-Mediated Genome Editing. *Molecular Cell* 73, 699-+.
44. Chan, S.T., Haward, S.J., Shen, A.Q., 2018. Microscopic investigation of vortex breakdown in a dividing T-junction flow. *Physical Review Fluids* 3, 072201 (072201-072208).
45. Chang, J., Shang, J., Sun, Y., Ono, L.K., Wang, D., Ma, Z., Huang, Q., Chen, D., Liu, G., Cui, Y., Qi, Y., Zheng, Z., 2018. Flexible and stable high-energy lithium-sulfur full batteries with only 100% oversized lithium. *Nature Communications* 9, 11.
46. Chen, J., Konstantinov, D., Molmer, K., 2019. Adiabatic preparation of squeezed states of oscillators and large spin systems coupled to a two-level system. *Physical Review A* 99.
47. Chen, J., Zadorozhko, A.A., Konstantinov, D., 2018. Strong coupling of a two-dimensional electron ensemble to a single-mode cavity resonator. *Physical Review B* 98, 9.
48. Chen, J.B., Konstantinov, D., Molmer, K., 2019. Adiabatic preparation of squeezed states of oscillators and large spin systems coupled to a two-level system. *Physical Review A* 99.
49. Chen, M., Ju, M.-G., Garces, H.F., Carl, A.D., Ono, L.K., Hawash, Z., Zhang, Y., Shen, T.-Y., Qi, Y., Grimm, R.L., Pacifici, D., Zeng, X.C., Zhou, Y.-Y., Padture, N.P., 2019. Highly stable and efficient all-inorganic lead-free perovskite solar cells with native-oxide passivation. *Nature Communications* 10.
50. Chen, Q., Wang, D., Baumgarten, M., Schollmeyer, D., Mullen, K., Narita, A., 2019. Regioselective Bromination and Functionalization of Dibenzo[hi,st]ovalene as Highly Luminescent Nanographene with Zigzag Edges. *Chem Asian J*, 1-6.
51. Chen, Y.-c., Fosdick, R., Fried, E., 2018. Isometric deformations of unstretchable material surfaces, a spatial variational treatment. *Journal of the Mechanics and Physics of Solids* 116, 290-322.
52. Chen, Y.-C., Fosdick, R., Fried, E., 2018. Issues Concerning Isometric Deformations of Planar Regions to Curved Surfaces. *Journal of Elasticity* 132, 1-42.
53. Cheung, M.P., Adaniya, H., Cassidy, C., Yamashita, M., Li, K.-L., Taba, S., Shintake, T., 2018. Improved sample dispersion in cryo-EM using "perpetually-hydrated" graphene oxide flakes. *Journal of Structural Biology* 204, 75-79.
54. Chimal, C.G.Z., De Schutter, E., 2018. Ca²⁺ Requirements for Long-Term Depression Are Frequency Sensitive in Purkinje Cells. *Frontiers in Molecular Neuroscience* 11, 12.

55. Chiuchiu, D., Lopez-Suarez, M., Neri, I., Diamantini, M.C., Gammaitoni, L., 2018. Cost of remembering a bit of information. *Physical Review A* 97, 6.
56. Chouhan, B.P., Maimaiti, S., Gade, M., Laurino, P., 2018. Rossmann-Fold Methyltransferases: Taking a "beta-Turn" around Their Cofactor, S-Adenosylmethionine. *Biochemistry*.
57. Chouthaiwale, P.V., Aher, R.D., Tanaka, F., 2018. Catalytic enantioselective formal (4+2) cycloaddition by aldol-aldol annulation of pyruvate derivatives with cyclohexane-1,3-diones to afford functionalized decalins. *Angewandte Chemie (International Edition/German Edition)* 57 (Int. Ed.), 130 (German Ed.), 13298-13301 (Int. Ed.), 13482-13485 (German Ed.).
58. Christopoulos, S., Moroshkin, P., Weller, L., Gerwers, B., Forge, R., Ockenfels, T., Vewinger, F., Weitz, M., 2018. Rubidium spectroscopy at high-pressure buffer gas conditions: detailed balance in the optical interaction of an absorber coupled to a reservoir. *Physica Scripta* 93, 124006.
59. Clavijo, S.P., Sarmiento Rodriguez, A.F., Espath, L.F.R., Dalcin, L., Cortes, A.M.A., Calo, V.M., 2019. Reactive n-species Cahn-Hilliard system: A thermodynamically-consistent model for reversible chemical reactions. *J Comput Appl Math* 350, 143-154.
60. Coquand, O., Essafi, K., Kownacki, J.P., Mouhanna, D., 2018. Glassy phase in quenched disordered crystalline membranes. *Phys Rev E* 97, 030102.
61. Costa, A.C., Ahamed, T., Stephens, G.J., 2019. Adaptive, locally linear models of complex dynamics. *Proceedings of the National Academy of Sciences* 116, 1501-1510.
62. Darwell, C.T., Ayyampalayam, S., Leebens-Mack, J., Smith, C.I., Segraves, K.A., Althoff, D.M., 2018. Phylogenomic reconstruction of transcriptome data confirms the basal position of Prodoxidae moths within the order Lepidoptera. *Arthropod Systematics & Phylogeny* 76, 59–64.
63. Darwell, C.T., Segar, S.T., Cook, J.M., 2018. Conserved community structure and simultaneous divergence events in the fig wasps associated with *Ficus benjamina* in Australia and China. *BMC Ecology* 18, 1-16.
64. De Schutter, E., 2019. Fallacies of Mice Experiments. *Neuroinformatics*.
65. Del Giudice, F., Cunning, B.V., Ruoff, R.S., Shen, A.Q., 2018. Filling the gap between transient and steady shear rheology of aqueous graphene oxide dispersions. *Rheologica Acta* 57, 293-306.
66. Del Giudice, F., D'Avino, G., Maffetone, P.L., Shen, A.Q., 2018. Fluid viscoelasticity drives self-assembly of particle trains in a straight microfluidic channel. *Physical Review Applied* 10, 1-10.

67. Denton, J.A., Gokhale, C.S., 2019. Synthetic mutualism and the intervention dilemma. *Life (Basel)* 9.
68. Dhamodharan, V., Nomura, Y., Dwidar, M., Yokobayashi, Y., 2018. Optochemical control of gene expression by photocaged guanine and riboswitches. *Chemical Communications* 54, 6181-6183.
69. Dinets, V., 2018. *Enemy at the gates*, Biosphere.
70. Dingwall, R.J., Edmonds, M.J., Helm, J.L., Malomed, B.A., Öhberg, P., 2018. Non-integrable dynamics of matter-wave solitons in a density-dependent gauge theory. *New Journal of Physics* 20.
71. Dornburg, A., Warren, D.L., Zapfe, K.L., Morris, R., Iglesias, T.L., Lamb, A., Hogue, G., Lukas, L., Wong, R., 2018. Testing ontogenetic patterns of sexual size dimorphism against expectations of the expensive tissue hypothesis, an intraspecific example using oyster toadfish (*Opsanus tau*). *Ecology and Evolution* 8, 3609-3616.
72. Doya, K., 2019. *The Deep Learning Revolution (Japanese (translated) Edition)*, 1 ed. Newton Press, Tokyo, p. 400.
73. Du, E., Hu, X., Li, G., Zhang, S., Mang, D., Roy, S., Sasaki, T., Zhang, Y., 2018. Self-Assembly-Directed Cancer Cell Membrane Insertion of Synthetic Analogues for Permeability Alteration. *Langmuir*, 1-7.
74. Ducloue, L., Casanellas, L., Haward, S.J., Poole, R.J., Alves, M.A., Lerouge, S., Shen, A.Q., Lindner, A., 2019. Secondary flows of viscoelastic fluids in serpentine microchannels. *Microfluidics and Nanofluidics* 23, 1-10.
75. Dwidar, M., Yokobayashi, Y., 2019. Riboswitch Signal Amplification by Controlling Plasmid Copy Number. *ACS Synthetic Biology* 8, 245-250.
76. Economo, E.P., Huang, J.P., Fischer, G., Sarnat, E.M., Narula, N., Janda, M., Guénard, B., Longino, J.T., Knowles, L.L., 2019. Evolution of the latitudinal diversity gradient in the hyperdiverse ant genus *Pheidole*. *Global Ecology and Biogeography* 0, 1–15.
77. Economo, E.P., Narula, N., Friedman, N.R., Weiser, M.D., Guénard, B., 2018. Macroecology and macroevolution of the latitudinal diversity gradient in ants. *Nature Communications* 9, 1-8.
78. Edmonds, M.J., Billam, T.P., Gardiner, S.A., Busch, T., 2018. Noise-free generation of bright matter-wave solitons. *Physical Review A* 98.
79. Edmunds, P.J., McIlroy, S.E., Adjeroud, M., Ang, P., Bergman, J.L., Carpenter, R.C., Coffroth, M.A., Fujimura, A.G., Hench, J.L., Holbrook, S.J., Leichter, J.J., Muko, S., Nakajima, Y., Nakamura, M., Paris, C.B., Schmitt, R.J., Sutthacheep, M., Toonen, R.J., Sakai, K., Suzuki, G., Washburn, L., Wyatt, A.S.J., Mitarai, S., 2018. Critical Information Gaps Impeding Understanding of the Role of Larval

Connectivity Among Coral Reef Islands in an Era of Global Change. *Frontiers in Marine Science*.

80. Eisenhut, F., Meyer, J., Kruger, J., Ohmann, R., Cuniberti, G., Moresco, F., 2018. Inducing the controlled rotation of single o-MeO-DMBI molecules anchored on Au(111). *Surface Science* 678, 177-182.
81. Erukonda, J., Johnson, S., Tanaka, F., 2018. C-Glycosidation of unprotected aldopentoses with ketones using proline-triethylamine as catalyst. *Heterocycles* 99.
82. Esporas, C.L., Tkachenko, G., Truong, V.g., Nic Chormaic, S., 2018. Ultrathin Optical Fiber: Guided Modes, Angular Momentum, and Applications. *The Review of Laser Engineering* 46, 196-199.
83. Fogarty, T., Ruks, L., Li, J., Busch, T., 2019. Fast control of interactions in an ultracold two atom system: Managing correlations and irreversibility. *SciPost Physics* 6.
84. Fujimoto, R., Uezono, K., Ishikura, S., Osabe, K., Peacock, W.J., Dennis, E.S., 2018. Recent research on the mechanism of heterosis is important for crop and vegetable breeding systems. *Breeding Science* 68, 145-158.
85. Funari, R., Bhalla, N., Chu, K.-Y., Soderstrom, B., Shen, A.Q., 2018. Nanoplasmonics for real-time and label-free monitoring of microbial biofilm formation. *ACS Sensors* 3, 1499-1509.
86. Funari, R., Bhalla, N., Chu, K.-Y., Söderström, B., Shen, A.Q., 2018. Nanoplasmonics for Real-Time and Label-Free Monitoring of Microbial Biofilm Formation. *ACS Sensors* 3, 1499-1509.
87. Furukawa, E., Alsop, B., Caparelli-Daquer, E.M., Barbante Casella, E., Qulmas Molina da Costa, R., de Maura Quelroz, P., Almeida Galvao, P., Benevides, L.R.d.S., Pinheiro Juca-Vasconcelos, H., Tripp, G., 2018. Behavioral adjustment to asymmetric reward availability among children with and without ADHD: effects of past and current reinforcement contingencies. *ADHD Attention Deficit and Hyperactivity Disorders*, 1-10.
88. Gavelis, G.S., Herranz, M., Wakeman, K.C., Ripken, C., Mitarai, S., Gile, G.H., Keeling, P.J., Leander, B.S., 2019. Dinoflagellate nucleus contains an extensive endomembrane network, the nuclear net. *Scientific Reports* 9, 839.
89. Giusteri, G.G., Seto, R., 2018. A theoretical framework for steady-state rheometry in generic flow conditions. *Journal of Rheology* 62, 713-723.
90. Gramatikopoulos, P., Sowwan, M., Kioseoglou, J., 2019. Computational Modeling of Nanoparticle Coalescence. *Advanced Theory and Simulations*.
91. Guest, J.R., Edmunds, P.J., Gates, R.D., Kuffner, I.B., Andersson, A.J., Barnes, B.B., Chollett, I., Courtney, T.A., Elahi, R., Gross, K., Lenz, E.A., Mitarai, S., Mumby, P.J., Nelson, H.R., Parker, B.A., Putnam, H.M., Rogers, C.S., Toth, L.T., 2018. A

framework for identifying and characterising coral reef “oases” against a backdrop of degradation. *Journal of Applied Ecology* 2018, 1-11.

92. Gutnick, T., Kuba, M.J., 2018. Animal Behavior: Socializing Octopus. *Current Biology* 28, R1147-R1149.
93. Guzman, C., Han, X., Shoguchi, E., Nic Chormaic, S., 2018. Fluorescence from a single *Symbiodinium* cell. *Methods and Applications in Fluorescence* 6, 035003.
94. Guzman, C., Shinzato, C., Lu, T.-M., Conaco, C., 2018. Transcriptome analysis of the reef-building octocoral, *Heliopora coerulea*. *Scientific Reports* 8, 8397.
95. Hagino, K., Nakazawa, K., Sato, G., Kokubun, M., Enoto, T., Fukazawa, Y., Hayashi, K., Kataoka, J., Katsuta, J., Kobayashi, S.B., Laurent, P., Lebrun, F., Limousin, O., Maier, D., Makishima, K., Mimura, T., Miyake, K., Mizuno, T., Mori, K., Murakami, H., Nakamori, T., Nakano, T., Noda, H., Odaka, H., Ohno, M., Ohta, M., Saito, S., Sato, R., Tajima, H., Takahashi, H., Takahashi, T., Takeda, S.i., Tanaka, T., Terada, Y., Uchiyama, H., Uchiyama, Y., Watanabe, S., Yamaoka, K., Yatsu, Y., Yuasa, T., 2018. In-orbit performance and calibration of the Hard X-ray Imager onboard Hitomi (ASTRO-H). *Journal of Astronomical Telescopes Instruments and Systems* 4, 15.
96. Halder, A., Kioseoglou, J., Yang, B., Kolipaka, K.L., Seifert, S., Ilavsky, J., Pellin, M., Sowwan, M., Grammatikopoulos, P., Vajda, S., 2019. Nanoassemblies of ultrasmall clusters with remarkable activity in carbon dioxide conversion into C1 fuels. *Nanoscale*, 4683-4687
97. Hamada, M., Schröder, K., Bathia, J., Kürn, U., Fraune, S., Khalturina, M., Konstantin, K., Shinzato, C., Satoh, N., Bosch, T.C.G., 2018. Metabolic co-dependence drives the evolutionarily ancient *Hydra-Chlorella* symbiosis. *eLIFE* 7.
98. Han, D., Xie, J., Hussain, A., Gao, B., Qu, C., Liao, W., Xu, X., Gao, F., Li, H., Lan, T., Liu, A., Zhuang, G., Liu, W., 2018. In situ relative self-dependent calibration of electron cyclotron emission imaging via shape matching. *Review of Scientific Instruments* 89, 5.
99. Han, P., Hou, I.C.-Y., Lu, H., Wang, X.-Y., Mullen, K., Bonn, M., Narita, A., Canovas, E., 2019. Chemisorption of Atomically Precise 42-Carbon Graphene Quantum Dots on Metal Oxide Films Greatly Accelerates Interfacial Electron Transfer. *Journal of Physical Chemistry Letters*, 1431-1436.
100. Han, X., Truong, V.G., Nic Chormaic, S., 2018. Efficient microparticle trapping with plasmonic annular apertures arrays. *Nano Futures* 2, 1-9.
101. Han, X., Truong, V.G., Thomas, P.S., Nic Chormaic, S., 2018. Sequential trapping of single nanoparticles using a gold plasmonic nanohole array *Photonics Research* 6, 981-986.

102. Hanada, M., Shimada, H., Tezuka, M., 2018. Universality in chaos: Lyapunov spectrum and random matrix theory. *Physical Review E* 97, 7.
103. Hartung, S., Sommer, F., Voelkel, S., Schönke, J., Rehberg, I., 2018. Assembly of eight spherical magnets into a dotriacontapole configuration. *Physical Review B* 98, 6.
104. Hashimoto, Y., Yoshimura, M., Huang, R.-N., 2019. Wasabi versus red imported fire ants: preliminary test of repellency of microencapsulated allyl isothiocyanate against *Solenopsis invicta* (Hymenoptera: Formicidae) using bait traps in Taiwan. *Applied Entomology and Zoology* 9, 1-4.
105. Haward, S.J., Kitajima, N., Toda-Peters, K., Takahashi, T., Shen, A.Q., 2019. Flow of wormlike micellar solutions around microfluidic cylinders with high aspect ratio and low blockage ratio *Soft Matter* 15, 1927-1941.
106. Haward, S.J., Page, J., Zaki, T.A., Shen, A.Q., 2018. Inertioelastic Poiseuille flow over a wavy surface. *Physical Review Fluids* 3, 091302 (091301-091309).
107. Haward, S.J., Page, J., Zaki, T.A., Shen, A.Q., 2018. "Phase diagram" for viscoelastic Poiseuille flow over a wavy surface. *Physics of Fluids* 30, 1-10.
108. Hawash, Z., Ono, L.K., Qi, Y., 2018. Recent Advances in Spiro-MeOTAD Hole Transport Material and Its Applications in Organic-Inorganic Halide Perovskite Solar Cells. *Advanced Materials Interfaces* 5, 22.
109. Hayashi, T., Teruya, T., Chaleckis, R., Morigasaki, S., Yanagida, M., 2018. S-Adenosylmethionine Synthetase Is Required for Cell Growth, Maintenance of G0 Phase, and Termination of Quiescence in Fission Yeast. *iScience* 5, 38-51.
110. Helmkamp, M., Bellinger, M.R., Frazier, M., Takabayashi, M., 2019. Symbiont type and environmental factors affect transcriptome-wide gene expression in the coral *Montipora capitata*. *Ecology and Evolution* 9, 378-392.
111. Hermes, D.J., Xu, C., Poklis, J.L., Niphakis, M.J., Cravatt, B.F., Mackie, K., Lichtman, A.H., Ignatowska-Jankowska, B.M., Fitting, S., 2018. Neuroprotective effects of fatty acid amide hydrolase catabolic enzyme inhibition in a HIV-1 Tat model of neuroAIDS. *Neuropharmacology*.
112. Hieulle, J., Wang, X., Stecker, C., Son, D.-Y., Qiu, L., Ohmann, R., Ono, L.K., Mugarza, A., Yan, Y., Qi, Y., 2019. Unraveling the impact of halide mixing on perovskite stability. *Journal of American Chemical Society*.
113. Higa, Y., Shinzato, C., Zayasu, Y., Nagata, T., Nakamura, R., Yokokura, A., Janado, S., Omori, M., 2018. Flexible development of techniques for coral reef restoration using asexual reproduction in the Coral Reef Preservation and Rehabilitation Project by Okinawa Prefectural Government, Japan, *Journal of Japanese Coral Reef Society*, pp. 21-37.

114. Hikami, S., 2018. Conformal bootstrap analysis for the Yang–Lee edge singularity. *Progress of Theoretical and Experimental Physics* 2018, 15.
115. Hikami, S., 2018. Conformal bootstrap analysis for single and branched polymers. *Progress of Theoretical and Experimental Physics* 2018, 11.
116. Horie, T., Hiroe, R., Chen, K., Cao, C., Nakagawa, M., Kuskabe, T.G., Satoh, N., Sasakura, Y., Levine, M., 2018. Regulatory cocktail for dopaminergic neurons in a protovertebrate identified by whole-embryo single-cell transcriptomics. *Gene Dev* 32, 19-20.
117. Idei, H., Murata, S., Chen, Y., Yamashita, Y., Tani, J., Ogata, T., 2018. A Neurorobotics Simulation of Autistic Behavior Induced by Unusual Sensory Precision. *Computational Psychiatry* 2, 164-182.
118. Igarashi, M., Wickens, J.R., 2018. Kinematic analysis of bimanual movements during food handling by headfixed rats. *Journal of Neurophysiology* 121, 490–499.
119. Iglesias, T.L., Boal, J.G., Frank, M.G., Zeil, J., Hanlon, R.T., 2019. Cyclic nature of the REM sleep-like state in the cuttlefish *Sepia officinalis*. *Journal of Experimental Biology*.
120. Iglesias, T.L., Dornburg, A., Warren, D.L., Wainwright, P.C., Schmitz, L., Economo, E.P., 2018. Eyes Wide Shut: the impact of dim-light vision on neural investment in marine teleosts. *Journal of Evolutionary Biology* 0, 1-11.
121. Im, H., Dwidar, M., Mitchell, R.J., 2018. *Bdellovibrio bacteriovorus* HD100, a predator of Gram-negative bacteria, benefits energetically from *Staphylococcus aureus* biofilms without predation. *ISME Journal* 12, 2090-2095.
122. Inoue, J., Satoh, N., 2018. ORTHOSCOPE: an automatic web tool for phylogenetically inferring bilaterian orthogroups with user-selected taxa. *Molecular Biology and Evolution*.
123. Inui, S., Tsubota, M., Moroshkin, P., Leiderer, P., Kono, K., 2018. Dynamics of fine particles due to quantized vortices on the surface of superfluid 4He. *Journal of Low Temperature Physics*, 1-7.
124. Iqbal, R., Majhy, B., Shen, A.Q., 2018. Evaporation and morphological patterns of bi-dispersed colloidal droplets on hydrophilic and hydrophobic surfaces *Soft Matter* 14, 9901-9909.
125. Iribarne, M., Masai, I., 2018. Do cGMP levels drive the speed of photoreceptor degeneration? *Advances in Experimental Medicine and Biology* 1074, 327-333.
126. Irie, N., Satoh, N., Kuratani, S., 2018. The phylum Vertebrata: a case for zoological recognition. *Zoological Letters* 4.

127. Irmiler, A., Burow, A.M., Pauly, F., 2018. Robust periodic Fock exchange with atom-centered Gaussian basis sets. *Journal of Chemical Theory and Computation* 14, 4567–4580.
128. Ishikawa, S.-n., Takahashi, T., Watanabe, S., Narukage, N., Miyazaki, S., Orita, T., Takeda, S.i., Nomachi, M., Fujishiro, I., Hodoshima, F., 2018. High-speed X-ray imaging spectroscopy system with Zynq SoC for solar observations. *Nuclear Instruments & Methods in Physics Research Section a-Accelerators Spectrometers Detectors and Associated Equipment* 912, 191-194.
129. Ivanov, Y., Kozlov, A.F., Galiullin, R.A., Tatur, V.Y., Ziborov, V.S., Ivanova, N.D., Pleshakova, T.O., Vesnin, S.G., Goryanin, I., 2018. Use of Microwave Radiometry to Monitor Thermal Denaturation of Albumin. *Frontiers in physiology* 9, 956.
130. Iwasaka, H., Koyanagi, R., Satoh, R., Nagano, A., Watanabe, K., Hisata, K., Satoh, N., Aki, T., 2018. A Possible Trifunctional beta-Carotene Synthase Gene Identified in the Draft Genome of *Aurantiochytrium* sp. Strain KH105. *Genes (Basel)* 9, 1-14.
131. Izadpanah, S., Shaban, P., Aghebati-Maleki, A., Baghbani, E., Baghbanzadeh, A., Fotouhi, A., Bakhshinejad, B., Aghebati-Maleki, L., Baradaran, B., 2019. Insights into the roles of miRNAs; miR-193 as one of small molecular silencer in osteosarcoma therapy. *Biomed Pharmacother* 111, 873-881.
132. Jaidar, O., Carrillo-Reid, L., Nakano, Y., Lopez-Huerta, V.G., Hernandez-Cruz, A., Bargas, J., Garcia-Munoz, M., Arbuthnott, G.W., 2019. Synchronized activation of striatal direct and indirect pathways underlies the behavior in unilateral dopamine-depleted mice. *European Journal of Neuroscience*.
133. Jana, R., Pareek, V., Khatua, P., Saha, P., Chandra, A., Mukherjee, G.D., 2018. Pressure induced anomalous magnetic behaviour in nanocrystalline YCrO₃ at room temperature. *Journal of Physics-Condensed Matter* 30, 8.
134. Jenkins, T.C., Fayzullin, R.R., Khaskin, E., 2018. Three-Component [1 + 1 + 1] Cyclopropanation with Ruthenium(II). *Organometallics* 37, 2609-2617.
135. Jayawardena, N., Burga, L.N., Easingwood, R.A., Takizawa, Y., Wolf, M., Bostina, M., 2018. Structural basis for anthrax toxin receptor 1 recognition by Seneca Valley Virus. *PNAS* 115, E10934-E10940.
136. Jordan, R., Fukunaga, I., Kollo, M., Schaefer, A.T., 2018. Active sampling state dynamically enhances olfactory bulb odor representation. *Neuron* 98, 1214-1228.e1215.
137. Juarez-Perez, E., Ono, L.K., Uriarte, I., Cocinero, E.J., Qi, Y., 2019. Degradation Mechanism and Relative Stability of Methylammonium Halide Based Perovskites Analyzed on the Basis of Acid-Base Theory. *ACS Appl Mater Interfaces* 11, 12586-12593.

138. Juarez-Perez, E.J., Ono, L.K., Maeda, M., Jiang, Y., Hawash, Z., Qi, Y., 2018. Photodecomposition and thermal decomposition in methylammonium halide lead perovskites and inferred design principles to increase photovoltaic device stability. *Journal of Materials Chemistry A* 6, 9604-9612.
139. Jung, M., Lee, H., Tani, J., 2018. Adaptive Detrending to Accelerate Convolutional Gated Recurrent Unit Training for Contextual Video Recognition. . *Neural Networks* 105, 356-370.
140. Kahnt, A., Vermeulen, R., Iinuma, Y., Shalamzari, M.S., Maenhaut, W., Claeys, M., 2018. High-molecular-weight esters in alpha-pinene ozonolysis secondary organic aerosol: structural characterization and mechanistic proposal for their formation from highly oxygenated molecules. *Atmospheric Chemistry and Physics* 18, 8453-8467.
141. Kamble, R.B., Chavan, S.S., Suryavanshi, G., 2019. An efficient heterogeneous copper fluorapatite (CuFAP)-catalysed oxidative synthesis of diaryl sulfone under mild ligand- and base-free conditions. *New J Chem* 43, 1632-1636.
142. Katsuragawa, M., Tampo, M., Hamada, K., Harayama, A., Miyake, Y., Oshita, S., Sato, G., Takahashi, T., Takeda, S.i., Watanabe, S., Yabu, G., 2018. A compact imaging system with a CdTe double-sided strip detector for non-destructive analysis using negative muonic X-rays. *Nuclear Instruments & Methods in Physics Research Section a-Accelerators Spectrometers Detectors and Associated Equipment* 912, 140-143.
143. Khalife, A., Keller, R.A., Billen, J., Hita Garcia, F., Economo, E.P., Peeters, C., 2018. Skeletomuscular adaptations of head and legs of *Melissotarsus* ants for tunnelling through living wood. *Frontiers in Zoology* 15, 1-11.
144. Khalturin, K., Billas, I.M.L., Chebaro, Y., Reitzel, A.M., Tarrant, A.M., Laudet, V., Markov, G.V., 2018. NR3E receptors in cnidarians: A new family of steroid receptor relatives extends the possible mechanisms for ligand binding. *Journal of Steroid Biochemistry & Molecular Biology* 184, 11-19.
145. Khandhawit, T., 2018. Unfolded Seiberg-Witten Floer spectra, II: Relative invariants and the gluing theorem. *arXiv*.
146. Khrameeva, E., Kurochkin, I., Bozek, K., Giavalisco, P., Khaitovich, P., 2018. Lipidome Evolution in Mammalian Tissues. *Molecular Biology and Evolution* 35, 1947.
147. Kien, F.L., Hejazi, S.S.S., Truong, V.G., Nic Chormaic, S., Busch, T., 2018. Chiral force of guided light on an atom. *Physical Review A* 97, 1-5.
148. Kien, F.L., Kornovan, D.F., Seyed Hejazi, S.S., Truong, V.G., Petrov, M., Nic Chormaic, S., Busch, T., 2018. Force of light on a two-level atom near an ultrathin optical fiber. *New Journal of Physics* 20, 1-21.

149. Kikkawa, A., 2018. Random Matrix Analysis for Gene Interaction Networks in Cancer Cells. *Scientific Reports* 8, 12.
150. Kim, O.T.P., Nguyen, P.T., Shoguchi, E., Hisata, K., Vo, T.T.B., Inoue, J., Shinzato, C., Le, B.T.N., Nishitsuji, K., Kanda, M., Nguyen, V.H., Nong, H.V., Satoh, N., 2018. A draft genome of the striped catfish, *Pangasianodon hypophthalmus*, for comparative analysis of genes relevant to development and a resource for aquaculture improvement. *BMC Genomics* 19, 1-16.
151. Kim, T., Leyden, M.R., Ono, L.K., Qi, Y., 2018. Stacked-graphene layers as engineered solid-electrolyte interphase (SEI) grown by chemical vapour deposition for lithium-ion batteries. *Carbon* 132, 678-690.
152. Kim, T., Ono, L.K., Fleck, N., Raga, S.R., Qi, Y., 2018. Transition metal speciation as a degradation mechanism with the formation of a solid-electrolyte interphase (SEI) in Ni-rich transition metal oxide cathodes. *Journal of Materials Chemistry A* 6, 14449-14463.
153. Kim, T., Song, W., Son, D.-Y., Ono, L.K., Qi, Y., 2019. Lithium-ion batteries: outlook on present, future, and hybridized technologies. *Journal of Materials Chemistry A* 7, 2942-2964.
154. Kinjo, Y., Bourguignon, T., Tong, K.J., Kuwahara, H., Lim, S.J., Yoon, K.B., Shigenobu, S., Park, Y.C., Nalepa, C.A., Hongoh, Y., Ohkuma, M., Lo, N., Tokuda, G., 2018. Parallel and Gradual Genome Erosion in the Blattabacterium Endosymbionts of *Mastotermes darwiniensis* and *Cryptocercus* Wood Roaches. *Genome Biology and Evolution* 10, 1622-1630.
155. Kinoshita-Kawada, M., Hasegawa, H., Hongu, T., Yanagi, S., Kanaho, Y., Masai, I., Mishima, T., Chen, X., Tsuboi, Y., Rao, Y., Yuasa-Kawada, J., Wu, J.Y., 2019. A crucial role for Arf6 in the response of commissural axons to Slit. *Development* 146, 1-41.
156. Kizilyaprak, C., Stierhof, Y.-D., Humbel, B.M., 2018. Volume microscopy in biology: FIB-SEM tomography. *Tissue Cell*.
157. Klima, K., Apt, J., Bandi, M.M., Happy, P., Loutan, C., Young, R., 2018. Geographic smoothing of solar photovoltaic electric power production in the Western USA. *Journal of Renewable and Sustainable Energy* 10, 1-10.
158. Klockner, J.C., Cuevas, J.C., Pauly, F., 2018. Transmission eigenchannels for coherent phonon transport. *Physical Review B* 97.
159. Kocsis, V., Penc, K., Room, T., Nagel, U., Vit, J., Romhányi, J., Tokunaga, Y., Taguchi, Y., Tokura, Y., Kezsmarki, I., Bordacs, S., 2018. Identification of antiferromagnetic domains via the optical magnetoelectric effect. *Physical Review Letters* 121, 057601.
160. Koizumi, S.-i., Sasaki, D., Hsien, T.-H., Taira, N., Arakaki, N., Yamasaki, S., Wang, K., Sarkar, S., Shirahata, H., Miyagi, M.M., Ishikawa, H., 2018. JunB regulates

homeostasis and suppressive functions of effector regulatory T cells. *Nature Communications* 9:5344, 1-14.

161. Koldaeva, A., Schaefer, A.T., Fukunaga, I., 2019. Rapid task-dependent tuning of the mouse olfactory bulb. *eLIFE*, 1-12.
162. Koludarov, I., Aird, S.D., 2019. Snake venom NAD glycohydrolases: primary structures, genomic location, and gene structure. *PeerJ* 2019, 1-14.
163. Komiya, R., 2018. Diverse function of various non-coding RNAs, *Seibutsu-kogaku Kaishi*
164. Komiya, R., Kurokawa, R., Oyosih, T., Matsuno, Y., Tani, H., Katahira, M., Hirtachi, K., Iwashita, Y., Yamashita, T., Kondo, K., Yoneda, R., Yamaoki, Y., Ueda, N., Mashima, T., Kobayashi, N., Nagata, T., Kiyoshi, A., Miyake, M., Kano, F., Murata, M., Hamad, N., Sasaki, K., Shoji, N., 2018. Multiplicity in Long Noncoding RNA in Living Cells. *Biomedical Sciences* 4, 18-23.
165. Kondo, C., Hara, T., Fukui, T., Inagaki, T., Takebe, H., Nakazawa, S., Fukami, K., Kawaguchi, Y., Kawaguchi, H., Otake, Y., Tanaka, H., 2018. A stable pulsed power supply for multi-beamline XFEL operations. *Review of Scientific Instruments* 89, 10.
166. Kondo, M., Matsuo, M., Igarashi, K., Haramoto, Y., Yamamoto, T., Yasuoka, Y., Taira, M., 2019. De novo transcription of multiple Hox cluster genes takes place simultaneously in early *Xenopus tropicalis* embryos. *Biology Open* 8.
167. Konno, T., Wakahara, T., Miyazawa, K.i., Marumoto, K., 2018. A dramatic improvement in the tensile strength of fullerene needle-like crystals. *New Carbon Materials* 33, 310-315.
168. Koo, J., Jang, Y., Martin, L., Kim, D., Jeong, H., Kang, K., Lee, W., Kim, J., Hwang, W.T., Xiang, D., Scheer, E., Kabdulov, M., Huhn, T., Pauly, F., Lee, T., 2019. Unidirectional real-time photoswitching of diarylethene molecular monolayer junctions with multilayer graphene electrodes. *ACS Applied Material Interfaces* 11, 11645-11653.
169. Kotani, N., Ida, Y., Nakano, T., Sato, I., Kuwahara, R., Yamaguchi, A., Tomita, M., Honke, K., Murakoshi, T., 2018. Tumor-dependent secretion of close homolog of L1 results in elevation of its circulating level in mouse model for human lung tumor. *Biochemical and Biophysical Research Communications* 501, 982-987.
170. Krishna, M.B.M., Madeo, J., Urquizo, J.P., Zhu, X., Vinod, S., Tiwary, C., Ajayan, P.M., Dani, K.M., 2018. Terahertz photoconductivity and Photocarrier dynamics in few-layer hBN/WS2 van der waals heterostructure laminates. *Semiconductor Science and Technology* 33, 7.
171. Kuba, M., 2018. Vertebrate/Invertebrate – When do we start caring?, in: Andrew, B. (Ed.), *Animal Welfare in a Changing World*. CAB International, Oxfordshire, pp. 108-113.

172. Kubota, K., Kintsu, H., Matsuura, A., Tsuchihashi, Y., Takeuchi, T., Satoh, N., Suzuki, M., 2018. Functional analyses of MMPs for aragonite crystal formation in the ligament of *Pinctada fucata*. *Frontiers in Marine Science* 5, 1-9.
173. Kuck, A., Stegeman, D.F., van Asseldonk, E.H.F., 2019. Modeling Trans-Spinal Direct Current Stimulation in the Presence of Spinal Implants. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*.
174. Kuljis, D., Kudo, T., Tahara, Y., Ghiani, C.A., Colwell, C.S., 2018. Pathophysiology in the suprachiasmatic nucleus in mouse models of Huntington's disease. *Journal of neuroscience research* 96, 1862-1875.
175. Lajbner, Z., Pnini, R., Camus, M.F., Miller, J., Dowling, D.K., 2018. Experimental evidence that thermal selection shapes mitochondrial genome evolution. *Sci Rep* 8, 9500.
176. Lamowski, S., Mann, C.-R., Hellbach, F., Mariani, E., Weick, G., Pauly, F., 2018. Plasmon polaritons in cubic lattices of spherical metallic nanoparticles. *Physical Review B* 97.
177. Lapointe, S., Khaskin, E., Fayzullin, R.R., Khusnutdinova, J., 2019. Stable nickel(ii) complexes with electron-rich, sterically-hindered, innocent PNP pincer ligands. *Organometallics*, 1-14.
178. Le Gal, M., Violeauab, D., Ataab, R., Wang, X., 2018. Shallow water numerical models for the 1947 gisborne and 2011 Tohoku-Oki tsunamis with kinematic seismic generation. *Coastal Engineering* 139, 15.
179. Le Kien, F., Kornovan, D.F., S. Hejazi, S.S., Truong, V.G., Petrov, M.I., Nic Chormaic, S., Busch, T., 2018. Force of light on a two-level atom near an ultrathin optical fiber. *New Journal of Physics* 20, 1-21.
180. Le Kien, F., S. Hejazi, S.S., Truong, V.G., Nic Chormaic, S., Busch, T., 2018. Chiral force of guided light on an atom. *Physical Review A* 97, 1-5.
181. Lee, H., Jung, M., Tani, J., 2018. Recognition of Visually Perceived Compositional Human Actions by Multiple Spatio-Temporal Scales Recurrent Neural Networks. *IEEE Transactions on Cognitive and Developmental Systems* 10, 1058-1069.
182. Lepleux, C., Marie-Brasset, A., Temelie, M., Boulanger, M., Brotin, E., Goldring, M.B., Hirtz, C., Vares, G., Nakajima, T., Saintigny, Y., Savu, D., Chevalier, F., 2019. Bystander effectors of chondrosarcoma cells irradiated at different LET impair proliferation of chondrocytes. *Journal of Cell Commun Signal*.
183. Li, C., Lenhard, B., Luscombe, N.M., 2018. Integrated analysis sheds light on evolutionary trajectories of young transcription start sites in the human genome. *Genome Research* 28, 676-688.

184. Li, W., Du, J., Nic Chormaic, S., 2018. Tailoring a nanofiber for enhanced photon emission and coupling efficiency from single quantum emitters. *Optics Letters* 43, 1674-1677.
185. Liang, J., Liu, Z., Qiu, L., Hawash, Z., Meng, L., Wu, Z., Jiang, Y., Ono, L.K., Qi, Y., 2018. Enhancing Optical, Electronic, Crystalline, and Morphological Properties of Cesium Lead Halide by Mn Substitution for High-Stability All-Inorganic Perovskite Solar Cells with Carbon Electrodes. *Advanced Energy Materials* 8, 1-7.
186. Liénard, J.F., Achakulvisut, T., Acuna, D.E., David, S.V., 2018. Intellectual synthesis in mentorship determines success in academic careers. *Nature Communications* 9, 13.
187. Lin, J.-Y., Smorodin, A.V., Badrutdinov, A.O., Konstantinov, D., 2018. Sliding of an electron crystal of finite size on the surface of superfluid 4He confined in a microchannel. *Physical Review B* 98, 1-7.
188. Lin, J.-Y., Smorodin, A.V., Badrutdinov, A.O., Konstantinov, D., 2018. Transport Properties of a Quasi-1D Wigner Solid on Liquid Helium Confined in a Microchannel with Periodic Potential. *Journal of Low-Temperature Physics*, 1-11.
189. Lin, M.-F., Takahashi, S., Foret, S., Davy, S.K., Miller, D.J., 2019. Transcriptomic analyses highlight the likely metabolic consequences of colonization of a cnidarian host by native or non-native Symbiodinium species. *Biology Open* 8.
190. Liu, X.-F., Lei, F., Wang, T.-J., Long, G.-L., Wang, C., 2019. Gain lifetime characterization through time-resolved stimulated emission in a whispering-gallery mode microresonator. *Nanophotonics-Berlin* 8, 127-134.
191. Liu, Z., Qiu, L., Juarez-Perez, E.J., Hawash, Z., Kim, T., Jiang, Y., Wu, Z., Raga, S.R., Ono, L.K., Liu, S.F., Qi, Y., 2018. Gas-solid reaction based over one-micrometer thick stable perovskite films for efficient solar cells and modules. *Nature Communications*, 1-11.
192. Luisier, R., Tyzack, G.E., Hall, C.E., Mitchell, J.S., Devine, H., Taha, D.M., Malik, B., Meyer, I., Greensmith, L., Newcombe, J., Ule, J., Luscombe, N.M., Patani, R., 2018. Intron retention and nuclear loss of SFPQ are molecular hallmarks of ALS. *Nature Communications* 9, 15.
193. Lukoseviciute, M., Gavriouchkina, D., Williams, R.M., Hochgreb-Hagele, T., Senanayake, U., Chong-Morrison, V., Thongjuea, S., Repapi, E., Mead, A., Sauka-Spengler, T., 2018. From pioneer to repressor: Bimodal foxd3 activity dynamically remodels neural crest regulatory landscape in vivo. *Developmental Cell* 47, 608-628.
194. Luzon, K.S., Lin, M.-F., Ablan Lagman, M.C.A., Licuanan, W.R.Y., Chen, C.A., 2018. Correction: Resurrecting a subgenus to genus: molecular phylogeny of

Euphyllia and Fimbriaphyllia (order Scleractinia; family Euphylliidae; clade V). PeerJ 6.

195. Maeda, K., Saeki, T., 2018. Revision of Species in *Sicyopterus* (Gobiidae: *Sicydiinae*) Described by de Beaufort (1912), with a First Record of *Sicyopterus longifilis* from Japan. *Species Diversity* 23, 253-262.
196. Maemura, T., Fukuyama, S., Sugita, Y., Lopes, T.J.S., Nakao, T., Noda, T., Kawaoka, Y., 2018. Lung-Derived Exosomal miR-483-3p Regulates the Innate Immune Response to Influenza Virus Infection. *Journal of Infectious Diseases* 217, 1372-1382.
197. Mahardini, A., Yamauchi, C., Takeuchi, Y., Rizky, D., Takekata, H., Takemura, A., 2018. Changes in mRNA abundance of insulin-like growth factors in the brain and liver of a tropical damselfish, *Chrysiptera cyanea*, in relation to seasonal and food-manipulated reproduction. *General and comparative endocrinology* 269, 112-121.
198. Mahmood, F., Överstedt, L.-G.W., Toots, M., Wilken, G., Skoglund, U., 2018. An extended field-based method for noise removal from electron tomographic reconstructions. *IEEE Access* 6, 17326 - 17339.
199. Mahmood, F., Shahid, N., Skoglund, U., Vandergheynst, P., 2018. Adaptive graph-based total variation for tomographic reconstructions. *IEEE Signal Processing Letters* 25, 700-704.
200. Mao, Y., Economo, E.P., Satoh, N., 2018. The roles of introgression and climate change in the rise to dominance of acropora corals. *Current Biology* 28, 3373-3382.
201. Mao, Y., Satoh, N., 2019. A likely ancient genome duplication in the speciose reef-building coral genus, *Acropora*. *iScience* 13, 20-32.
202. Mao, Y.F., 2019. GenoDup Pipeline: a tool to detect genome duplication using the dS-based method. *Peerj* 7.
203. Maram, L., Tanaka, F., 2019. Mannich reactions of carbohydrate derivatives with ketones to afford polyoxy-functionalized piperidines. *Organic Letters* 21, 1165-1169.
204. Margiolakis, A., Tsibidis, G.D., Dani, K.M., Tsironis, G.P., 2018. Ultrafast dynamics and subwavelength periodic structure formation following irradiation of GaAs with femtosecond laser pulses. *Physical Review B* 98.
205. Marin, F., Chmiel, A., Takeuchi, T., Bundelewa, I., Durlet, C., Samankassou, E., Medakovic, D., 2018. Skeletal Organic Matrices in Molluscs: Origin, Evolution, Diagenesis, in: Endo, K., Kogure, T., Nagasawa, H. (Eds.), *Biomineralization: From Molecular and Nano-structural Analyses to Environmental Science*. Springer, Singapore, pp. 325-332.

206. Mariserla, B.M.K., Madéo, J., Pérez-Urquizo, J., Zhu, X., Vinod, S., Tiwary, C.S., Ajayan, P.M., Dani, K.M., 2018. Terahertz photoconductivity and photocarrier dynamics in few-layer hBN/WS₂ van der Waals heterostructure laminates. *Semiconductor Science and Technology* 33, 1-7.
207. Marlétaz, F., Firbas, P.N., Maeso, I., Tena, J.J., Bogdanovic, O., Perry, M., Wyatt, C.R., de la Calle-Mustienes, E., Bertrand, S., Burguera, D., Acemel, R.D., van Heeringen, S.J., Naranjo, S., Herrera-Ubeda, C., Skvortsova, K., Jimenez-Gancedo, S., Aldea, D., Marquez, Y., Buono, L., Kozmikova, I., Permanyer, J., Louis, A., Albuixech-Crespo, B., Le Petillon, Y., Leon, A., Subirana, L., Balwierz, P.J., D'uckett, P.E., Andrea, Farahani, E., Aury, J.-M., Mangelot, S., Wincker, P., Albalat, R., Nbenito-Gutiérrez, È., Cañestro, C., Castro, F., D'Aniello, S., Ferrier, D.E.K., Huang, S., Laudet, V., Marais, G.A.B., Pontarotti, P., Schubert, M., Seitz, H., Somorjal, I., Takahashi, T., Mirabeau, O., Xu, A., Yu, J.-K., Carninci, P., Matinez-Morales, J.R., Roest Crollius, H., Kozmik, Z., Weirauch, M.T., Garcia-Fernandez, J., Lister, R., Lenhard, B., Holland, P.W.H., Escriva, H., Gómez-Skarmeta, J.L., Irimia, M., 2018. Amphioxus functional genomics and the origins of vertebrate gene regulation. *Nature* 564, 64–70.
208. Marlétaz, F., Peijnenburg, K.T.C.A., Goto, T., Satoh, N., Rokhsar, D.S., 2019. A new Spiralian phylogeny places the enigmatic arrow worms among Gnathiferans. *Current Biology* 29, 1-7.
209. Mars Brisbin, M., Mesrop, L.Y., Grossmann, M.M., Mitarai, S., 2018. Intra-host symbiont diversity and extended symbiont maintenance in photosymbiotic *Acantharea* (Clade F). *Frontiers in Microbiology* 9, 1998.
210. Mars Brisbin, M., Mitarai, S., 2019. Differential Gene Expression Supports a Resource-Intensive, Defensive Role for Colony Production in the Bloom-Forming Haptophyte, *Phaeocystis globosa*. *Journal of Eukaryotic Microbiology*.
211. Matsu-ura, T., Shirakawa, H., Suzuki, K.G.N., Miyamoto, A., Sugiura, K., Michikawa, T., Kusumi, A., Mikoshiba, K., 2019. Dual-FRET imaging of IP₃ and Ca²⁺ revealed Ca²⁺-induced IP₃ production maintains long lasting Ca²⁺ oscillations in fertilized mouse eggs. *Scientific Reports* 9.
212. Matsumoto, A., Del Giudice, F., Rotrattanadumrourng, R., Shen, A.Q., 2019. Rheological Scaling of Ionic-Liquid-Based Polyelectrolytes in Ionic Liquid Solutions. *Macromolecules*.
213. Matsumoto, A., Iacob, C., Noda, T., Urakawa, O., Runt, J., Inoue, T., 2018. Introducing Large Counteranions Enhances the Elastic Modulus of Imidazolium-Based Polymerized Ionic Liquids. *Macromolecules* 51, 4129-4142.
214. Matsuura, A., Yoshimura, K., Kintsu, H., Atsumi, T., Tsuchihashi, Y., Takeuchi, T., Satoh, N., Negishi, L., Sakuda, S., Asakura, T., Imura, Y., Yoshimura, E., Suzuki, M., 2018. Structural and functional analyses of calcium ion response

- factors in the mantle of *Pinctada fucata*. *Journal of Structural Biology* 204, 240-249.
215. Mattei, J.G., Grammatikopoulos, P., Zhao, J., Singh, V., Vernieres, J., Steinhauer, S., Porkovich, A., Danielson, E., Nordlund, K., Djurabekova, F., Sowwan, M., 2019. Gas-Phase Synthesis of Trimetallic Nanoparticles. *Chemistry of Materials* 31, 2151-2163.
 216. Mbanyana, N., Hita Garcia, F., Robertson, H.G., Le Roux, J.J., 2018. A taxonomic revision of seed harvester ants of the *Tetramorium solidum* group (Hymenoptera: Formicidae) in southern Africa. *Eur. J. Taxon.* 454, 1–59.
 217. Mekhail, S.P., Abudukeyoumu, N., Ward, J., Arbuthnott, G., Chormaie, S.N., 2018. Fiber-bundle-basis sparse reconstruction for high resolution wide-field microendoscopy. *Biomedical Optics Express* 9, 1843-1851.
 218. Meshcheryakov, V.A., Shibata, S., Tokoro Schreiber, M., Villar-Briones, A., Jarrell, K.F., Aizawa, S.-I., Wolf, M., 2019. High-resolution archaeal structure reveals a conserved metal-binding site. *EMBO reports* 20, 1-12.
 219. Metzger, V., Steinhäuser, S., Pakanavicius, E., Gouti, M., Stamatakis, D., Ivanovitch, K., Watson, T., Rayon, T., Gharavy, S.N.M., Lovell-Badge, R., Luscombe, N.M., Briscoe, J., 2018. Nervous system regionalization entails axial allocation before neural differentiation. *Cell* 175, 1105.
 220. Meuel, T., Coudert, M., Fischer, P., Bruneau, C.H., Kellay, H., 2018. Effects of rotation on temperature fluctuations in turbulent thermal convection on a hemisphere. *Scientific Reports* 8, 16513.
 221. Miao, R., Xu, H., Skripnik, M., Cui, L., Wang, K., Pedersen, K.G.L., Leijnse, M., Pauly, F., Warnmark, K., Meyhofer, E., Reddy, P., Linke, H., 2018. Influence of Quantum Interference on the Thermoelectric Properties of Molecular Junctions. *Nano Letters*, 1-7.
 222. Mikkelsen, M., Fogarty, T., Busch, T., 2018. Static and dynamic phases of a Tonks–Girardeau gas in an optical lattice. *New Journal of Physics* 20.
 223. Miryeganeh, M., Yamaguchi, M., Kudoh, H., 2018. Synchronisation of Arabidopsis flowering time and wholeplant senescence in seasonal environments. *Scientific Reports* 8.
 224. Miyake, T., Aihara, N., Maeda, K., Shinzato, C., Koyanagi, R., Kobayashi, H., Yamahira, K., 2019. Bloodmeal host identification with inferences to feeding habits of a fish-fed mosquito, *Aedes baisasi*. *Scientific Reports* 9.
 225. Miyazaki, K., Miyazaki, K.W., Yamanaka, A., Tokuda, T., Tanaka, K.F., Doya, K., 2018. Reward probability and timing uncertainty alter the effect of dorsal raphe serotonin neurons on patience. *Nature Communications* 9.

226. Mizoguchi, T., Jaubert, L.D.C., Moessner, R., Udagawa, M., 2018. Magnetic clustering, half-moons, and shadow pinch points as signals of a proximate Coulomb phase in frustrated Heisenberg magnets. *Physical Review B* 98, 1-8.
227. Mochizuki, T., Kojima, Y., Nishiwaki, Y., Harakuni, T., Masai, I., 2018. Endocytic trafficking factor VPS45 is essential for spatial regulation of lens fiber differentiation in zebrafish. *Development* 145, 1-14.
228. Moein, M., Grzyb, K., Goncalves Martins, T., Komoto, S., Peri, F., Crawford, A.D., Fouquier d'Herouel, A., Skupin, A., 2018. CaSiAn: a Calcium Signaling Analyzer tool. *Bioinformatics* 34, 3052-3054.
229. Momohara, Y., Aonuma, H., Nagayama, T., 2018. Tyraminergetic modulation of agonistic outcomes in crayfish. *Journal of Comparative Physiology A Neuroethology, Sensory, Neural, and Behavioral Physiology* 204, 465-473.
230. Monismith, S.G., Barkdull, M.K., Nunome, Y., Mitarai, S., 2018. Transport Between Palau and the Eastern Coral Triangle: Larval Connectivity or Near Misses. *Geophysical Research Letters* 45, 4974-4981.
231. Morandin, C., Brendel, V.P., Sundstrom, L., Helanterä, H., Mikheyev, A.S., 2019. Changes in gene DNA methylation and expression networks accompany caste specialization and age-related physiological changes in a social insect. *Molecular Ecology*.
232. Mori, K., Kuhn, B., 2018. Imaging Ca²⁺ concentration and pH in nanopores/channels of protein crystals. *The Journal of Physical Chemistry* 122, 9646–9653.
233. Morita, M., Siddiqui, N., Katsumura, S., Rouya, C., Larsson, O., Nagashima, T., Hekmatnejad, B., Takahashi, A., Kiyonari, H., Zang, M., St-Arnaud, R., Oike, Y., Giguere, V., Topisirovic, I., Okada-Hatakeyama, M., Yamamoto, T., Sonenberg, N., 2019. Hepatic posttranscriptional network comprised of CCR4-NOT deadenylase and FGF21 maintains systemic metabolic homeostasis. *Proceedings of the National Academy of Sciences USA*.
234. Moroshkin, P., Kono, K., 2019. Zero-phonon lines in the spectra of dysprosium atoms in superfluid helium. *Physics Review B* 99.
235. Moroshkin, P., Kono, K., 2019. Zero-phonon lines in the spectra of dysprosium atoms in superfluid helium. *Physical Review B* 99.
236. Moroshkin, P., Leiderer, P., Kono, K., 2018. Perturbations of a Free Surface of Superfluid Helium by the Ion Wind Produced by a Corona Discharge Above the Liquid. *Journal of Low Temperature Physics*.
237. Moser, D., Lenzner, B., Weigelt, P., Dawson, W., Kreft, H., Pergl, J., Pyšek, P., van Kleunen, M., Winter, M., Capinha, C., Cassey, P., Dullinger, S., Economo, E.P., García-Díaz, P., Guénard, B., Hofhansl, F., Mang, T., Seebens, H., Essl, F., 2018. Remoteness promotes biological invasions on islands worldwide. *PNAS*.

238. Motone, K., Takagi, T., Aburaya, S., Aoki, W., Miura, N., Minakuchi, H., Takeyama, H., Nagasaki, Y., Shinzato, C., Ueda, M., 2018. Protection of coral larvae from thermally induced oxidative stress by redox nanoparticles. *Marine Biotechnology* 20, 542-548.
239. Moussa, M.M., Helal, N.S., Youssef, M.M., 2018. Significance of pSmad2/3 and Smad4 in hepatitis C virus-related liver fibrosis and hepatocellular carcinoma. *APMIS* 126, 477-485.
240. Munis, A.M., Tijani, M., Hassall, M., Mattiuzzo, G., Collins, M.K., Takeuchi, Y., 2018. Characterization of Antibody Interactions with the G Protein of Vesicular Stomatitis Virus Indiana Strain and Other Vesiculovirus G Proteins. *Journal of Virology* 92.
241. Nakagawa, Y.O., Sárosi, G., Ugajin, T., 2018. Chaos and relative entropy. *Journal of High Energy Physics*, 1-45.
242. Nakajima, Y., Chuang, P.-S., Ueda, N., Mitarai, S., 2018. First evidence of asexual recruitment of *Pocillopora acuta* in Okinawa Island using genotypic identification. *PeerJ*, 1-12.
243. Nakamura, M., Nakajima, Y., Watanabe, H.K., Sasaki, T., Yamamoto, H., Mitarai, S., 2018. Spatial variability in recruitment of benthos near drilling sites in the Iheya North hydrothermal field in the Okinawa Trough. *Deep-Sea Research Part I-Oceanographic Research Papers* 135, 65-73.
244. Nakano, H., Miyazawa, H., Maeno, A., Shiroishi, T., Kakui, K., Koyanagi, R., Kanda, M., Satoh, N., Omori, A., Kohtsuka, H., 2018. Correction to: A new species of *Xenoturbella* from the western Pacific Ocean and the evolution of *Xenoturbella*. *BMC Evolutionary Biology* 18, 83.
245. Nakashima, K., 2018. A comparative approach to decipher intestinal animal-microbe associations. *Microbial Cell* 5, 522-524.
246. Nakashima, K., Kikuchi, S., 2018. Chitin-based barrier immunity and its loss predated mucus-colonization by indigenous gut microbiota, *Experimental Medicine (Jikken Igaku)*, pp. 69-72.
247. Nakashima, K., Kimura, S., Ogawa, Y., Watanabe, S., Soma, S., Kaneko, T., Yamada, L., Sawada, H., Tung, C.-H., Lu, T.-M., Yu, J.-K., Villar-Brioners, A., Kikuchi, S., Satoh, N., 2018. Chitin-based barrier immunity and its loss predated mucus-colonization by indigenous gut microbiota. *Nature Communications* 9, 1-13.
248. Nakazawa, K., Sato, G., Kokubun, M., Enoto, T., Fukazawa, Y., Hagino, K., Hayashi, K., Kataoka, J., Katsuta, J., Kobayashi, S.B., Laurent, P., Lebrun, F., Limousin, O., Maier, D., Makishima, K., Mizuno, T., Mori, K., Nakamori, T., Nakano, T., Noda, H., Odaka, H., Ohno, M., Ohta, M., Saito, S., Sato, R., Tajima, H., Takahashi, H., Takahashi, T., Takeda, S.i., Tanaka, T., Terada, Y., Uchiyama, H., Uchiyama, Y., Watanabe, S., Yamaoka, K., Yatsu, Y., Yuasa, T., 2018. Hard

- x-ray imager onboard Hitomi (ASTRO-H). *Journal of Astronomical Telescopes Instruments and Systems* 4, 12.
249. Nakazawa, N., Arakawa, O., Ebe, M., Yanagida, M., 2019. Casein kinase II-dependent phosphorylation of DNA topoisomerase II suppresses the effect of a catalytic topo II inhibitor, ICRF-193, in fission yeast. *Journal of Biological Chemistry* 294, 3772-3782.
 250. Nakazawa, N., Teruya, T., Sajiki, K., Kumada, K., Villar-Briones, A., Arakawa, O., Takada, J., Saitoh, S., Yanagida, M., 2018. The putative ceramide-conjugation protein Cwh43 regulates G0 quiescence, nutrient metabolism and lipid homeostasis in fission yeast. *Journal of cell science* 131.
 251. Narasimha, S., Nagornov, K.O., Menin, L., Mucciolo, A., Rohwedder, A., Humbel, B.M., Stevens, M., Thum, A.S., Tsybin, Y.O., Vijendravarma, R.K., 2019. *Drosophila melanogaster* cloak their eggs with pheromones, which prevents cannibalism. *PLoS Biology* 17.
 252. Nayak, K.P., Sadgrove, M., Yalla, R., Le Kien, F., Hakuta, K., 2018. Nanofiber quantum photonics. *Journal of Optics* 20.
 253. Neiman, Y., 2018. Holographic quantization of linearized higher-spin gravity in the de Sitter causal patch. *Journal of High Energy Physics* 2018, 1-51.
 254. Nieddu, T., Ray, T., Subramonian Rajasree, K.P., Roy, R., Nic Chormaic, S., 2019. Simple, narrow, and robust atomic frequency reference at 993 nm exploiting the rubidium (Rb) 5S_{1/2} to 6S_{1/2} transition using one-color two-photon excitation *Optics Express* 27, 6528-6535.
 255. Nishimura, K., Johmura, Y., Deguchi, K., Jiang, Z., Uchida, K.S.K., Suzuki, N., Shimada, M., Chiba, Y., Hirota, T., Yoshimura, S.H., Kono, K., Nakanishi, M., 2019. Cdk1-mediated DIAPH1 phosphorylation maintains metaphase cortical tension and inactivates the spindle assembly checkpoint at anaphase. *Nature Communications* 10, 981.
 256. Nishitsuji, K., Arimoto, A., Higa, Y., Mekaru, M., Kawamitsu, M., Satoh, N., Shoguchi, E., FY2019. Draft genome of the brown alga, *Nemacystus decipiens*, Onna-1 strain: Fusion of genes involved in the sulfated fucan biosynthesis pathway. *Scientific Reports* 9.
 257. Noda, T., Satoh, N., Asami, T., 2019. Heterochirality results from reduction of maternal diaph expression in a terrestrial pulmonate snail. *Zoological Letters* 5, 1.
 258. Odaka, H., Asai, M., Hagino, K., Koi, T., Madejski, G., Mizuno, T., Ohno, M., Saito, S., Sato, T., Wright, D.H., Enoto, T., Fukazawa, Y., Hayashi, K., Kataoka, J., Katsuta, J., Kawaharada, M., Kobayashi, S.B., Kokubun, M., Laurent, P., Lebrun, F., Limousin, O., Maier, D., Makishima, K., Mimura, T., Miyake, K., Mori, K., Murakami, H., Nakamori, T., Nakano, T., Nakazawa, K., Noda, H.,

- Ohta, M., Ozaki, M., Sato, G., Sato, R., Tajima, H., Takahashi, H., Takahashi, T., Takeda, S.i., Tanaka, T., Tanaka, Y., Terada, Y., Uchiyama, H., Uchiyama, Y., Watanabe, S., Yamaoka, K., Yasuda, T., Yatsu, Y., Yuasa, T., Zoglauer, A., 2018. Modeling of proton-induced radioactivation background in hard X-ray telescopes: Geant4-based simulation and its demonstration by Hitomi's measurement in a low Earth orbit. *Nuclear Instruments & Methods in Physics Research Section a-Accelerators Spectrometers Detectors and Associated Equipment* 891, 92-105.
259. Oka, H., Okada, Y., Hitosugi, T., Fukumura, T., 2018. Two distinct surface terminations of SrVO₃ (001) ultrathin films as an influential factor on metallicity. *Applied Physics Letters* 113, 1-4.
260. Okada, Y., 2018. Broken symmetry and mass acquisition in topological crystalline insulators *Solid State Physics*, p. 11.
261. Okutani, A., Kida, T., Narumi, Y., Shimokawa, T., Honda, Z., Kindo, K., Nakano, T., Nozue, Y., Hagiwara, M., 2018. High-field Magnetism of the Honeycomb-lattice Antiferromagnet Cu₂(pymca)₃(ClO₄). *Journal of the Physical Society of Japan* 88, 1-5.
262. Ono, L.K., Hawash, Z., Juarez-Perez, E.J., Qiu, L., Jiang, Y., Qi, Y., 2018. Photodecomposition and thermal decomposition in methylammonium halide lead perovskites and inferred design principles to increase photovoltaic device stability. *Journal of Materials Chemistry A* 6, 9604-9612.
263. Ono, L.K., Hawash, Z., Juarez-Perez, E.J., Qiu, L., Jiang, Y., Qi, Y., 2018. The influence of secondary solvents on the morphology of a spiro-MeOTAD hole transport layer for lead halide perovskite solar cells. *Journal of Physics D: Applied Physics* 51, 1-13.
264. Ono, L.K., Qi, Y., Liu, S., 2018. Progress toward Stable Lead Halide Perovskite Solar Cells. *Joule* 2, 1961-1990.
265. Orita, T., Koyama, A., Yoshino, M., Kamada, K., Yoshikawa, A., Shimazoe, K., Sugawara, H., 2018. The current mode Time-over-Threshold ASIC for a MPPC module in a TOF-PET system. *Nuclear Instruments & Methods in Physics Research Section a-Accelerators Spectrometers Detectors and Associated Equipment* 912, 303-308.
266. Palmer, S.R., Ren, Z., Hwang, G., Liu, Y., Combs, A., Soderstrom, B., Vasquez, P.L., Khosravi, Y., Brady, L.J., Koo, H., Stoodley, P., 2019. Streptococcus mutans yidC1 and yidC2 Impact cell envelope biogenesis, the biofilm matrix, and biofilm biophysical properties. *J Bacteriol* 201.
267. Parisi, G.I., Tani, J., Weber, C., Wermter, S., 2018. Lifelong Learning of Spatiotemporal Representations With Dual-Memory Recurrent Self-Organization. *Frontiers in Neurorobotics* 12.

268. Park, N.-G., Huang, J., Qi, Y., 2018. Themed issue on perovskite solar cells: research on metal halide perovskite solar cells towards deeper understanding, upscalable fabrication, long-term stability and Pb-free alternatives. *Sustainable Energy & Fuels* 2, 2378-2380.
269. Patil, P., Filonenko, G., Lapointe, S., Fayzullin, R.R., Khusnutdinova, J., 2018. Interplay between the Conformational Flexibility and Photoluminescent Properties of Mononuclear Pyridinophanecopper(I) Complexes. *Inorganic Chemistry* 57, 10009-10027.
270. Pigolotti, S., Cencini, M., Molina, D., Munoz, M.A., 2018. Stochastic Spatial Models in Ecology: A Statistical Physics Approach. *Journal of Statistical Physics* 172, 44-73.
271. Poetsch, A.R., Boulton, S.J., Luscombe, N.M., 2018. Genomic landscape of oxidative DNA damage and repair reveals regioselective protection from mutagenesis. *Genome Biology* 19, 215.
272. Qi, Y., 2019. A redox shuttle imparts operational durability to perovskite solar cells. *Sci Bull* 64, 224-226.
273. Qiu, L., Liu, Z., Ono, L.K., Jiang, Y., Son, D.-Y., Hawash, Z., He, S., Qi, Y., 2018. Scalable fabrication of stable high efficiency perovskite solar cells and modules utilizing room temperature sputtered SnO₂ electron transport layer. *Advanced Functional Materials* 2018, 1-9.
274. Remeika, M., Qi, Y., 2018. Scalable solution coating of the absorber for perovskite solar cells. *Journal of Energy Chemistry* 27, 1101-1110.
275. Reshodko, I., Benseny C., A., Romhányi, J., Busch, T., 2019. Topological states in the Kronig–Penney model with arbitrary scattering potentials. *New Journal of Physics* 21.
276. Richter, A., Keller, R.A., Rosumekd, F.B., Economo, E.P., Hita Garcia, F., Beutel, R.G., 2019. The cephalic anatomy of workers of the ant species *Wasmannia affinis* (Formicidae, Hymenoptera, Insecta) and its evolutionary implications. *Arthropod Structure & Development* 49, 26-49.
277. Romhányi, J., 2019. Multipolar edge states in the anisotropic kagome antiferromagnet. *Physical Review B* 99, 014408.
278. Roome, C.J., Kuhn, B., 2018. Simultaneous dendritic voltage and calcium imaging and somatic recording from Purkinje neurons in awake mice. *Nature Communications* 9, 3388.
279. Ross, S.R.P.J., Hita Garcia, F., Fischer, G., Peters, M.K., 2018. Selective logging intensity in an East African rain forest predicts reductions in ant diversity. *Biotropica* 0, 1-11.

280. Sabuwala, T., Butcher, C., Gioia, G., Chakraborty, P., 2018. Ray Systems in Granular Cratering. *Physical Review Letters* 120, 1-5.
281. Sachdeva, R., Metz, F., Singh, M., Mishra, T., Busch, T., 2018. Two-leg-ladder Bose-Hubbard models with staggered fluxes. *Physical Review A* 98, 1-8.
282. Saeki, T., Maeda, K., Naruse, T., 2018. Taxonomy and morphology of *Macrobrachium placidulum* species-group (Crustacea: Decapoda: Caridea: Palaemonidae) from the Ryukyu Archipelago, *Fauna Ryukyuana*, pp. 33-53.
283. Saito, S., Ozawa, H., Fujioka, M., Hikishima, K., Hata, J., Kurihara, S., Okano, H.J., Ogawa, K., 2018. Visualization of nerve fibers around the carotid bifurcation with use of a 9.4 Tesla microscopic magnetic resonance diffusion tensor imaging with tractography. *Head Neck* 40, 2228-2234.
284. Sajiki, K., Tahara, Y., Uehara, L., Sasaki, T., Pluskal, T., Yanagida, M., 2018. Genetic regulation of mitotic competence in G0 quiescent cells. *Science Advances* 4.
285. Sarbajna, A., Patil, P.H., Dinh, M.H., Gladkovskaya, O., Fayzullin, R.R., Lapointe, S., Khaskin, E., Khusnutdinova, J.R., 2019. Facile and reversible double dearomatization of pyridines in non-phosphine Mn-I complexes with N,S-donor pyridinophane ligand. *Chemical Communications* 55, 3282-3285.
286. Sato, K.N., Andersson, A.J., Day, J.M.D., Taylor, J.R.A., Frank, M.B., Jung, J.-Y., McKittrick, J., Levin, L.A., 2018. Response of Sea Urchin Fitness Traits to Environmental Gradients Across the Southern California Oxygen Minimum Zone. *Frontiers in Marine Science* 5, 1-15.
287. Satoh, N., 2018. Transgenic Ascidians Foreword, in: Sasakura, Y. (Ed.), *Transgenic Ascidians*. Springer-Verlag Singapore Pte Ltd, Singapore, pp. V-VI.
288. Saze, H., 2018. Epigenetic regulation of intragenic transposable elements: A two-edged sword. *The Journal of Biochemistry*, 1-6.
289. Scheffrahn, R.H., Bourguignon, T., Akama, P.D., Sillam-Dussès, D., Šobotník, J., 2018. *Roisinitermes ebogoensis* gen. & sp. n., an outstanding drywood termite with snapping soldiers from Cameroon (Isoptera, Kalotermitidae). *ZooKeys* 787, 91-105.
290. Schloss, J., O’Riordan, L.J., 2018. GPUE: Graphics Processing Unit Gross–Pitaevskii Equation solver. *The Journal of Open Source Software* 3, 1-3.
291. Schnedler-Meyer, N.A., Pigolotti, S., Mariani, P., 2018. Evolution of Complex Asexual Reproductive Strategies in Jellyfish. *American Naturalist* 192, 72-80.
292. Schönke, J., Fried, E., 2018. Single degree of freedom everting ring linkages with nonorientable topology. *Proceedings of the National Academy of Science USA* 116, 90-95.

293. Schönke, J., Fried, E., 2019. Single degree of freedom everting ring linkages with nonorientable topology. *Proceedings of the National Academy of Sciences of the United States of America* 116, 90-95.
294. Sekigami, Y., Kobayashi, T., Omi, A., Nishitsuji, K., Ikuta, T., Fujiyama, A., Satoh, N., Saiga, H., 2019. Note to: Hox gene cluster of the ascidian, *Halocynthia roretzi*, reveals multiple ancient steps of cluster disintegration during ascidian evolution. *Zoological Letters* 5, 1-3.
295. Shabani, P., Izadpanah, S., Aghebati-Maleki, A., Baghbani, E., Baghbanzadeh, A., Fotouhi, A., Bakhshinejad, B., Aghebati-Maleki, L., Baradaran, B., 2019. Role of miR-142 in the pathogenesis of osteosarcoma and its potential as therapeutic approach. *Journal of Cell Biochemistry* 120, 4783-4793.
296. Shah, P., Dissanayake, S.T.M., Fujita, Y., Nunes, P.A.L.D., 2019. Impact of a local, coastal community based management regime when defining marine protected areas: Empirical results from a study in Okinawa, Japan. *PLoS One*.
297. Shea, D.J., Shimizu, M., Itabashi, E., Miyaji, N., Miyazaki, J., Osabe, K., Kaji, M., Okazaki, K., Fujimoto, R., 2018. Genome re-sequencing, SNP analysis, and genetic mapping of the parental lines of a commercial F1 hybrid cultivar of Chinese cabbage. *Breeding Science* 68, 375-380.
298. Shibata, H., Chijiwa, T., Oda-Ueda, N., Nakamura, H., Yamaguchi, K., Hattori, S., Matsubara, K., Matsuda, Y., Yamashita, A., Isomoto, A., Mori, K., Tashiro, K., Kuhara, S., Yamasaki, S., Fujie, M., Goto, H., Koyanagi, R., Takeuchi, T., Fukumaki, Y., Ohno, M., Shoguchi, E., Hisata, K., Satoh, N., Ogawa, T., 2018. The habu genome reveals accelerated evolution of venom protein genes. *Scientific Reports* 8, 1-11.
299. Shimada, H., Takahashi, K., Ueda, H.T., 2018. Quantum interactions of topological solitons from electrodynamics. *Physical Review B* 97, 16.
300. Shindou, T., Ochi-Shindou, M., Murayama, T., Momohara, Y., Saita, E.-i., Wickens, J.R., Maruyama, I.N., 2019. Active propagation of dendritic electrical signals in *C. elegans*. *Scientific Reports*.
301. Shindou, T., Shindou, M., Watanabe, S., Wickens, J., 2018. A silent eligibility trace enables dopamine-dependent synaptic plasticity for reinforcement learning in the mouse striatum. *European Journal of Neuroscience*.
302. Shintake, T., 2018. *New Wave Energy, Clean Energy*, pp. 14-19.
303. Shirai, Y.-T., Mizutani, A., Nishijima, S., Horie, M., Kikuguchi, C., Elisseeva, O., Yamamoto, T., 2018. CNOT3 targets negative cell cycle regulators in non-small cell lung cancer development. *Oncogene*.
304. Shiraishi, A., Okuda, T., Miyasaka, N., Osugi, T., Okuno, Y., Inoue, J., Satake, H., 2019. Repertoires of G protein-coupled receptors for *Ciona*-specific

neuropeptides. Proceedings of the National Academy of Sciences of the United States of America.

305. Shoemark, D.K., Adams, J.C., Ziegler, B., Strompen, J., Özbek, S., Watanabe, H., Tucker, R.P., 2019. Emergence of a thrombospondin superfamily at the origin of metazoans. *Molecular Biology and Evolution*.
306. Shoguchi, E., 2018. Molecular biology of diverse symbiotic dinoflagellate *Symbiodinium*, *The Japanese Journal of Phycology* (Sôrui), pp. 169-172.
307. Shoguchi, E., Beedessee, G., Tada, I., Hisata, K., Kawashima, T., Takeuchi, T., Arakaki, N., Fujie, M., Koyanagi, R., Roy, M.C., Kawachi, M., Hidaka, M., Satoh, N., Shinzato, C., 2018. Two divergent *Symbiodinium* genomes reveal conservation of a gene cluster for sunscreen biosynthesis and recently lost genes. *BMC Genomics* 19.
308. Sibille, R., Gauthier, N., Yan, H., Ciomaga Hatnean, M., Ollivier, J., Winn, B., Filges, U., Balakrishnan, G., Kenzelmann, M., Shannon, N., Fennell, T., 2018. Experimental signatures of emergent quantum electrodynamics in Pr₂Hf₂O₇. *Nature Physics*.
309. Sieveritz, B., Garcia-Munoz, M., Arbuthnott, G.W., 2019. Thalamic afferents to prefrontal cortices from ventral motor nuclei in decision-making. *European Journal of Neuroscience* 49, 646-657.
310. Smith, A.B., Godsoe, W., Rodríguez-Sánchez, F., Wang, H.-H., Warren, D., 2018. Niche estimation above and below the species level. *Trends in Ecology & Evolution* 34, 260-273.
311. Soderstrom, B., Badrutdinov, A., Chan, H., Skoglund, U., 2018. Cell shape-independent FtsZ dynamics in synthetically remodeled bacterial cells. *Nature Communications* 9, 4323.
312. Soderstrom, B., Chan, H., Daley, D.O., 2019. Super-resolution images of peptidoglycan remodelling enzymes at the division site of *Escherichia coli*. *Current genetics* 65, 99-101.
313. Soeda, S., Yamada-Nomoto, K., Michiue, T., Ohsugi, M., 2018. RSK-MASTL Pathway Delays Meiotic Exit in Mouse Zygotes to Ensure Paternal Chromosome Stability. *Developmental Cell* 47, 363-+.
314. Souto-Vilaros, D., Proffit, M., Buatois, B., Rindos, M., Sisol, M., Kuyaiva, T., Isua, B., Michalek, J., Darwell, C.T., Hossaert-McKey, M., Weiblen, G.D., Novotny, V., Segar, S.T., 2018. Pollination along an elevational gradient mediated both by floral scent and pollinator compatibility in the fig and fig-wasp mutualism. *Journal of Ecology* 106, 2256-2273.
315. Staab, M., Hita Garcia, F., Liu, C., Xu, Z.-H., Economo, E.P., 2018. Systematics of the ant genus *Proceratium* Roger (Hymenoptera, Formicidae, Proceratiinae) in

China – with descriptions of three new species based on micro-CT enhanced next-generation-morphology. *ZooKeys* 770, 137-192.

316. Steele, A.J., Denaxas, S.C., Shah, A.D., Hemingway, H., Luscombe, N.M., 2018. Machine learning models in electronic health records can outperform conventional survival models for predicting patient mortality in coronary artery disease. *PLoS One* 13, 20.
317. Stefani, D., Weiland, K.J., Skripnik, M., Hsu, C., Perrin, M.L., Mayor, M., Pauly, F., van der Zant, H.S.J., 2018. Large Conductance Variations in a Mechanosensitive Single-Molecule Junction. *Nano Letters* 18, 5981-5988.
318. Stoltenberg, H., 2018. Properties of the (un)complexity of subsystems. *Proceedings of the National Academy of Science USA* 98.
319. Stourm, E., Zhang, Y., Lepers, M., Guerout, R., Robert, J., Nic Chormaic, S., Molmer, K., Brion, E., 2019. Spontaneous emission of a sodium Rydberg atom close to an optical nanofibre. *Journal of Physics B: Atomic, Molecular and Optical Physics* 52, 045503.
320. Sugita, Y., Matsunami, H., Kawaoka, Y., Noda, T., Wolf, M., 2018. Cryo-EM structure of the Ebola virus nucleoprotein-RNA complex at 3.6 Å resolution. *Nature* 563, 137-140.
321. Suma, M., Kitagawa, T., Nakase, Y., Nakazawa, N., Yanagida, M., Matsumoto, T., 2018. Fission Yeast CENP-C (Cnp3) Plays a Role in Restricting the Site of CENP-A Accumulation. *G3: Genes, Genomes, Genetics* 8, 2723-2733.
322. Suzuki, K.G.N., Ando, H., Komura, N., Fujiwara, T., Kiso, M., Kusumi, A., 2018. Unraveling of lipid raft organization in cell plasma membranes by single-molecule imaging of ganglioside probes. *Advances in Experimental Medicine and Biology* 1104, 41-58.
323. Suzuki, T., Kikuguchi, C., Nishijima, S., Nagashima, T., Takahashi, A., Okada, M., Yamamoto, T., 2019. Postnatal liver functional maturation requires Cnot complex-mediated decay of mRNAs encoding cell cycle and immature liver genes. *Development* 146, 1-15.
324. Tajima, H., Watanabe, S., Fukazawa, Y., Blandford, R., Enoto, T., Goldwurm, A., Hagino, K., Hayashi, K., Ichinohe, Y., Kataoka, J., Katsuta, J.i., Kitaguchi, T., Kokubun, M., Laurent, P., Lebrun, F., Limousin, O., Madejski, G.M., Makishima, K., Mizuno, T., Mori, K., Nakamori, T., Nakano, T., Nakazawa, K., Noda, H., Odaka, H., Ohno, M., Ohta, M., Saito, S., Sato, G., Sato, R., Takeda, S.i., Takahashi, H., Takahashi, T., Tanaka, T., Tanaka, Y., Terada, Y., Uchiyama, H., Uchiyama, Y., Yamaoka, K., Yatsu, Y., Yonetoku, D., Yuasao, T., 2018. Design and performance of Soft Gamma-ray Detector onboard the Hitomi (ASTRO-H) satellite. *Journal of Astronomical Telescopes Instruments and Systems* 4, 14.

325. Takahashi, S., Osabe, K., Fukushima, N., Takuno, S., Miyaji, N., Shimizu, M., Takahashi-Yasuda, T., Suzuki, Y., Deniss, E.S., Seki, M., Ryo, F., 2018. Genome-wide characterization of DNA methylation, small RNA expression, and histone H3 lysine nine di-methylation in *Brassica rapa* L. *DNA Research*, 1-10.
326. Takahashi, T., Kokubun, M., Mitsuda, K., Kelley, R.L., Ohashi, T., Aharonian, F., Akamatsu, H., Akimoto, F., Allen, S.W., Anabuki, N., Angelini, L., Arnaud, K., Asai, M., Audard, M., Awaki, H., Axelsson, M., Azzarello, P., Baluta, C., Bamba, A., Bando, N., Bautz, M.W., Bialas, T., Blandford, R., Boyce, K., Brenneman, L.W., Brown, G.V., Bulbul, E., Cackett, E.M., Canavan, E., Chernyakova, M., Chiao, M.P., Coppi, P.S., Costantini, E., Dell, S.O., DiPirro, M., Done, C., Dotani, T., Doty, J., Ebisawa, K., Eckart, M.E., Enoto, T., Ezoe, Y., Fabian, A.C., Ferrigno, C., Foster, A.R., Fujimoto, R., Fukazawa, Y., Funk, S., Furuzawa, A., Galeazzi, M., Gallo, L.C., Gandhi, P., Gilmore, K., Giustini, M., Goldwurm, A., Gu, L.Y., Guainazzi, M., Haas, D., Haba, Y., Hagino, K., Hamaguchi, K., Harrus, I.M., Hatsukade, I., Hayashi, T., Hayashi, K., Hayashida, K., den Herder, J.W., Hiraga, J.S., Hirose, K., Hornschemeier, A., Hoshino, A., Hughes, J.P., Ichinohe, Y., Iizuka, R., Inoue, H., Inoue, Y., Ishibashi, K., Ishida, M., Ishikawa, K., Ishimura, K., Ishisaki, Y., Itoh, M., Iwai, M., Iwata, N., Iyomoto, N., Jewell, C., Kaastra, J., Kallman, T., Kamae, T., Kara, E., Kataoka, J., Katsuda, S., Katsuta, J., Kawaharada, M., Kawai, N., Kawano, T., Kawasaki, S., Khangulyan, D., Kilbourne, C.A., Kimball, M., King, A., Kitaguchi, T., Kitamoto, S., Kitayama, T., Kohmura, T., Konami, S., Kosaka, T., Koujelev, A., Koyama, K., Koyama, S., Kretschmar, P., Krimm, H.A., Kubota, A., Kunieda, H., Laurent, P., Lee, S.H., Leutenegger, M.A., Limousin, O., Loewenstein, M., Long, K.S., Lumb, D., Madejski, G., Maeda, Y., Maier, D., Makishima, K., Markevitch, M., Masters, C., Matsumoto, H., Matsushita, K., McCammon, D., McGuinness, D., McNamara, B.R., Mehdipour, M., Miko, J., Miller, E.D., Miller, J.M., Mineshige, S., Minesugi, K., Mitsuiishi, I., Miyazawa, T., Mizuno, T., Mori, H., Mori, K., Moroso, F., Moseley, H., Muench, T., Mukai, K., Murakami, H., Murakami, T., Mushotzky, R.F., Nagano, H., Nagino, R., Nakagawa, T., Nakajima, H., Nakamori, T., Nakano, T., Nakashima, S., Nakazawa, K., Namba, Y., Natsukari, C., Nishioka, Y., Nobukawa, K.K., Nobukawa, M., Noda, H., Nomachi, M., Odaka, H., Ogawa, H., Ogawa, M., Ogi, K., Ohno, M., Ohta, M., Okajima, T., Okamoto, A., Okazaki, T., Ota, N., Ozaki, M., Paerels, F., Paltani, S., Parmar, A., Petre, R., Pinto, C., de Plaa, J., Pohl, M., Pontius, J., Porter, F.S., Pottschmidt, K., Ramsey, B., Reynolds, C., Russell, H., Safi-Harb, S., Saito, S., Sakai, K., Sakai, S., Sameshima, H., Sasaki, T., Sato, G., Sato, K., Sato, R., Sato, Y., Sawada, M., Schartel, N., Serlemitsos, P.J., Seta, H., Shibano, Y., Shida, M., Shidatsu, M., Shimada, T., Shinozaki, K., Shirron, P., Simionescu, A., Simmons, C., Smith, R.K., Sneiderman, G., Soong, Y., Stawarz, L., Sugawara, Y., Sugita, S., Sugita, H., Szymkowiak, A., Tajima, H., Takahashi, H., Takeda, S., Takei, Y., Tamagawa, T., Tamura, T., Tamura, K.,

- Tanaka, T., Tanaka, Y., Tanaka, Y.T., Tashiro, M.S., Tawara, Y., Terada, Y., Terashima, Y., Tombesi, F., Tomida, H., Tsuboi, Y., Tsujimoto, M., Tsunemi, H., Tsuru, T.G., Uchida, H., Uchiyama, H., Uchiyama, Y., Ueda, S., Ueda, Y., Ueno, S., Uno, S., Urry, C.M., Ursino, E., de Vries, C.P., Wada, A., Watanabe, S., Watanabe, T., Werner, N., Wik, D.R., Wilkins, D.R., Williams, B.J., Yamada, S., Yamada, T., Yamaguchi, H., Yamaoka, K., Yamasaki, N.Y., Yamauchi, M., Yamauchi, S., Yaqoob, T., Yatsu, Y., Yonetoku, D., Yoshida, A., Yuasa, T., Zhuravleva, I., Zoghbi, A., 2018. Hitomi (ASTRO-H) X-ray Astronomy Satellite. *Journal of Astronomical Telescopes Instruments and Systems* 4, 13.
327. Takashina, N., Beger, M., Kusumoto, B., Rathnayake, S., Possingham, H.P., 2018. A theory for ecological survey methods to map individual distributions. *Theoretical Ecology* 11, 213-223.
328. Takashina, N., Kusumoto, B., Beger, M., Rathnayake, S., Possingham, H.P., 2018. Spatially explicit approach to estimation of total population abundance in field surveys. *Journal of Theoretical Biology* 453, 88-95.
329. Takashina, N., Kusumoto, B., Kubota, Y., Economo, E.P., 2019. A geometric approach to scaling individual distributions to macroecological patterns. *Journal of Theoretical Biology* 461, 170-188.
330. Takayanagi, T., Ugajin, T., Umemoto, K., 2018. Towards an entanglement measure for mixed states in CFTs based on relative entropy. *Journal of High Energy Physics*, 31.
331. Takebe, H., Shirasawa, K., Fujita, J., Misumi, S., Shintake, T., 2018. Development of OIST Wave Energy Converter Monitoring System for Maldives Island Experiment. *Journal of Energy and Power Engineering* 12, 375-384.
332. Takeda, S.i., Katsuragawa, M., Orita, T., Moriyama, F., Arai, Y., Sugawara, H., Oshita, S., Yabu, G., Watanabe, S., Takahashi, T., Furenlid, L.R., 2018. A high-resolution CdTe imaging detector with multi-pinhole optics for in-vivo molecular imaging. *Nuclear Instruments & Methods in Physics Research Section a-Accelerators Spectrometers Detectors and Associated Equipment* 912, 57-60.
333. Takeuchi, T., Plasseraud, L., Ziegler-Devin, I., Brosse, N., Shinzato, C., Satoh, N., Marin, F., 2018. Biochemical characterization of the skeletal matrix of the massive coral, *Porites australiensis* – The saccharide moieties and their localization. *Journal of Structural Biology*.
334. Tang, Q., Bourguignon, T., Willenmse, L., De Coninck, E., Evans, T., 2019. Global spread of the German cockroach, *Blattella germanica*. *Biol Invasions* 21, 693-707.
335. Tani, J., 2018. Understanding of consciousness and free will from neurorobotics studies. , in: 平井靖史・藤田尚志・安孫子信 (Ed.), *Reconsidering "Material*

and memory" -- Development of the extended Bergson's thoughts Shoshi Shinsui, Tokyo, Japan.

336. Teruya, T., Chaleckis, R., Takada, J., Yanagida, M., Kondoh, H., 2019. Diverse metabolic reactions activated during 58-hr fasting are revealed by non-targeted metabolomic analysis of human blood. *Scientific Reports* 9, 854.
337. Tijani, M., Munis, A.M., Perry, C., Sanber, K., Ferrareso, M., Mukhopadhyay, T., Themis, M., Nisoli, I., Mattiuzzo, G., Collins, M.K., Takeuchi, Y., 2018. Lentivector Producer Cell Lines with Stably Expressed Vesiculovirus Envelopes. *Molecular Therapy - Methods & Clinical Development* 10, 303-312.
338. Tokuda, T., Yoshimoto, J., Shimizu, Y., Okada, G., Takamura, M., Okamoto, Y., Yamawaki, S., Doya, K., 2018. Identification of depression subtypes and relevant brain regions using a data-driven approach. *Scientific Reports* 8.
339. Tominaga, H., Satoh, N., Ueno, N., Takahashi, H., 2018. Enhancer activities of amphioxus Brachyury genes in embryos of the ascidian, *Ciona intestinalis*. *Genesis* 56, 1-12.
340. Tsai, H.-F., Gajdac, J., Sloan, T., Rarese, A., Shen, A.Q., 2019. Usiigaci: Label-free instance-aware cell tracking under phase contrast microscopy using machine learning. *SoftwareX* 9, 230-237.
341. Tsai, H.-F., Toda-Peters, K., Shen, A.Q., 2019. Glioblastoma adhesion in a quick-fit hybrid microdevice. *cell biology, engineering* 21, 1-14.
342. Tsai, H.-F., Toda-Peters, K., Shen, A.Q., 2019. Glioblastoma adhesion in a quick-fit hybrid microdevice. *Biomed Microdevices* 21, 30.
343. Tsunoyama, T.A., Watanabe, Y., Goto, J., Naito, K., Kasai, R.S., Suzuki, K.G.N., Fujiwara, T.K., Kusumi, A., 2018. Super-long single-molecule tracking reveals dynamic-anchorage-induced integrin function. *Nature Chemical Biology* 14, 497-506.
344. Tsutsumi, H., Katsuyama, Y., Izumikawa, M., Takagi, M., Fujie, M., Satoh, N., Shinya, K., Ohnishi, Y., 2018. Unprecedented Cyclization Catalyzed by a Cytochrome P450 in Benzastatin Biosynthesis. *Journal of American Chemical Society* 140, 6631-6639.
345. Tsvietkova, A., 2019. Simplicial volume of links from link diagrams. *Mathematical Proceedings Cambridge Philosophical Society* 166 75-81.
346. Tsvietkova, A., 2019. Determining isotopy classes of crossing arcs in alternating links. *Asian Journal of Mathematics* 22, 1005 – 1024.
347. Tupec, M., Buček, A., Janoušek, V., Vogel, H., Prchalová, D., Kindl, J., Pavlíčková, T., Wenzelová, P., Jahn, U., Valterová, I., Pichová, I., 2019. Expansion of the fatty acyl reductase gene family shaped pheromone communication in Hymenoptera. *eLife* 8, e39231.

348. Turkevych, I., Kazaoui, S., Belich, N.A., Grishko, A.Y., Fateev, S.A., Petrov, A.A., Urano, T., Aramaki, S., Kosar, S., Kondo, M., Goodilin, E.A., Graetzel, M., Tarasov, A.B., 2019. Strategic advantages of reactive polyiodide melts for scalable perovskite photovoltaics. *Nature Nanotechnology* 14, 57-63.
349. Uchiyama, Y., Odani, S., Kashima, M., Kamidaira, Y., Mitarai, S., 2018. Influences of the Kuroshio on Interisland Remote Connectivity of Corals Across the Nansei Archipelago in the East China Sea. *Journal of Geophysical Research-Oceans* 123, 9245-9265.
350. Ueki, T., Fujie, M., Rmaidi, Satoh, N., 2019. Symbiotic bacteria associated with ascidian vanadium accumulation identified by 16S rRNA amplicon sequencing. *Marine Genomics* 43, 33-42.
351. Usui, A., Buca, B., Mur-Petit, J., 2018. Quantum probe spectroscopy for cold atomic systems. *New Journal of Physics* 20, 10.
352. Villar Briones, A., Aird, S.D., 2018. Organic and Peptidyl Constituents of Snake Venoms: The Picture Is Vastly More Complex Than We Imagined. *Toxins* 10, 392.
353. Vrieler, N., Loyola, S., Yarden-Rabinowitz, Y., Hoogland, T.M., De Zeeuw, C.I., De Schutter, E., Torben-Nielsen, B., Uusisaari, M.Y., 2019. Variability and directionality of inferior olive neuron dendrites revealed by detailed 3D characterization of an extensive morphological library. *Brain Structure and Function*, 1-19.
354. Wang, B., Tanaka, K., Ninomiya, Y., Maruyama, K., Vares, G., Katsube, T., Murakami, M., Liu, C., Fujimori, A., Fujita, K., Liu, Q., Eguchi-Kasai, K., Neno, M., 2018. Increased Hematopoietic Stem Cells/Hematopoietic Progenitor Cells Measured as Endogenous Spleen Colonies in Radiation-Induced Adaptive Response in Mice (Yonezawa Effect). *Dose Response* 16.
355. Wang, M., Bucek, A., Sobotonik, J., Sillam-Dussès, D., Evans, T.A., Roisin, Y., Lo, N., Bourguignon, T., 2018. Historical biogeography of the termite clade Rhinotermitinae (Blattodea: Isoptera). *Molecular Phylogenetics and Evolution* 132, 100-104.
356. Wang, M., Huang, S., Li, M., McKey, D., Zhang, L., 2019. Staminodes influence pollen removal and deposition rates in nectar-rewarding self-incompatible *Phanera yunnanensis* (Caesalpinioideae). *J Trop Ecol* 35, 34-42.
357. Wang, Q., Jiang, S., Qiu, L., Qian, J., Ono, L.K., Leyden, M.R., Wang, X., Shi, Y., Zheng, Y., Qi, Y., Li, Y., 2018. Interfacial Flat-Lying Molecular Monolayers for Performance Enhancement in Organic Field-Effect Transistors. *ACS Applied Material Interfaces* 10, 22513-22519.
358. Wang, S., Sakurai, T., Wen, W., Qi, Y., 2018. Energy Level Alignment at Interfaces in Metal Halide Perovskite Solar Cells. *Advanced Materials Interfaces* 5, 30.

359. Wang, X., Yu, Y., Wang, S., Ward, J.M., Nic Chormaic, S., 2018. Single mode green lasing and multicolor luminescent emission from an Er³⁺-Yb³⁺ co-doped compound fluorosilicate glass microsphere resonator OSA Continuum 1, 261-273.
360. Wang, Y., Rosenbaum, T.F., Palmer, A., Ren, Y., Kim, J.W., Mandrus, D., Feng, Y., 2018. Strongly-coupled quantum critical point in an all-in-all-out antiferromagnet. Nature Communications 9, 2953.
361. Wang, Z., Okada, Y., O'Neal, J., Zhou, W., Walkup, D., Dhital, C., Hogan, T., Clancy, P., Kim, Y.-J., Hu, Y.F., Santos, L.H., Wilson, S.D., Trivedi, N., Madhavan, V., 2018. Disorder induced power-law gaps in an insulator–metal Mott transition. Proceedings of the National Academy of Sciences of the USA 115, 11198-11202.
362. Ward, J.M., Yang, Y., Lei, F., Yu, X.-C., Xiao, Y.-F., Nic Chormaic, S., 2018. Nanoparticle sensing beyond evanescent field interaction with a quasi-droplet microcavity. Optica 5, 674-677.
363. Warren, D.L., Beaumont, L.J., Dinnage, R., Baumgartner, J.B., 2019. New methods for measuring ENM breadth and overlap in environmental space. Ecography 42, 444-446.
364. Watson, B.N.J., Easingwood, R.A., Tong, B., Wolf, M., Salmond, G.P.C., Staals, R.H.J., Bostina, M., Fineran, P.C., 2019. Different genetic and morphological outcomes for phages targeted by single or multiple CRISPR-Cas spacers. Philosophical Transactions of the Royal Society London B Biological Science 374.
365. Watson, B.N.J., Easingwood, R.A., Tong, B., Wolf, M., Salmond, G.P.C., Staals, R.H.J., Bostina, M.a.F., P. C. , 2019. Different genetic and morphological outcomes for phages targeted by single or multiple CRISPR-Cas spacers. The Royal Society Publishing 374, 11.
366. Weber, C.P., Masten, M.G., Ogloza, T.C., Berggren, B.S., Man, M.K.L., Dani, K.M., Liu, J., Mao, Z., Klug, D.D., Adeleke, A.A., Yao, Y., 2018. Using coherent phonons for ultrafast control of the Dirac node of SrMnSb₂. Physical Review B 98, 15515.
367. Weber, C.P., Schoop, L.M., Parkin, S.S.P., Newby, R.C., Neteprov, A., Lotsch, B., Mariserla, B.M.K., Kim, M.J., Dani, K.M., Bechtel, H.A., Ali, M., 2018. Directly photoexcited Dirac and Weyl fermions in ZrSiS and NbAs Applied Physics Letters 113.
368. White, J., 2018. Dreyfus on the “Fringe”: information processing, intelligent activity, and the future of thinking machines. AI & Society 33, 1-12.
369. Wong, E.L., Winchester, A.J., Pareek, V., Madéo, J., Man, M.K.L., Dani, K.M., 2018. Pulling apart photoexcited electrons by photoinducing an in-plane surface electric field. Science Advances 4, 1-7.

370. Wu, L.-W., Bourguignon, T., Šobotník, J., Wen, P., Liang, W.-R., Li, H.-F., 2018. Phylogenetic position of the enigmatic termite family Stylotermitidae (Insecta : Blattodea). *Invertebrate Systematics* 32, 1111-1117.
371. Wu, Z., Liu, Z., Hu, Z., Hawash, Z., Qiu, L., Jiang, Y., Ono, L.K., Qi, Y., 2019. Highly Efficient and Stable Perovskite Solar Cells via Modification of Energy Levels at the Perovskite/Carbon Electrode Interface. *Advanced Materials* 31.
372. Xu, X., Kanai, R., Nakazawa, N., Wang, L., Toyoshima, C., Yanagida, M., 2018. Suppressor mutation analysis combined with 3D modeling explains cohesin's capacity to hold and release DNA. *Proceedings of the National Academy of Science USA* 115, E4833-E4842.
373. Xu, X., Yanagida, M., 2019. Isolation of Fission Yeast Condensin Temperature-Sensitive Mutants with Single Amino Acid Substitutions Targeted to Hinge Domain. *G3 (Bethesda)*.
374. Yamada, I., Yoshino, N., Hikishima, K., Sakamoto, J., Yokokawa, M., Oikawa, Y., Harada, H., Kurabayashi, T., Saida, Y., Tateishi, U., Yukimori, A., Izumo, T., Asahina, S., 2018. Oral carcinoma: Clinical evaluation using diffusion kurtosis imaging and its correlation with histopathologic findings. *Magnetic Resonance Imaging* 51, 69-78.
375. Yamashina, F., Takeuchi, Y., Fukunaga, K., Udagawa, S., Suan Tan, E., Byun, J., Yamauchi, C., Takemura, A., 2019. Daily expression of a clock gene in the brain and pituitary of the Malabar grouper (*Epinephelus malabaricus*). *General and comparative endocrinology*.
376. Yan, H., Pohle, R., Shannon, N., 2018. Half moons are pinch points with dispersion. *Physical Review B* 98, 1-5.
377. Yanagihara, S., Yazaki-Sugiyama, Y., 2018. Social interaction with a tutor modulates responsiveness of specific auditory neurons in juvenile zebra finches. *Behavioural Processes*.
378. Yao, X.L., Wang, X.Y., Simpson, C., Paterno, G.M., Guizzard, M., Wagner, M., Cerullo, G., Scotognella, F., Watson, M.D., Narita, A., Mullen, K., 2019. Regioselective hydrogenation of a 60-carbon nanographene molecule toward a circumbiphenyl core. *Journal of the American Chemical Society* 141, 4230-4234.
379. Yasuoka, Y., Taira, M., 2018. The Molecular Basis of the Gastrula Organizer in Amphibians and Cnidarians, in: Kobayashi, K., Kitano, T., Iwao, Y., Kondo, M. (Eds.), *Reproductive and Developmental Strategies*. Springer, Tokyo, Tokyo, pp. 667-708.
380. Yasuoka, Y., Taira, M., 2019. Microinjection of DNA constructs into *Xenopus* embryos for gene misexpression and cis-regulatory module analysis. *Cold Spring Harb Protoc* 2019, 097279.

381. Yazaki-Sugiyama, Y., 2018. Neuronal mechanisms regulating the critical period of sensory experience-dependent song learning. *Neuroscience Research*.
382. Yin, F., Garifullina, A., Tanaka, F., 2018. Correction: Synthesis of pyrrolidine-3-carboxylic acid derivatives via asymmetric Michael addition reactions of carboxylate-substituted enones. *Organic & Biomolecular Chemistry* 16, 3052-3053.
383. Yokobayashi, Y., 2018. Small Molecule-Responsive RNA Switches (Bacteria): Important Element of Programming Gene Expression in Response to Environmental Signals in Bacteria, in: Smolke, C., Lee, S.Y., Nielsen, J., Stephanopoulos, G. (Eds.), *Synthetic Biology: Parts, Devices and Applications*. Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim, Germany, pp. 181-188.
384. Yokobayashi, Y., 2019. Applications of high-throughput sequencing to analyze and engineer ribozymes. *Methods*.
385. Yoshimura, M., 2019. RIFA - The current crisis and the beginning of a new battle. Chapter 3. Countermeasure strategy to the invasion of RIFA under the collaborations with citizen science, *Seibutsu no Kagaku Iden*, pp. 168-172.
386. Zamora Chimal, C.G., De Schutter, E., 2018. Ca²⁺ Requirements for Long-Term Depression Are Frequency Sensitive in Purkinje Cells. *Frontiers in Molecular Neuroscience* 11, 12.
387. Zang, Y., Dieudonne, S., De Schutter, E., 2018. Voltage- and Branch-Specific Climbing Fiber Responses in Purkinje Cells. *Cell Reports* 24, 1536-1549.
388. Zayasu, Y., Suzuki, G., 2018. Comparisons of population density and genetic diversity in artificial and wild populations of an arborescent coral, *Acropora yongei*: implications for the efficacy of "artificial spawning hotspots". *Restoration Ecology*, 1-7.
389. Zhang, D., Chuang, P.-S., Cao, D., Yarkali, K., Kola, S., Tanaka, F., 2018. Detection of enantiomers of chiral primary amines by ¹H NMR analysis via enamine formation with an enantiopure γ -position aldol product of a β -keto ester. *Tetrahedron Letters* 59, 2248-2250.
390. Zhang, X., Nagai, T., Ahammad, R.U., Kuroda, K., Nakamuta, S., Nakano, T., Yukinawa, N., Funahashi, Y., Yamahashi, Y., Amano, M., Yoshimoto, J., Yamada, K., Kaibuchi, K., 2019. Balance between dopamine and adenosine signals regulates the PKA/Rap1 pathway in striatal medium spiny neurons. *Neurochemistry International* 122, 8-18.
391. Zhao, R., Takeuchi, T., Luo, Y.-J., Ishikawa, A., Kobayashi, T., Koyanagi, R., Villar-Brioners, A., Yamada, L., Sawada, H., Iwanaga, S., Nagai, K., Satoh, N., Endo, K., 2018. Dual gene repertoires for larval and adult shells reveal molecules essential for molluscan shell formation. *Molecular Biology and Evolution*, 1-11.

392. Zhong, J., Peniak, M., Tani, J., Ogata, T., Cangelosi, A., 2018. Sensorimotor input as a language generalisation tool: a neurorobotics model for generation and generalisation of noun-verb combinations with sensorimotor inputs. *Autonomous Robots*, 1-20.
393. Zucca, A., Zucca, S., Wickens, J.R., 2018. Cholinergic mechanisms in adaptive behaviour. *European Journal of Neuroscience* 47, 1146-1147.

Attachment 1. 2-2 FY2018 Research Honors

No	Research Unit	Honor title	URL	Date awarded
1	OIST	OSA (Optical Society) OIST was given the Diversity and Inclusion Advocacy Recognition Award	https://www.osa.org/en-us/get_involved/diversity_inclusion_in_osa/diversity_inclusion_advocacy_rec/2018_recipients/	Sep 17, 2018
2	Zhang Unit Dr. Dingze Mang	Dr. Dingze Mang (Postdoctoral Scholar) was given the Travel Award 10th International Peptide Symposium 55th Japanese Peptide Symposium	https://www.aeplan.co.jp/10thips/index.html	Nov 07, 2018
3	Zhang Unit Ms. Sachie Yukawa	Ms. Sachie Yukawa (PhD Student) was given the Travel Award 10th International Peptide Symposium 55th Japanese Peptide Symposium	https://www.aeplan.co.jp/10thips/index.html	Nov 07, 2018
4	Satoh Unit Prof. Satoh	Professor Noriyuki Satoh of Marine Genomics Unit (Professor emeritus of Kyoto University) has received the Order of the Sacred Treasure, Gold Rays with Neck Ribbon at the 2018 Autumn conferment of a decoration for his contribution in research and education during his service at Kyoto University.	http://www8.cao.go.jp/shokun/hatsurei/30aki.html	November 3, 2018
5	Satoh Unit Dr. Yuna Zayasu	Dr. Yuna Zayasu, postdoctoral scholar of Marine Genomics Unit has received the best paper award from the Japanese Coral Reef Society. Her article was selected as one of the best papers published between 2011 through 2017 from the viewpoint of originality, innovation and ripple effect of its research.	http://www.jcrs.jp/wp/?page_id=2728	November 23, 2018
6	Nic chormaic Unit Mr. Ivan Toftul	Ivan Toftul, visiting research student, won the poster prize at the JSAP (Japan Society applied physics) Photonics Division annual meeting today.		
7	Nic chormaic Unit Dr Georgiy Tkachenko,	Dr Georgiy Tkachenko, postdoctoral scholar, was awarded a JSPS Postdoctoral Fellowship (while in my group, not an external applicant).		
8	Shannon Unit Mr. Han Yan	Mr. Han Yan, a graduate student of Shannon Unit at OIST, has received Japan Society for the Promotion of Science (JSPS) Research Fellowships for Young Scientists for the year of 2018 to 2020. Awarded to excellent young researchers, these fellowships offer the fellows an opportunity to focus on a freely chosen research topic based on their own innovative ideas.	https://www.jsps.go.jp/jp/index.html	April 1, 2018
9	Shannon Unit Prof. Nic Shannon	Appointment as August-Wilhelm Scheer Visiting Professor 2018 – Member of TUM Institute for Advanced Study	https://www.ias.tum.de/en/members/tum-august-wilhelm-scheer-visiting-professors/	June 7, 2018
10	Uusisaari Unit Dr. Bogna Ignatowska-Jankowska	Dr. Ignatowska-Jankowska, a JSPS Research Fellow at the Uusisaari Unit at OIST, has received this year's Postdoctoral Scientific Achievement Award for the presentation at the 28 th Annual International Cannabinoid Research Society (ICRS) Symposium on Cannabinoids, Leiden, Netherlands (awarded annually to 5 presenters). ICRS is a leading international society focused on cannabinoid research.	http://icrs.co/	July 5, 2018

No	Research Unit	Honor title	URL	Date awarded
11	Dr. Alexer Tang Uusisaari Unit	Dr. Tang, a post-doctoral scholar of A/Prof. Uusisaari's Unit at OIST, has received this year's Masao Ito prize for his poster presentation at the 2018 Society for Research on the Cerebellum and Ataxia in Taiwan. The Ito prize is recognition of the best poster at the annual symposium of the society.	http://www.thesrca.org/?q=80	May 19, 2018
12	Khusnutdinova Unit Dr. Orestes RIVADA WHEELAGHAN	Dr. Orestes RIVADA WHEELAGHAN, currently a staff scientist of Khusnutdinova Unit at OIST (JSPS fellow at the time of the award) has received the CSJ Presentation Award 2018 presented to the research group which had an outstanding presentation, Qs and As by the speaker who is a regular member of CSJ bellow the age of 36.	https://www.csj.jp/nenkai/98haru/data/vol71-06.pdf	April 16, 2018
13	Bandi Unit Prof. Bandi	Prof. Bandi was given the Fluid Dynamics Reearch (FDR) by the Japan Society of Fluid Mechanics. Editorial Board of Fluid Dynamics Research selects an outstanding article published in the previous year to be awarded the FDR Prize.	http://iopscience.iop.org/article/10.1088/1873-7005/aa9280	

Attachment 1. 2-3 FY2018 Outreach by Faculty and Researchers

日付 Date	研究ユニット Unit, Section	プログラム名/参加者 Program, participants	内容 Contents	会場 Venue	学校	人数 Number of people
2018/4/17	Student/ Shen Unit	SGH Ochanomizu University Senior High School 3rd Grade, General Course SGH お茶の水女子大学付属高校 普通科2年	Research Outline 研究概要	Auditorium 講堂	H	74
2018/4/19	Information Services Section	Sendai Ikumi Gakuen High School Computer Science Couse 仙台育英学園高校 情報科学コース	Career Introduction 職業紹介	Auditorium 講堂	H	77
2018/4/21	Economo Unit	Kagakujikan 2018 カガクジカン2018	Event イベント	Okinawa Prefectural Museum 沖縄県立博物館		80
	Economo Unit					
	Graduate School					
	Science and Technology Group					30
2018/4/27	Chakraborty Unit	Kyuyo Junior High School 1st Graders 沖縄県立球陽中学校 1年生	Research Outline 研究概要	B250	OJ	40
2018/4/27	Bourguignon Unit					
2018/5/14	Community Relations CPR	E.C. Killin School	Research Outline 研究概要	C210	BE	32
2018/5/22	PD project (Coral Scientists) OIST students	Japan Wellness High School Okinawa 日本ウェルネス高等学校沖縄キャンパス	Research Outline 研究概要	B250	OH	33
	Rohkhsar Unit			Rohkhsar Unit Lab		
2018/5/23	PD project (Coral Scientists) OIST students	Kyuyo High School 1st-3rd Graders 沖縄県立球陽高等学校 1～3年生	Lecture, Science Activity 講義、アクティビティ	Kyuyo High School 球陽高等学校	OH	50
2018/5/29	Takahashi Unit	Kubasaki High School	Research Outline 研究概要	B250	BH	14
2018/6/8	Qi unit	Misato High School 2nd Graders 沖縄県立美里高校 2年生	Research Outline 研究概要	Auditorium 講堂	OH	51
2018/6/12	Economo unit	Toshima Gakuin High School 2nd Graders 豊島学院高等学校 2年生	Research Outline 研究概要	C210	H	37
2018/6/14	Takahashi Unit	Toshima Gakuin High School 2nd Graders 豊島学院高等学校 2年生	Research Outline 研究概要	C209	H	36
2018/6/14	Community Relations CPR	Makiminato Elementary School 浦添市立牧港小学校	Research Outline 研究概要	Auditorium 講堂	OE	90
2018/6/15	De Schutter unit	Toshima Gakuin High School 2nd Graders 豊島学院高等学校 2年生	Research Outline 研究概要	C209	H	41
2018/6/20	Dani Unit	International University of Japan 学校法人国際大学	Research Outline 研究概要	Auditorium 講堂	U	45
2018/6/26	Media CPR	Work experience for Junior High Schools in Onna 恩納村 中学校職場体験プログラム@OIST	Career Introduction 職業紹介	A151	OJ	8
	Admissions and Records Section		Career Introduction 職業紹介	A151		
	Research Specialist/Imaging section		Career Introduction 職業紹介	A151		
	Facility Managing Section		Career Introduction 職業紹介	Bosai Center and Machine room 防災センター・機械室		
	OBM		Career Introduction 職業紹介			
2018/6/26	Mikheyev Unit	Ena High School 岐阜県立恵那高等学校	Research Outline 研究紹介	Campus tour キャンパス ツアー	H	4
2018/6/27	IT Section	Work experience for Junior High Schools in Onna 恩納村 中学校職場体験プログラム@OIST	Career Introduction 職業紹介	A151	OJ	8
	Kitano Unit		Research Outline 研究紹介	B617		
	Economo Unit		Research Outline 研究紹介	Ecomono Unit Lab		
	Doya Unit		Research Outline 研究紹介	Doya Unit Lab		
2018/6/27	Community Relations CPR	Hiroshima Gakuin High School 広島学院高等学校	Research Outline 研究紹介	Campus tour キャンパス	H	4
2018/6/28	PD project (Coral Scientists) OIST students	Work experience for Junior High Schools in Onna 恩納村 中学校職場体験プログラム@OIST	Career Introduction 職業紹介	Campus tour キャンパス	OJ	8
	Community Relations CPR		Making presentaion プレゼン発表	C210		
2018/7/5	Community Relations CPR	Matsuhima Elementary School 那覇市立松島小学校	Research Outline 研究紹介	B250	OE	120
2018/7/6	Community Relations CPR	Nago Indusrial Senior High school 沖縄県立名護商工高校 1年生	Research Outline 研究紹介	Campus tour キャンパス	OH	33

2018/7/6	Economo Unit	Science Trip in Iheya with Okinawa Prefectural Library サイエンストリップin伊平屋with空飛ぶ図書館	Research Outline 研究紹介	Iheya Island 伊平屋島		20
2018/7/7						15
2018/7/11	PD project (Coral Scientists) OIST students	Yamada Junior High School 恩納村立山田中学校	Research Outline 研究紹介	C210	OJ	22
2018/7/17	Community Relations CPR	Yara Elementary School 嘉手納町立屋良小学校	Research Outline 研究紹介	B250	OE	50
2018/7/17	Nic Chormaic Unit	Ishikawa High Schol 沖縄県立石川高等学校	Research Outline 研究紹介	B250	OH	30
2018/7/18	Community Relations CPR	Maji Elementary school 那覇市立真地小学校	Research Outline 研究紹介	B250	OE	78
2018/7/28	PD project (Coral Scientists) OIST students	Unna Mtsuri うんな祭り	Event イベント	Onna Community Center 恩納コミュニティーセンター		200
	Watanabe Unit					
2018/7/29	PD project (Coral Scientists) OIST students					
	Watanabe Unit					
	Masai Unit					
2018/7/30	PD project (Coral Scientists) OIST students	University of Rykyus Faculty of Education, Junior High School 琉球大学附属中学校 3年生	Research Outline 研究紹介	C700	OJ	40
2018/7/31	Goryanin Unit	Yokatsu High School and Yokatsu Midorigaoka Junior High School 与勝高等学校・与勝緑が丘中学校	Research Outline 研究紹介	C700	OJ OH	40
2018/8/4	PD project (Coral Scientists) OIST students	QAB Summer Holiday Research Program QAB夏休み自由研究	Research Outline 研究紹介	Okinawa Convention Center 沖縄コンベンションセンター		200
2018/8/10	Community Relations CPR	沖縄市教育委員会主催 英語でお仕事プログラム Okinawa City Bord of Education sponsored Summer English Course	Career Introduction 職業紹介	OIST		308
2018/9/7	Community Relations CPR	Yogi Elementary School 那覇市立与儀小学校	Research Outline 研究紹介	B250	OE	58
2018/9/11	Community Relations CPR	Haneji Junior High School 名護市立羽地中学校	Research Outline 研究紹介	B250	OJ	77
2018/9/12	Community Relations CPR	Maeda Elementary School 浦添市立前田小学校	Research Outline 研究紹介	B250	OE	93
2018/9/13	Community Relations CPR	Josei Elementary School 那覇市立城西小学校	Research Outline 研究紹介	B250	OE	103
2018/9/14	Community Relations CPR	Jonan Elementary School 那覇市立城南小学校	Research Outline 研究紹介	B250	OE	74
2018/9/14	PD project (Coral Scientists) OIST students	Onna Elementary School Science Club 恩納小学校サイエンスクラブ	Research Outline 研究紹介	Fureai Taiken center ふれあい体験センター	OE	14
2018/9/18	Community Relations CPR	Toyama Elementary School 浦添市立当山小学校	Research Outline 研究紹介	B250	OE	208
2018/9/25	Community Relations CPR	Awa Elementary School 国頭村立安波小学校	Research Outline 研究紹介	C210	OE	10
2018/9/28	Takahashi Unit	Shukutoku High School 淑徳高等学校	Research Outline 研究紹介	C209	H	33
2018/10/3	Qi Unit	Ibaraki Prefectural Takezono High School 茨城県立竹園高等学校	Research Outline 研究紹介	Auditorium 講堂	H	82
	Maruyama Unit					81
2018/10/4	Takahashi Unit	Seishin Girls Senior High School 清心女子高等学校	Research Outline 研究紹介	C700	H	24
2018/10/9	Community Relations CPR	Nago Elementary School Science Club 名護市立名護小学校 サイエンスクラブ	Research Outline 研究紹介	Nago Elementary School 名護小学校	OE	17
2018/10/10	Community Relations CPR	Haebaru Elementary School 南風原町立南風原小学校	Research Outline 研究紹介	B250	OE	138
2018/10/10	Economo Unit	Japan-Asia Youth Science Exchange Project 日本・アジア青少年サイエンス交流事業	Research Outline Lab tour 研究紹介・ラボツアー	C210		12
	Doya Unit					
	Ishikawa Unit					
2018/10/11	施設管理セクション	Urasoe Industrial High School 沖縄県立浦添工業高校	Career Intruduction 職業紹介	MTG1	OH	62
2018/10/12	Community Relations CPR	Yomitan Elementary School 読谷村立読谷小学校	Research Outline 研究紹介	B250	OE	105

2018/10/12	Science and Technology Group	OIST Science Talk in Junkdo Bookstore OIST科学者による衣食住にまつわるサイエンストーク inジュンク堂	Research Outline 研究紹介	Junkdo Bookstore ジュンク堂書店那覇店		50
2018/10/16	Maruyama Unit	Tonaki Elementary School 渡名喜村立渡名喜小学校	Research Outline 研究紹介	B130	OE	6
2018/10/18	Community Relations CPR	Bito Elementary School 沖縄市立美東小学校	Research Outline 研究紹介	講堂	OE	150
2018/10/18	施設管理セクション	Urasoe Industrial High School 沖縄県立浦添工業高校	Research Outline 研究紹介	B250	OH	79
2018/10/19	PD project (Coral Scientists) OIST students	Sagamihara Scondary School 相模原中等教育学校 5年生	Research Outline 研究紹介	C210	H	40
2018/10/19	Business Development Section	Okinawan Indutry Festival 沖縄の産業まつり	Research Outline 研究紹介	Okinawa Prefectural Budokan 沖縄県立武道館		400
2018/10/20	Okinawa Prefectural Government Office					
2018/10/21						
2018/10/23	Miller Unit	Okinawa Prefectural Technical Senior High School 長野県立飯山高校	Research Outline 研究紹介	C210	H	38
2018/10/24	Community Relations CPR	Nakazato Elementary School 久米島町立仲里小学校	Research Outline 研究紹介	C700	OE	17
2018/10/26	Community Relations CPR	Nishihara Minami Elementary School 西原町立西原南小学校	Research Outline 研究紹介	B503	OE	56
2018/11/1	Community Relations CPR	Shiromae Elementary School うるま市立城前小学校	Research Outline 研究紹介	Auditorium 講堂	OE	83
2018/11/2	PD project (Coral Scientists) OIST students	Onna Elementary School Science Club 恩納小学校サイエンスクラブ	Research Outline 研究紹介	Fureai Taiken Center ふれあい体験センター	OE	14
2018/11/8	Community Relations CPR	Furugen Minami Elementary School 読谷村立古堅南小学校	Research Outline 研究紹介	C700	OE	102
2018/11/9	Science and Technology Group	OIST Science Talk in Junkdo Bookstore OIST科学者による衣食住にまつわるサイエンストーク inジュンク堂	Research Outline 研究紹介	Junkdo Bookstore ジュンク堂書店那覇店		80
2018/11/27	Community Relations CPR	Ginoza Junior High School 宜野座村立宜野座中学校 1年生	Research Outline 研究紹介	B250	OJ	61
2018/11/28	De Schutter unit	Kadena High School	Research Outline 研究紹介	C210	H	40
2018/11/28	Community Relations CPR	Shimizu Elementary School 久米島町立清水小学校	Research Outline 研究紹介	C700	OE	23
2018/11/29	Community Relations CPR	Yagaji Hirugi Elementary School Science Club 屋我地ひるぎ学園 サイエンスクラブ	Research Outline 研究紹介	Yagaji Hirugi Elementary School 屋我地ひるぎ学園	OE	10
2018/12/8	Shen Unit	SCORE! スコア！	Event イベント	Auditorium 講堂		200
2018/12/10	IT Section	Okinawa Industrial High School 沖縄県立沖縄工業高校	Research Outline 研究紹介	B250	OH	80
2018/12/10	Community Relations CPR	Junior and Senior High school students in Taiwan tour 台湾高雄市中高生ツアー	Campus tour キャンパスツアー			35
2018/12/11	Bourguignon Unit	Ryukyu Middle School 6-8 grades	Research Outline 研究紹介	B250		50
2018/12/13	Bandi Unit	Kofu Higashi High School 山梨県立甲府東高校	Research Outline 研究紹介	C209	H	40
2018/12/14	Goryanin Unit	OIST Science Talk in Junkdo Bookstore OIST科学者による衣食住にまつわるサイエンストーク inジュンク堂	Research Outline 研究紹介	Junkdo Bookstore ジュンク堂書店那覇店		60
2018/12/17	PD project (Coral Scientists) OIST students	Onna Elementary School Science Club 恩納小学校サイエンスクラブ	Research Outline 研究紹介	C210	OE	14
2018/12/21	施設管理セクション	Okinawa Industrial High School 沖縄県立沖縄工業高校	Career Introduction 職業紹介	B250	OH	78
2018/12/21	施設管理セクション	Misato Industrial High School 沖縄県立美里工業高校	Research Outline 研究紹介	B250	OH	78
2018/12/26	Community Relations CPR	Akancha School (After school program) あかんちゃ学校（学童）1年生~4年生	Research Outline 研究紹介	C210	OE	50
2019/1/11	Yanagida Unit	OIST Science Talk in Junkdo Bookstore OIST科学者による衣食住にまつわるサイエンストーク inジュンク堂	Research Outline 研究紹介	Junkdo Bookstore ジュンク堂書店那覇店		60
2019/1/22	Research Specialist/Imaging section	Okinawa Prefectural Kaiho Junior High School 2nd graders 沖縄県立開邦中学校 2年生	Research Outline 研究紹介	B250	OJ	40

2019/1/26	IT Section	Nago Science festa 2019 名護サイエンスフェスタ2019	Event イベント	21st Century Gym 21世紀の森 体育館	150	
	Doya Unit					
	Yokobayashi Unit					
2019/1/29	Bandi Unit	Okinawa Christian School 9-12 graders 沖縄クリスチャンスクール	Research Outline 研究紹介	B250		83
2019/1/29	Doya Unit	Kisenbaru Junior High School 恩納村立喜瀬武原中学校	Research Outline 研究紹介	MTG1	OJ	7
2019/1/31	Economo Unit	Cabinet Office Ship for world Youth 内閣府 世界青年の船	Research Outline 研究紹介	B250		36
2019/2/1	Community Relations CPR	Izena Elementary School 伊是名小学校	Research Outline 研究紹介	C700	OE	14
2019/2/6	Rohkhsar Unit	Okinawa Prefectural Yomitan High School 沖縄県立読谷高校	Research Outline 研究紹介	B250	OH	80
2019/2/8	Sato Unit	OIST Science Talk in Junkdo Bookstore OIST科学者による衣食住にまつわるサイエンストーク inジュンク堂	Research Outline 研究紹介	Junkdo Bookstore ジュンク堂書店那覇店		60
2019/2/9	De Shutter Unit	Okinawan Youth Science Works Exhibition 沖縄青少年科学作品展	Event イベント	Urasoe Civic Gym 浦添市民体育館	60	
	施設管理セクション					
2019/2/10	De Shutter Unit	Okinawan Youth Science Works Exhibition 沖縄青少年科学作品展	Event イベント	Urasoe Civic Gym 浦添市民体育館	120	
	Wickens Unit					
	Nic Chormaic Unit					
2019/2/13	Community Relations CPR	Chubu Norin High School 沖縄県立中部農林高校	Research Outline 研究紹介	C210	OH	37
2019/2/14	Community Relations CPR	Motobu High School 沖縄県立本部高校	Campus tour キャンパスツアー		OH	11
2019/2/15	Economo Unit	Science Trip in Miyako サイエンストリップin宮古	Research Outline 研究紹介	Miyako High School 宮古高校	OH	40
2019/2/16			Science program for Kids 科学プログラム	Miyako Prefectural Office 宮古合同庁舎	小中 校生	100
2019/2/19	Miller Unit	Okinawa Prefectural Gushikawa High School 沖縄県立具志川高校	Research Outline 研究紹介	Auditorium 講堂	OH	240
2019/2/20	Economo Unit	Okinawa Prefectural Itoman High School 沖縄県立糸満高校	Research Outline 研究紹介	B250	OH	80
2019/2/20	Watanabe Unit	Okinawa Prefectural Nago High School 沖縄県立名護高校	Research Outline 研究紹介	B250	OH	56
2019/2/22	施設管理セクション	Okinawa Prefectural Naha Industrial High School 沖縄県立那覇工業高校	Research Outline 研究紹介	B250	OH	66
2019/3/8	Shintake Unit	OIST Science Talk in Junkdo Bookstore OIST科学者による衣食住にまつわるサイエンストーク inジュンク堂	Research Outline 研究紹介	Junkdo Bookstore ジュンク堂書店那覇店		80
2019/3/13	Economo Unit	Okinawa Prefectural Naha Kokusai High School 沖縄県立那覇国際高校	Research Outline 研究紹介	B250	OH	52
2019/3/19	Community Relations CPR	Okinawa Prefectural Hokubu Norin High School 沖縄県立北部農林高校 定時制	Campus tour キャンパスツアー		OH	9
2019/3/20	Qi Unit	Republic Polytechnic SG シンガポール ポリテク学校	Research Outline 研究紹介	MTG1		24
2019/3/22	Miller Unit	Science Trip in Ishigaki サイエンストリップin石垣	Research Outline 研究紹介	Yaeyama High School 八重山高校	OH	450
2019/3/23	Mikheyev Unit		Science program for Kids 科学プログラム	Yaeyama Prefectural Office 八重山合同庁舎	小中 校生	40
2019/3/28	Wickens Unit	Okinawa Shogaku Junior High School 沖縄尚学附属中学校	Research Outline 研究紹介	B250	OJ	30

添付資料 1. 2-4 平成30年度OIST 研究施設の外部利用者

利用概要	利用者区分	団体数	利用人数	利用期間
クライオ電子顕微鏡の利用	民間企業（OISTスタートアップ企業）	1	4	2018/4/1- 2019/3/31

Attachiment 1. 2-4 FY2018 The number of use of our research facilities by external organizations

Office of the Dean of Research
研究担当ディーンオフィス

Outline of Use	User Classification	# of Organizations	# of participants	Duration of Use
Use of Cryo Electron Microscopes	Private company (OIST Start-up)	1	4	2018/4/1- 2019/3/31

Attachment 1. 4-1 Academic Exchange Agreements List

No.	University/Institution	Country	Date of Agreement	Date of Expiration	Type of Agreement
1	Graduate School of Informatics Kyoto University	Japan	2010/3/31	No expiration	Collaboration Agreement
2	University of the Ryukyus	Japan	2012/4/1	2022/3/31	Agreement of Cooperation
3	Okinawa National College of Technology	Japan	2012/5/22	2022/5/21	Agreement of Cooperation
4	Kyushu University (Program for Leading Graduate Schools)	Japan	2012/10/22	2019/10/21	Memorandum of Understanding
5	Graduate School of Medicine, Osaka University	Japan	2012/9/1	2018/3/31	Special Research Student
6	Graduate School of Informatics Kyoto University	Japan	2013/4/1	2018/3/31	Special Research Student
7	Institute of Medical Science, The University of Tokyo	Japan	2013/7/2	2024/1/28	Academic Exchange Agreement
8	Okinawa Churashima Foundation	Japan	2013/8/29	No expiration	Agreement on Scientific and Academic Cooperation
9	University of California, Berkeley	USA	2013/10/11	2018/10/10	Agreement on Scientific and Academic Cooperation
10	National Taiwan University	Taiwan	2014/1/17	2019/1/16	Agreement on Scientific and Academic Cooperation
11	The University of Tokyo	Japan	2014/1/28	2024/1/28	Agreement on Scientific and Academic Cooperation
12	School of Science, The University of Tokyo	Japan	2014/1/28	2023/7/2	Memorandum of Understanding on Student Exchange
13	Texas Tech University	USA	2014/3/28	2019/3/27	Agreement on Scientific and Academic Cooperation
14	Texas Tech University (Department of Environmental Toxicology)	USA	2013/4/1	2018/3/31	Agreement on Student Exchange
15	Alexandria University	Egypt	2014/3/28	2019/3/27	Agreement on Scientific and Academic Cooperation
16	Alexandria University (Faculty of Science)	Egypt	2014/2/1	2019/1/31	Agreement on Student Exchange
17	University of Free State	South Africa	2014/3/28	2019/3/27	Agreement on Scientific and Academic Cooperation
18	University of Crete	Greece	2014/3/28	2019/3/27	Agreement on Scientific and Academic Cooperation
19	University of Crete (School of Science and Engineering)	Greece	2013/10/1	2018/9/30	Agreement on Student Exchange
20	University of KwaZulu-Netal	South Africa	2014/6/8	2019/6/7	Agreement on Scientific and Academic Cooperation
21	University of KwaZulu-Netal (School of Chemistry and Physics)	South Africa	2014/8/1	2019/7/30	Agreement on Student Exchange
22	University of Hawaii at Manoa	USA	2015/7/10	2020/7/9	Agreement on Scientific and Academic Cooperation
23	Department of Mechanical Engineering, Cullen College of Engineering, University of Houston	USA	2016/4/1	2018/8/31	Agreement on Acceptance of Student
24	Rutgers University - New Brunswick	USA	2016/5/1	2017/5/1	Agreement on Acceptance of Student
25	Graduate School of Medicine, Kyoto University	Japan	2016/8/1	2018/3/31	Agreement on Acceptance of Student
26	Advanced Telecommunication Research Institute International	Japan	2017/3/1	2019/2/28	Internship Agreement
27	Korea Advanced Institute of Science and Technology, School of Electrical Engineering	Korea	2017/9/1	2018/8/31	Agreement on Acceptance of Student
28	Tufts University, School of Engineering	USA	2017/8/24	2018/3/30	Request and Standard Terms and Conditions for Hosting an OIST Student
29	University of Strathclyde, Glasgow, Department of Physics	UK	2018/3/3	2018/6/10	Request and Standard Terms and Conditions for Hosting an OIST Student
30	University of California, Santa Barbara, Marine Science Institute	USA	2018/5/25	2018/8/8	Request and Standard Terms and Conditions for Hosting an OIST Student
31	Princeton University, Department of Molecular Biology	USA	2018/6/1	2018/10/31	Request and Standard Terms and Conditions for Hosting an OIST Student
32	The University of Tokyo, Graduate School of Science, Department of Biological Science	Japan	2018/9/1	2018/12/12	Request and Standard Terms and Conditions for Hosting an OIST Student
33	Earlham Institute, Organisms and Ecosystems Department	UK	2018/9/24	2018/11/22	Request and Standard Terms and Conditions for Hosting an OIST Student
34	PMMH-ESPCI	France	2019/1/1	2019/12/31	Request and Standard Terms and Conditions for Hosting an OIST Student
35	RIKEN Center for Advanced Intelligence Project	Japan	2019/4/1	2019/7/26	Request and Standard Terms and Conditions for Hosting an OIST Student
36	University of Hyderabad, School of Physics	India	2018/7/1	2019/6/30	Agreement on Student Exchange
37	Wuhan University, College of Cemistry and Molecular Science	China	2018/10/1	2020/3/31	Agreement on Student Exchange
38	University of Sargodha, Department of Chemistry	Pakistan	2018/10/1	2021/9/13	Agreement on Student Exchange
39	Korea Advanced Institute of Science and Technology, Graduate School of Knowledge Service Engineering	Korea	2018/10/1	2019/2/28	Agreement on Student Exchange
40	University of South Carolina, Department of Physics and	USA	2018/11/1	2018/12/31	Agreement on Student Exchange
41	University of Hidelberg, Interdisciplinary Center for Neuroscience	Germany	2019/5/1	2019/10/31	Agreement on Student Exchange
42	The Technical University of Munich	Germany	2018/11/2	2021/8/31	Agreement on External Co-supervision of an OIST student

Attachment 1. 4-2 FY2018 List of OIST Funded Workshops Mini-Symposia

List of OIST funded Workshops in FY2018

	Start Date	End Date	Title	Venue	Participants (total)	Participants (overseas)
1	April 16, 2018	April 21, 2018	Coherent Control of Complex Quantum Systems	OIST Seaside House	81	52
2	May 25, 2018	May 28, 2018	Geometry and Topology of 3-manifolds	OIST Seaside House	76	50
3	June 11, 2018	June 14, 2018	Olfaction: the stimulus space, neural representation and behavioural relevance	OIST Seaside House	47	32
4	June 25, 2018	July 12, 2018	OIST Computational Neuroscience Course (OCNC 2018)	OIST Seaside House	74	42
5	July 30, 2018	August 13, 2018	OIST Developmental Neurobiology Course 2018	OIST Main Campus	59	31
6	August 16, 2018	August 24, 2018	OIST Workshop "OIST Collaborative Experimental Design and Analytics (CEDA) Workshop 2018"	OIST Main Campus	43	23
7	September 25, 2018	October 4, 2018	Okinawa School in Physics: Coherent Quantum Dynamics (2018)	OIST Seaside House	78	39
8	February 18, 2019	February 20, 2019	Dynamic neuronal circuits and motor behavior	OIST Main Campus & OIST Seaside House	52	38
Total					510	307

List of OIST funded Mini-Symposia in FY2018

	Start Date	End Date	Title	Venue	Participants (total)	Participants (overseas)
1	September 12, 2018	September 14, 2018	Flow and Instability of Self-Assembled Systems	OIST Main Campus	16	8
2	October 19, 2018	October 21, 2018	Voltage Imaging Symposium	OIST Main Campus	15	4
3	October 31, 2018	November 2, 2018	Holographic Tensors	OIST Conference Center & OIST Seaside House	35	18
Total					66	30

List of OIST Jointly-funded Workshops in FY2018

	Start Date	End Date	Title	Venue	Participants	Participants (overseas)
1	June 25, 2018	June 29, 2018	Strings 2018	OIST Conference Center	400	304
2	August 20, 2018	August 20, 2018	Joint symposium in Nano/Bio Science and Technology between OIST and KAIST	OIST Main Campus	12	6
3	January 15, 2019	January 17, 2019	100 Island Challenge: Cross-regional perspectives of coral reef structure and function	OIST Seaside House	19	9
4	March 1, 2019	March 4, 2019	The 11th International Workshop on Fundamental Physics Using Atoms	OIST Conference Center & OIST Main Campus	101	18
5	March 18, 2019	March 20, 2019	The 16th International Membrane Research Forum	OIST Main Campus	75	14
Total					607	351

Attachment 2. 4-1 FY2018 Number of Employees

The Number of Employees as of March 31th 2019

		Permanent				Fixed-term					Part-time				Agency Temp				Total			
Division	Job Title	F	M	Non-Japanese	ToTal	F	M	Second	Non-Japanese	ToTal	F	M	Non-Japanese	ToTal	F	M	Non-Japanese	ToTal	F	M	Non-Japanese	ToTal
Admin	Vice President					2	6		6	8									2	6	6	8
	Chief Operating Officer						1			1										1		1
	Associate Vice President					2	3	1	2	5									2	3	2	5
	Dean						1		1	1										1		1
	Provost					1			1	1									1		1	1
	Senior Manager		2		2	3	5	1	2	8									3	7	2	10
	Manager	2	3		5	4	6	2	1	10									6	9	1	15
	Research Support Specialist					1	4		5	5									1	4	5	5
	Assistant Manager		1		1	3	4			7									3	5		8
	Specialist					20	26	1	18	46									20	26	18	46
	IT Engineer						10		6	10										10	6	10
	Administrative Staff	3	1		4	112	36	1	14	148									115	37	14	152
	Part-time										7	4	6	11					7	4	6	11
	Agency Temp Staff														51	11	8	62	51	11	8	62
Admin Total		5	7		12	148	102	6	56	250	7	4	6	11	51	11	8	62	211	124	70	335
DoR	Associate Vice President		1		1															1		1
	Senior Manager						1			1										1		1
	Manager						2			2										2		2
	Research Support Specialist		2		2	3	23		9	26									3	25	9	28
	Assistant Manager					1	1			2									1	1		2
	Specialist		1		1	1	3			4									1	4		5
	Research Support Leader	1			1		6		3	6									1	6	3	7
	Research Support Technician					3				3									3			3
	Administrative Staff					15	4		1	19									15	4	1	19
	Part-time										3			3					3			3
	Agency Temp Staff														3	3		6	3	3		6
DoR Total		1	4		5	23	40		13	63	3			3	3	3		6	30	47	13	77
Faculty	Professor					3	23		15	26									3	23	15	26
	Associate Professor					10	22		20	32									10	22	20	32
	Science and Technology Associate					7	5		8	12									7	5	8	12
	Research Specialist						1		1	1										1	1	1
	Group Leader					6	9		7	15									6	9	7	15
	Staff Scientist					12	52		37	64									12	52	37	64
	Postdoctoral Scholar					40	127		141	167									40	127	141	167
	Research Unit Technician					55	56		51	111									55	56	51	111
	Research Unit Administrator					46				46									46			46
	Administrative Staff					1				1									1			1
RUA	Administrative Staff																					
	Part-time										12	8	3	20					12	8	3	20
Agency Temp Staff	Agency Temp Staff														14	7	3	21	14	7	3	21
Research Unit Total						180	295		280	475	12	8	3	20	14	7	3	21	206	310	286	516
Total		6	11		17	351	437	6	349	788	22	12	9	34	68	21	11	89	447	481	369	928

The Number of Employees as of March 31th 2019

		Nationality	Admin	Research Support	Research Unit (Faculty/Researcher)	Research Unit (Non-Researcher)	Total
1	AR	Argentinian			2		2
2	AT	Austrian			2		2
3	AU	Australian	5		6		11
4	BD	Bangladeshi		1		1	2
5	BE	Belgian	1		3		4
6	BG	Bulgarian	1			1	2
7	BR	Brazilian			4		4
8	CA	Canadian	3		3		6
9	CH	Swiss		1	1	1	3
10	CN	Chinese	2		29	5	36
11	CO	Colombian			3		3
12	CR	Costa Rican			1		1
13	CZ	Czech			1	1	2
14	DE	German			12	1	13
15	DZ	Algerian				1	1
16	EG	Egyptian			1	1	2
17	ES	Spanish	1		4	1	6
18	FI	Finnish	1		1		2
19	FR	French		1	13	4	18
20	GB	British	12		17	5	34
21	GR	Greek			2		2
22	HU	Hungarian			1		1
23	ID	Indonesian	1		2		3
24	IE	Irish		1	4		5
25	IL	Israeli			2	1	3
26	IN	Indian	2		30	1	33
27	IR	Iranian			2		2
28	IT	Italian	2	1	7	1	11
29	JP	Japanese	265	64	88	142	559
30	KE	Kenyan			1		1
31	KR	South Korean		2	4	1	7
32	LK	Sri Lankan				1	1
33	LT	Lithuanian			1		1
34	LY	Libyan			1		1
35	MX	Mexican		1	2	1	4
36	MY	Malaysian			3		3
37	NL	Dutch			1		1
38	NZ	New Zealand			4		4
39	PH	Filipino	2		1		3
40	PK	Pakistani			1		1
41	PL	Polish	1		2		3
42	PS	Palestine			1		1
43	RO	Rumanian			1		1
44	RS	Serbian			1		1
45	RU	Russian Fed.	1	2	10	5	18
46	SE	Swedish	1	1	3	3	8
47	SK	Slovakian			2		2
48	TG	Togolese			1		1
49	TH	Thai			2		2
50	TN	Tunisian		1			1
51	TR	Turkish				2	2
52	TW	Taiwanese	2		3	5	10
53	UA	Ukrainian	1		3	1	5
54	US	American	29	1	25	11	66
55	VN	Vietnamese	1		3	1	5
56	ZA	South African	1			1	2
Grand Total			335	77	317	199	928

Attachment 2. 4-2 FY2018 Salary Level of Employees

Compensation/Salary of OIST SC's Executive Officers and Employees

I Compensation of Executive Officers

1 Items concerning the Basic Policy of Executive Officers' Compensation

① How to determine Executive Officers' salary levels.

The salary level of executive officers was determined in accordance with the international standard and with consideration on their responsibilities of overseeing management, education, and research of an internationally outstanding graduate university.

② How performance is reflected into Executive Officers' compensation in FY2017 (How performance-based salary works and has been adopted)

A Special Adjustment Allowance may be awarded to full-time executive officers when it is deemed necessary in consideration of their internationally excellent research and educational experiences, difficulty of duties, and past achievements, etc.

③ Details of Executive Officers' compensation levels and revisions made in FY2017

Head of
Corporation

1. Details of the officer's salary standard
The compensation of an officer is defined as the sum of base salary (annual salary), a special adjustment allowance, commuting allowance, and housing allowance. The base salary and special adjustment allowance are determined by the Board of Governors upon the discussion with Cabinet Office, within the range up to the maximum amount.
2. Revisions in FY2017
None

Governor

1. Details of the officer's salary standard
The compensation of an officer is defined as the sum of base salary (annual salary), a special adjustment allowance, commuting allowance, and housing allowance. The base salary and special adjustment allowance are determined by the Board of Governors upon the discussion with Cabinet Office, within the range up to the maximum amount.
2. Revisions in FY2017
None

Governor
(Part Time)

1. Details of the Salary Standard of Officers
The compensation of part-time Officers is determined by the Board of Governors based on their employment status and positions.
2. Details of the Revisions in FY2017
None

Auditor

1. Details of the officer's salary standard

The compensation of an officer is defined as the sum of base salary (annual salary), a special adjustment allowance, commuting allowance, and housing allowance. The base salary and special adjustment allowance are determined by the Board of Governors upon the discussion with Cabinet Office, within the range up to the maximum amount.

2. Revisions in FY2017

None

Auditor
(Part Time)

1. Details of the officer's salary standard

The compensation of part-time Officers is determined by the Board of Governors based on their employment status and positions.

2. Revisions in FY2017

None

2 Payment Condition of Officer Compensation

Position	Total Annual Compensation in FY2017				Accession/Retirement Status		Former position
		Compensation (Salary)	Bonus	Others (details)	Accession	Retirement	
Head of Corporation	K Yen	K Yen	K Yen	K Yen			
	75,024	30,000		45,024 (Special Adjustment Allowance)			
"A" Governor	K Yen	K Yen	K Yen	K Yen			
	31,224	20,000		11,224 (Special Adjustment Allowance)			
"B" Governor (part-time)	K Yen	K Yen	K Yen	K Yen			
	1,626			()	24-May		
"C" Governor (part-time)	K Yen	K Yen	K Yen	K Yen			
	1,700			()			
"D" Governor (part-time)	K Yen	K Yen	K Yen	K Yen			
	1,700			()			
"E" Governor (part-time)	K Yen	K Yen	K Yen	K Yen			
	1,300			()			
"F" Governor (part-time)	K Yen	K Yen	K Yen	K Yen			
	1,300			()			
"G" Governor (part-time)	K Yen	K Yen	K Yen	K Yen			
	208			()	1-Nov		
"H" Governor (part-time)	K Yen	K Yen	K Yen	K Yen			
	1,700			()			
"I" Governor (part-time)	K Yen	K Yen	K Yen	K Yen			
	1,700			()			
"J" Governor (part-time)	K Yen	K Yen	K Yen	K Yen			
	1,700			()			
"K" Governor (part-time)	K Yen	K Yen	K Yen	K Yen			
	900			()			
"L" Governor (part-time)	K Yen	K Yen	K Yen	K Yen			
	1,300			()			
"M" Governor (part-time)	K Yen	K Yen	K Yen	K Yen			
	900			()			
"N" Governor (part-time)	K Yen	K Yen	K Yen	K Yen			
	1,300			()			
"O" Governor (part-time)	K Yen	K Yen	K Yen	K Yen			
	1,700			()			*
"P" Governor (part-time)	K Yen	K Yen	K Yen	K Yen			
	1,658			()		28-Feb	
"Q" Governor (part-time)	K Yen	K Yen	K Yen	K Yen			
	1,091			()		31-Oct	

"R" Governor (part-time)	K Yen 1,700	K Yen	K Yen	K Yen ()			
"A" Auditor	K Yen 8,840	K Yen 8,750	K Yen	K Yen 90 (Special Adjustment Allowance)		31-Oct	◇
"B" Auditor	K Yen 6,311	K Yen 6,250	K Yen	K Yen 61 (Special Adjustment Allowance)	1-Nov		◇
"C" Auditor (part-time)	K Yen 994	K Yen 994	K Yen	K Yen ()		31-Oct	
"D" Auditor (part-time)	K Yen 710	K Yen 710	K Yen	K Yen ()	1-Nov		

*1: In the column of the "others (details)," enter the total amount of allowances, e.g. commuting allowance.

*2: Select either of the following marks according to the type of the Officer's former job.

Retired public employee"*, Seconded officer "◇", Retiree of IAI, etc. "※",

Retired public employee, and then worked & retired from IAI, etc. "** ※", leave the column empty if none of the categories apply.

3 Appropriateness of Executive Officers' Compensation Standard

【Validation by Corporation】

Head of
Corporation

The compensation standard for the Head of Corporation is reasonable in consideration of the responsibility and difficulty of overseeing management, education and research of an internationally outstanding graduate university, as well as past achievements, and

Governor

The compensation standard for the Governor is reasonable in consideration of the responsibility and difficulty of overseeing management, education and research of an internationally outstanding graduate university, as well as past achievements, and international standard.

Governor
(Part time)

The compensation standard for part-time Governor is reasonable in consideration of the responsibility of overseeing management, education and research of an internationally outstanding graduate university, as well as their and insight as a Nobel Laureate, etc.

Auditor

The compensation for the Auditor is reasonable in consideration of the responsibility of auditing the management of an internationally outstanding graduate university and difficulty of their duties.

Auditor
(Part time)

The compensation for the Auditor is reasonable in consideration of the responsibility of auditing the management of an internationally

【Verification by Competent Minister】

The compensation for the Governors (including the Head of Corporation) is reasonable in accordance with the international standard and in consideration of their nobleness, academic expertise, and abilities to operate the Corporation effectively.

4 Payment Condition of Retirement Allowance for Officers (Condition of retiree subject to retirement allowance in FY2017)

Classification	Payment Amount (Total)	Period of Service		Retired Date	Performance Evaluation Rate	Former position
Head of Corporati on	N/A					
Governor	N/A					
Auditor	N/A					

5 Appropriateness of Retirement Allowance for Retiree
【Reason for the determination by Competent Minister】

Classification	Reason for Determination
Head of Corporati on	N/A
Governor	N/A
Auditor	N/A

6 How performance-based salary works and is adopted

As another system similar to performance-based salary, the special adjustment allowance scheme has been introduced, which may be paid to a full-time officer if it is deemed necessary in consideration of the officer's experiences regarding internationally excellent scientific research and education, difficulty of duties, and past achievements. This scheme will continue to be applied.

II Salary of Employees

1 Items concerning the Basic Policy of Employee Salary

① How the employee salary level is determined

Referring to factors such as salary levels of national government employees and those of academic institutions in and outside of Japan, the salary level for each type of work will be determined based on individual job performance etc. within the respective range.

② How the efficiency presented by the employee or work performance of the employee is reflected in the salary (How the performance-based salary works and is adopted)

Adopt a performance evaluation system appropriate to the characters of each job category such as faculty, administrative staff, etc. and implement the system while ensuring fairness and transparency, then determine individual salary amounts based on their evaluation results.

③ Details of the salary system and major revisions made in FY2017

1. Details of the salary system

Type of salary: annual salary, overwork allowance, other allowances (commuting allowance, housing allowance, etc.)

Pay system: annual salary system (type of job (faculty, researcher, administrative staff, etc.) and the salary range are set based on job levels.

2. Major revisions in FY2017

The following measures have been continued to be taken.

(1) Optimize the salary level

We will conduct thorough performance reviews and tighten a pay raise. When we adopt a retirement age system, we will actively employ young people over their older counterparts if candidates are equal in ability.

(2) Control of the salary level of employees of the entire institution

In addition to (1), we will also control the salary level as the entire institution for fixed-term employees by promoting employment of new graduates and young people.

2. Payment Condition of Employee Salary

① Payment Condition by Type of Work

Classification	Number	Average age	FY2017 Annual Salary (Average)			
			Total amount	Prescribed amount within the total	Commuting allowance	Bonus within the total
Permanent Employee	No. of staff members 15	Age 46.6	K Yen 9,606	K Yen 9,606	K Yen 154	K Yen
Research Staff	No. of staff members 3	Age 37.8	K Yen 6,425	K Yen 6,425	K Yen 97	K Yen 0
Administrative & Technical Staff	No. of staff members 12	Age 48.8	K Yen 10,401	K Yen 10,401	K Yen 168	K Yen
Overseas Employee	No. of staff members 1	Age -	K Yen -	K Yen -	K Yen -	K Yen
Fixed Term Employee	No. of staff members 513	Age 41.5	K Yen 6,991	K Yen 6,991	K Yen 86	K Yen
	No. of staff members	Age	K Yen	K Yen	K Yen	K Yen

Faculty	44	52	15,173	15,173	44	
Research staff	No. of staff members 185	Age 38.9	K Yen 6,658	K Yen 6,658	K Yen 56	K Yen
Administrative & Research Administrator	No. of staff members 284	Age 41.6	K Yen 5,941	K Yen 5,941	K Yen 113	K Yen

Note 1: "Permanent employee" should not include staff working abroad, fixed-term or reappointed staff.

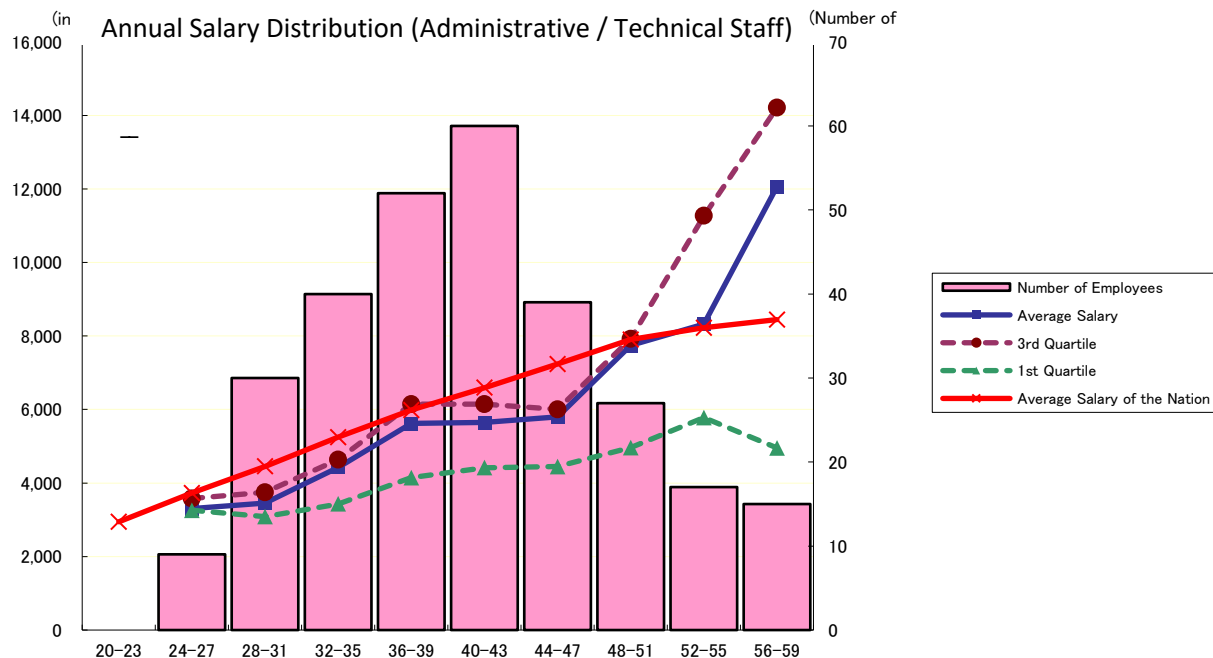
Note 2: If the applicable person is only one, no description on that person's age and annual salary shall be made due to possible identification of the person.

Note 3: Description on non-applicable permanent and fixed term employee positions are omitted.

Note 4: No applicable person was found for re-employed permanent and part-time staff.

Note 5: All staff members of permanent employees, overseas employees, and fixed term employees are employees based on annual salary.

② Annual Salary Distribution by Age (administrative/technical staff)[excluding staff working abroad. This applies down to ④.]



Note 1: Commuting allowance is deducted from the annual salary shown in ①. This condition applies down to ④.

Note 2: No applicable person for age 20-23 range.

Note 3: Including those applicable for annual salary. This condition applied down to ④.

③ Annual Salary Distribution by Job Classification
(Administrative/technical staff)

Groups Representing Distribution	No. of staff	Average age	Annual Salary	
			Average	Max-Min
Equivalent to director	17	53.9	17,755	45,000~11,966
Equivalent to manager	24	49.9	9,705	12,260~7,887
Equivalent to assistant manager	39	44.2	6,966	8,873~5,566
Equivalent to section chief	70	43.1	5,585	9,107~4,247
Staff	146	38.0	3,977	9,044~1,458

④ Ratio of the Portion in Bonus (Not Applicable)

Division		Summer	Winter	Total
Managerial level	Uniform payment (Each term)	%	%	%
	Assessed Payment (performance basis) (average)	%	%	%
	Max~Min	~	~	~
General staff	Uniform payment (Each term)	%	%	%
	Assessed Payment (performance basis) (average)	%	%	%
	Max~Min	~	~	~

3 Verification of the Appropriateness of Salary Level

○Administrative and Technical Staff

Item	Contents
Compared with Government Officials	<ul style="list-style-type: none"> • Age basis 92.1 • Region/Academic Career basis 102.4 • Age/Academic Career basis 90.6 • Age/Region/Academic Career Basis 101.9
Reason why the salary level is higher than that of the Nation	<p>OIST SC is a school corporation that aims to conduct internationally outstanding education and research in science and technology at the Okinawa Institute of Science and Technology Graduate University (hereinafter “Graduate University”).</p> <p>At the Graduate University, research and education is conducted in English, and more than half of the faculty and students are non-Japanese. Under such international environment, outstanding expertise is expected from administrative staff due to the necessity to support researchers who conduct internationally outstanding education and research in order 1) to contribute to the promotion and self-sustaining development of Okinawa and 2) to promote and sustain the advancement of science and technology in Japan and throughout the world. This means OIST staff are also required of having high expertise and English language skills that tend to boost the Laspeyres Index.</p> <p>(Reference: expertise of target employees (289))</p> <ul style="list-style-type: none"> • Master or above 118 people (40.8%), of which PhD: 45 people (15.6%) • Above university degree 232 people (80.3%) (Government Officials (administrative post: 56.8%)) • All employees have business-level proficiency or higher in English reading and writing skills. <p>Additionally, FY 2017 Age Basis Index is 92.1.</p>
	<p>(Corporate Verification)</p> <p>Compared with government officials, Age Basis Index has been less than 100, 94.2 in 2016 and 92.1 in 2017 respectively. Adjustment of the salary level has been addressed through various measures for lowering it.</p> <p>(Verification by Competent Minister)</p> <p>OIST is conducting world-class research and education activities in an international environment where such activities are carried out in English, and more than half of the faculty and students are non-Japanese. Since administrative staffs also must have high expertise to support the researchers, we understand the necessity of having excellent human resources at OIST. OIST has been taking measures to ensure an appropriate salary level under such condition, and as a result, the index compared with government officials showed improvement. We will continue to provide proper instruction and supervision to ensure that such measures will be implemented steadily.</p>
Measures to be Taken	<p>As measures for the future,</p> <ol style="list-style-type: none"> 1) Hire mid-level and younger generation employees over their older counterparts if the candidates are equal in ability. 2) Thoroughly carry out the (personnel) performance evaluation and tighten a pay raise. <p>Through carrying out these measures, appropriate levels of salary is expected to be retained.</p>

4 Salary Model

Note: The description is omitted due to the consistent annual salary system.

5 Consideration on Achievement Allowance Scheme and its Introduction

Achievement allowance scheme is to be introduced for faculty and administrative staff in accordance with the characteristics of their job classification. The result of each individual's achievement is to be reflected on their payment through appropriate implementation, considering fairness and transparency. The scheme is continued to be implemented in the future.

III Comprehensive Personnel Expenses

Classification	Previous FY (FY 2015)	Current FY (FY 2016)
Total Salary and Compensation Payment Amount (A)	K Yen 5,086,299	K Yen 5,629,323
Retirement Allowance Payment Amount (B)	K Yen 26,220	K Yen 5,167
Salary of Part-time Officers (C)	K Yen 86,222	K Yen 80,760
Benefit Package Expenses (D)	K Yen 552,304	K Yen 608,297
Personnel Expense in the most broad sense (A+B+C+D)	K Yen 5,751,045	K Yen 6,323,547

Matters that serve as reference for the Comprehensive Personnel Cost

- Current FY's comprehensive personnel expenses increased due to the addition of 69 employees compared with the previous FY.
- In accordance with "Reduction on Government Public Officials' Retirement Allowance," (decided by the Cabinet on August 7, 2012), the retirement allowance of managerial level personnel has been reduced since April 1, 2013, by multiplying the adjustment ratios, 92/100 (from October 2013 to June 2014), 87/100 (from July 2014 to December 2017), and 83.7/100 (in January 2018 and thereafter).

IV Others

None

Attachment 2. 4-3-1 FY2018 Number of Employees Taking Training Programs HR

Course	Method	Frequency	# of Participants
Accomplishing More with Less	In-person	2	17
Accomplishing More with Less Certification	In-person	1	3
Accomplishing More with Less for Managers	In-person	2	27
Accounting and Document Management	In-person	12	36
CliftonStrengths	In-person	1	18
eFront Reporting for Monitors and Administrators	In-person	1	39
Employee Development Program	Online	3	44
Management Forum	Brended	2	22
Microsoft Office	In-person	13	107
Mindfulness @ Work	In-person	2	22
New Employee Orientation	In-person	23	183
Project Management in Action	In-person	1	16
RUA Forum	Brended	1	14
Japanese Income Tax Filing Information	Online	1	34
Total			582

添付資料 2. 4-3-2 平成30年度 研修実績・外部研究資金

セミナー・会議・コース	対象者（記入例：アドミ、研究者、業者等）	参加人数	登壇者（発表言語）	開催日
グラントライティング講座 "Writing grants for fun and profit"	学生、研究者、事務職員	51 (Researcher: 46)	OIST アレクサンダー・ミケエブ (英語)	2018/4/5
「CREST/さきがけ」公募説明会（日本語）	研究者・事務職員	22 (Researcher: 16)	JST 山崎 秀樹 濱田 智久 (日本語)	2018/4/17
「CREST/さきがけ」公募説明会（英語）	研究者・事務職員	10 (Researcher: 7)	JST 山崎 秀樹 濱田 智久 (英語)	2018/4/17
科研費の使い方説明会（英語）	学生、研究者、事務職員	13 (Researcher: 8)	OIST 藤松 佳晃 仲程 彩乃 (英語)	2018/5/23
科研費の使い方説明会（日本語）	学生、研究者、事務職員	40 (Researcher: 6)	OIST 藤松 佳晃 仲程 彩乃 (日本語)	2018/5/24
科研費セミナー『審査結果を読み解く！』	研究者・事務職員	21 (Researcher: 16)	ASTAROTH 久保 陽介 大澤 崇人 大貫 俊彦 (日本語（英語同時通訳）)	2018/6/11
科研費 Grant Facilitatorsによる申請書レビュー ①（面談）	研究者	23	Grant Facilitators 学内： 1 名 学外： 5 名 (日本語、英語)	2018/7/17 ～ 2018/7/31
科研費 書き方セミナー	学生、研究者、事務職員	60 (Researcher: 52)	ASTAROTH 久保 陽介 大澤 崇人 OIST 藤松 佳晃 大竹 茂行 (日本語（英語同時通訳）)	2018/9/10
科研費 申請書個別コンサルテーション	研究者	14	ASTAROTH 久保 陽介 大澤 崇人 大貫 俊彦 (日本語（英語逐次通訳）)	2018/9/10 ～ 2018/9/13
科研費 Grant Facilitatorsによる申請書レビュー ②（書面）	研究者	18	Grant Facilitators 学内： 1 名 学外： 5 名 (日本語、英語)	2018/9/14 ～ 2018/10/13
Researchmap説明会	研究者	20	OIST 大竹 茂行 (英語)	2018/11/21

科研費支援セッション

内容	対象	参加者	担当	開催日
H30交付申請書作成	科研費採択者	12	藤松、大竹、仲程、天願	2018/4/12
H30交付申請書作成（特別研究員奨励費）	科研費採択者（主に学生）	10	大竹、仲程、天願	2018/5/11
H31科研費申請	研究者（主に外国人）	45	藤松、大竹、仲程、天願	2018/10/16-19
Researchmap登録	研究者（主に外国人）	20	藤松、大竹、仲程、天願	2018/11/21
H31科研費特別研究員奨励費申請	特別研究員採択者（学生）	4	大竹、天願、古謝	2019/2/4

Attachment 2. 4-3-2 FY2018 Number of Employees Taking Training Programs, GRCS

Seminar/Meeting/Course	Participants (e.g. admin staff, researchers, venders etc.	# of participants	Speaker (language)	Date
Grant Writing Seminar "Writing grants for fun and profit"	Students, Researchers and Admin staff	51 (Researcher: 46)	OIST Alexander MIKHEYEV (English)	2018/4/5
Explanatory Session for "CREST/PRESTO" Grants (Japanese)	Researchers and Admin staff	22 (Researcher: 16)	JST Hideki YAMAZAKI Tomoyuki HAMADA (Japanese)	2017/4/17
Explanatory Session for "CREST/PRESTO" Grants (English)	Researchers and Admin staff	10 (Researcher: 7)	JST Hideki YAMAZAKI Tomoyuki HAMADA (English)	2017/4/17
Explanatory Session of KAKENHI Use (English)	Students, Researchers and Admin staff	13 (Researcher: 8)	OIST Yoshiteru FUJIMATSU Ayano NAKAHODO (English)	2018/5/23
Explanatory Session of KAKENHI Use (Japanese)	Students, Researchers and Admin staff	40 (Researcher: 6)	OIST Yoshiteru FUJIMATSU Ayano NAKAHODO (Japanese)	2018/5/24
KAKENHI Seminar "Decoding KAKENHI Screening Results"	Researchers and Admin staff	21 (Researcher: 16)	ASTAROTH Yousuke KUBO Takahito OSAWA Toshihiko ONUKI (Japanese (Simultaneous interpreting in English))	2018/6/11
KAKENHI Application Review by Grant Facilitators 1 (One-on-One Session)	Researchers	23	Grant Facilitators: 6 Internal: 1 External: 5 (Japanese, English)	2018/7/17 ～ 2018/7/31
Tips for Writing Proposal Using New Application Form	Students, Researchers and Admin staff	60 (Researcher: 52)	ASTAROTH Yousuke KUBO Takahito OSAWA OIST Yoshiteru FUJIMATSU Shigeyuki OTAKE (Japanese (Simultaneous interpreting in English))	2018/9/10
KAKENHI Individual Consultation	Researchers	14	ASTAROTH Yousuke KUBO Takahito OSAWA Toshihiko ONUKI (Japanese (Consecutive interpreting in English))	2018/9/10 ～ 2018/9/13
KAKENHI Application Review by Grant Facilitators 2 (Document Review)	Researchers	18	Grant Facilitators: 6 Internal: 1 External: 5 (Japanese, English)	2018/9/14 ～ 2018/10/13
Explanatory Session of KAKENHI Use (English)	Researchers	20	OIST Shigeyuki OTAKE (English)	2018/11/21

KAKENHI Support Session

Content	Participants	# of participants	Person in Charge	Date
On-Line Submission/Preparation of Application for Grant Delivery for FY2018 KAKENHI	Awardees	12	Fujimatsu, Otake, Nakahodo, Tengan	2018/4/12
On-Line Submission/Preparation of Application for Grant Delivery for FY2018 KAKENHI (JSPS Research Fellow)	Awardees (mostly students)	10	Otake, Nakahodo, Tengan	2018/5/11
On-Line Submission For FY2019 KAKENHI Application	Awardees (mostly non-Japanese)	45	Fujimatsu, Otake, Nakahodo, Tengan	2018/10/16-19
Registration for Researchmap Database	Awardees (mostly non-Japanese)	20	Fujimatsu, Otake, Nakahodo, Tengan	2018/11/21
On-Line Submission For FY2019 KAKENHI Application (JSPS Research Fellow)	Awardees (students)	4	Otake, Tengan, Koja	2019/2/4

添付資料 2. 4-3-3 平成30年度 研修実績・安全衛生

Attachment 2. 4-3-3 FY2018 Number of Employees taking training Programs, OHSS

Seminar/Training Results in FY2018 (excluding on-line training)

March 22, 2019

2018年度 セミナー及びトレーニング実績（オンライントレーニングを除く）

Occupational Health and Safety Section

Period: From April 1, 2018 to March 18, 2019

期間：2018年4月1日から2019年3月18日

安全衛生セクション

	Date 実施日	Nature of Event 種類	Name of Seminar/Training 名称	Number of Participants 参加人数	Remarks 備考
1	July 13, 2018 2018年7月13日	Seminar セミナー	New Humehood and Safety Lab Design 新ヒュームフードと安全ラボデザイン	10	
2	FY2018 平成30年度	Hands-on 実地講習	Biosafety バイオセーフティ	24	July 23 - 24 and January 31 - February 1 7月23-24日、1月31、2月1日
3	Aug. 2&3, Sept 12, 2018 2018年8月2、3日及び9月12日	Training トレーニング	Safety Training for Venders (Advanced Program) (3 times in total) 取引先向け安全トレーニング（アドバンスドプログラム） （3回実施）	214	Mandatory for venders who enter experimental areas (effective for 5 years) 実験エリアに出入りするお取引先用必須トレーニング
4	August 31, 2018 2018年8月31日	Seminar セミナー	Boat Safety Information Session 小型船舶安全情報セッション	15	
5	September 5, 2018 2018年9月5日	Training トレーニング	Safety Training for New Students 新入学生向け安全研修	34	
6	September 10, 13, 2018 2018年9月10、13日	Training トレーニング	Spill Training for Cleaning Staff 清掃スタッフ用スピル対処訓練	30	Facility, cleaning staff, security staff 施設、清掃員、警備が参加
7	September 11, 2018 2018年9月11日	Hands-on 実地講習	Training for General Research Equipment 一般研究機器実地講習	34	FY2018 students 本年度新入生が参加
8	Oct. 11, 12 and Nov. 2 2018年10月11、12日、11月2日	Training and Seminar トレーニング及びセミナー	Update Session アップデートセッション (2 times in total) （2回実施）	161	Mandatory for wet lab members and research support staff. ウェットラボメンバーと研究支援スタッフ 必須トレーニング
9	October 31, 2018 2018年10月31日	Seminar セミナー	Seminar on Import and Export of Research Materials	50	

10	December 13, 2018 2018年12月13日	Workshop ワークショップ	Workshop on Research Integrity 研究倫理に関するワークショップ	13	
11	March 4, 2019 2019年3月4日	Seminar セミナー	Study Session on Legal Procedures regarding Safety and Health, Tips and Points 安全衛生に関する公的手続きに関する勉強会	8	
12	All through the year 通年	Training トレーニング	Radiation Workers 放射線を取り扱う者 (6 times in total) (6回実施)	28	
13	All through the year 通年	Hands-on 実地講習	Hands-on training on chemical safety 化学安全実地訓練 (5 times in total) (5回実施)	12	
14	All through the year 通年	Hands-on 実地講習	Hands-on training on laser safety レーザー安全実地訓練 (1 time in total) (1回実施)	1	
15	All through the year 通年	Hands-on 実地講習	Hands-on training on lab waste 実験廃棄物安全実地訓練 (2 times in total) (2回実施)	9	Introduced from Feb. 20, 2019 本年度2月20日より実施開始
16	All through the year 通年	Orientation オリエンテーション	Safety Orientation for Family Access Card Holders 家族カードメンバー用安全オリエンテーション (7times in total) (7回実施)	14	

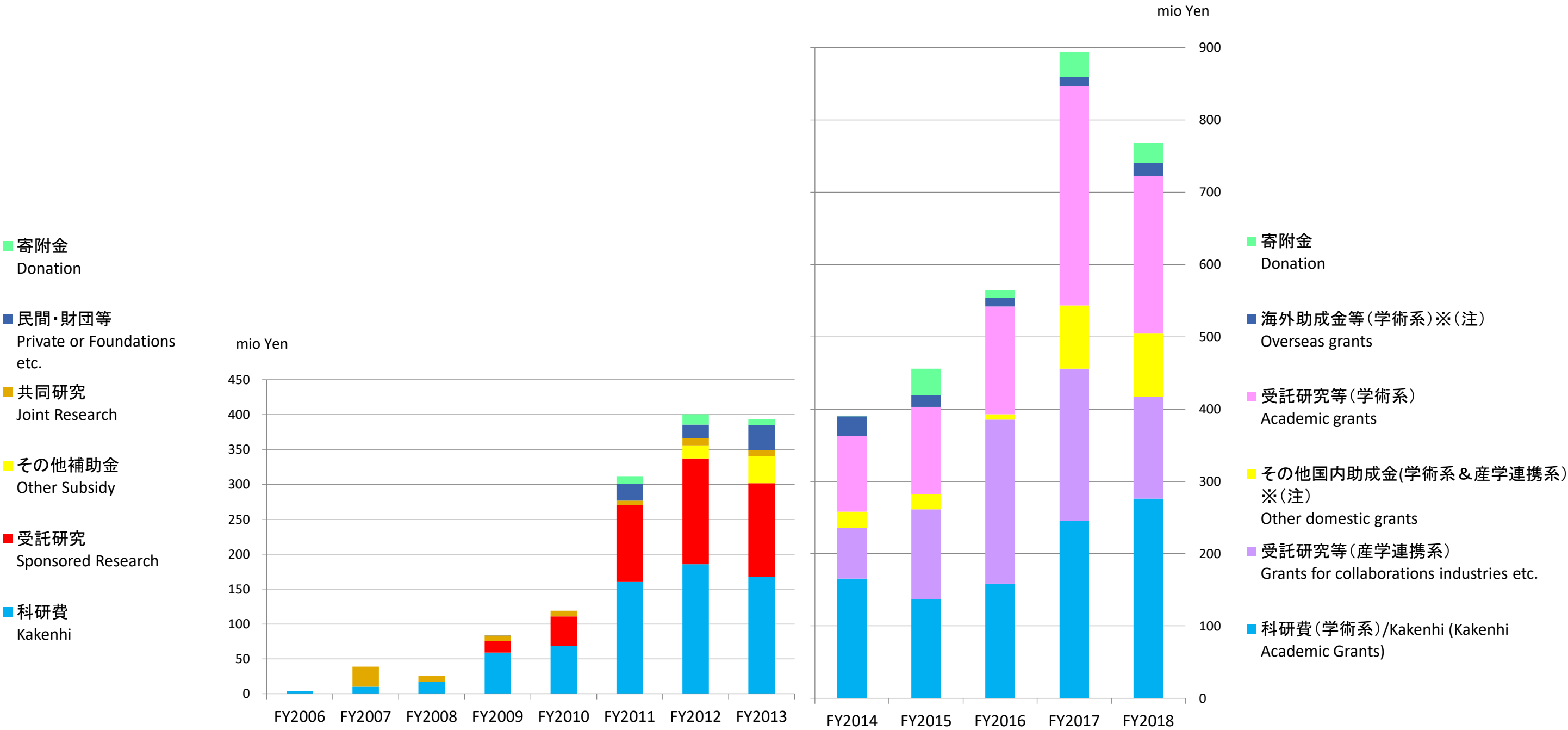
添付資料 3.1 外部資金・寄付金獲得状況

Attachment 3.1 External Grants Table and Donations Table

Unit : Yen

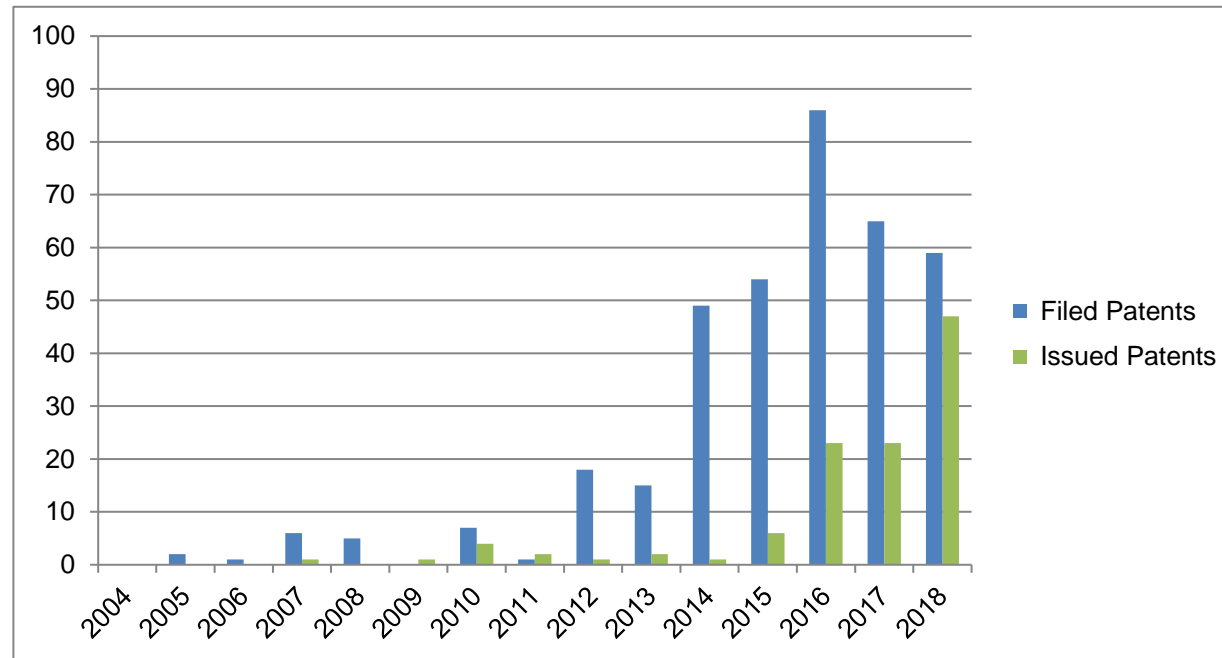
旧分類 Old Category	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011		FY2012		FY2013		新分類 New Category	FY2014		FY2015		FY2016		FY2017		FY2018	
	Amount	Amount	Amount	Amount	Amount	Amount	#	Amount	#	Amount	#		Amount	#	Amount	#	Amount	#	Amount	#	Amount	#
科研費 Kakenhi	3,800,000	10,293,000	17,225,000	58,923,142	68,281,464	160,041,305	26	185,570,000	30	168,017,777	40	科研費（学術系）/Kakenhi (Kakenhi Academic Grants)	165,266,341	54	137,160,016	47	158,517,697	56	245,254,159	86	276,201,309	109
受託研究 Sponsored Research	0	0	0	16,200,000	42,751,000	110,261,800	11	151,397,660	14	133,566,955	13	受託研究等（産学連携系） Grants for collaborations industries etc.	69,994,690	10	124,337,784	10	227,151,400	18	210,513,791	20	140,701,256	21
その他補助金 Other Subsidy	0	0	0	0	0	0	0	19,120,000	2	39,161,300	3	その他国内助成金(学術系&産学連携系)※（注） Other domestic grants	22,635,500	11	20,989,419	6	7,116,234	10	87,587,000	37	87,523,000	48
共同研究 Joint Research	0	28,500,000	8,268,750	8,357,625	8,000,000	6,500,000	1	9,781,000	2	8,190,000	3	受託研究等（学術系） Academic grants	104,967,000	5	120,758,500	7	149,131,000	6	302,781,001	10	217,504,200	10
民間・財団等 Private or Foundations etc.	0	0	0	162,000	0	23,969,000	3	19,720,574	3	35,811,969	10	海外助成金等（学術系）※（注） Overseas grants	27,166,059	3	16,015,264	3	11,916,945	1	13,335,884	2	18,395,330	4
寄附金 Donation	0	0	0	0	0	10,822,000	6	14,793,155	11	8,353,825	12	寄附金 Donation	1,075,960	7	36,417,498	13	10,644,779	13	34,747,672	27	28,227,199	24
合計/Total	3,800,000	38,793,000	25,493,750	83,642,767	119,032,464	311,594,105	/	400,382,389	/	393,101,826	/		391,105,550	/	455,678,481	/	564,478,055	/	894,219,507	/	768,552,294	/

※（注）FY2017以降はフェローシップの金額を含む Fellowship is included from FY2017



Attachment 4. 1 Patent Status

Fiscal Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Filed Patents	0	2	1	6	5	0	7	1	18	15	49	54	86	65	59
Issued Patents	0	0	0	1	0	1	4	2	1	2	1	6	23	23	47



Industry-related Grants, Collaborations, and Agreements

No	Title	New/ Continuing	Funding Source	Collaborators	Details	OIST Partner
1	Supporting Project for Strategic Development of Fundamental Technology (METI)	Continuing	Okinawa General Bureau	Okinawa Protein Tomography	Development of COMET 2D	Professor Ulf Skoglund
2	JST Program for Creating Start-ups from Advanced Research and Technology (START)	Continuing	Japan Science and Technology Agency	Bio-Sight Capital	Development of new eco wastewater treatment system using microbial fuel cell	Adjunct Professor Igor Goryanin
3	Alien Species Countermeasures Project	Continuing	Okinawa Prefectural Government	Okinawa Prefectural Environmental Science Center	Countermeasures against fire ants	Assistant Professor Evan Economo
4	Development of Cross-cutting Breeding Techniques and New Feed from Abundant Materials for Fishery Products	Continuing	National Agriculture and Food Research Organization		Genomic analysis of pearl oysters and development of its DNA marker for improvement of disease resistance and pearl quality	Professor Noriyuki Satoh
5	Okinawa Science and Technology Innovation Development Project	Continuing	Okinawa Prefectural Government	University of the Ryukyus	DNA sequencing related to the development of fermented beverage made from rice malt	Assistant Professor Hidetoshi Saze
6	Energy Infrastructure Research Project with Cutting-Edge Technology	Continuing	Sony Computer Science Laboratories		Power Exchange in the Integrated Environment of EV and DC Grid	Adjunct Professor Hiroaki Kitano
7	Okinawa Science and Technology Innovation Development Project	Continuing	Okinawa Prefectural Government	Okinawa National College of Technology	Cell Function Analysis and Signal Transmission Analysis of Okinawan Biological Resources	Professor Tadashi Yamamoto
8	Growing Field Leading Project Creation Program	Continuing	Okinawa Prefectural Government	Okinawa Prefectural Environmental Science Center	Microbial Fuel Cells to Process Swine Waste	Adjunct Professor Igor Goryanin
9	Growing Field Leading Project Creation Program	Continuing	Okinawa Prefectural Government	Okinawa Prefectural Environmental Science Center	Microbial Fuel Cells for Soil Remediation	Adjunct Professor Igor Goryanin
10	OIST Entrepreneurship Support Program	New	Okinawa Prefectural Government		Startup Accelerator Program	Institutional
11	Collaborative Research Project	New		Confidential	Area: Environment	Assistant Professor Evan Economo
12	Collaborative Research Project	New		Confidential	Area: Bio	Assistant Professor Keiko Kono
13	Collaborative Research Project	Continuing		Confidential	Area: Bio	Assistant Professor Keiko Kono
14	Collaborative Research Project	Continuing		Misawa Homes Institute of Research and Development	Area: Environment	Adjunct Professor Hiroaki Kitano
15	Collaborative Research Project	Continuing		Institute of Biological Resources	Area: Drug Development	Professor Tadashi Yamamoto
16	Collaborative Research Project	Continuing		PUES	Area: Automobile	Adjunct Professor Hiroaki Kitano
17	Collaborative Research Project	Continuing		Confidential	Area: Chemistry	Associate Professor Fujie Tanaka

18	Collaborative Research Project	Continuing		Confidential	Area: Drug Development	Professor Noriyuki Satoh
19	Collaborative Research Project	Continuing		Confidential	Area: Energy	Associate Professor Yabing Qi
20	Collaborative Research Project	Continuing		Confidential	Area: Environment	Professor Noriyuki Satoh
21	Collaborative Research Project	Continuing		Confidential	Area: Energy	Adjunct Professor Hiroaki Kitano
22	Collaborative Research Project	Continuing		Confidential	Area: Drug Development	Associate Professor Yohei Yokobayashi
23	Collaborative Research Project	Continuing		Confidential	Area: Energy	Assistant Professor Yabing Qi
24	Private Grant	Continuing		Naito Foundation	Bio	Assistant Professor Keiko Kono
25	Private Grant	New		The Nakajima Foundation	Quantum Physics	Yuimaru Kubo
26	MOU	New		DeepCore	AI	Institutional
27	MOU	Continuing		Republic of Maldives Kokyo Tatemono	Energy	Professor Tsumoru Shintake
28	Cooperation Agreement	Continuing		Mizuho Shuzo	Environment	Adjunct Professor Igor Goryanin
29	License Agreement	Continuing		Okinawa Protein Tomography	Bio	Professor Ulf Skoglund
30	License Agreement	Continuing		Confidential	Environment	Professor Noriyuki Satoh
31	License Agreement	New		Confidential	Bio	Institutional
32	License Agreement	New		O-Force	Pharma	Institutional
33	Material Transfer Agreement	New		Confidential		Institutional
34	Material Transfer Agreement	New		Confidential		Institutional
35	Non Disclosure Agreement	New		Confidential		Institutional
36	Non Disclosure Agreement	New		Confidential		Institutional
37	Non Disclosure Agreement	New		Confidential		Institutional

38	Non Disclosure Agreement	New		Confidential		Institutional
39	Non Disclosure Agreement	New		Confidential		Institutional
40	Non Disclosure Agreement	New		Confidential		Institutional
41	Non Disclosure Agreement	New		Confidential		Institutional

Exhibitions Promoting OIST Research and Technologies

No	Program	Date	Place	Organizer	Details	Remarks
1	Medix Tokyo	Jun 2018	Tokyo Big-Sight	Reed Exhibitions Japan	Booth exhibition	
2	ConnecTech Asia 2018 (NXT Asia)	Jun 2018	Marina Bay Sands, Singapore	UBM	Booth exhibition	
3	Okinawa Promotion Seminars	Jul 2018	Hilton Osaka Tokyo Royal Park Hotel	Okinawa Prefectural Government	Booth exhibition and partnering meetings	
4	BioJapan 2018	Oct 2018	Pacifico Yokohama	BioJapan Organizing Committee	Booth exhibition and partnering meetings	
5	Okinawa Venture Market	Dec 2018	Okinawa Cellular Park Naha	OKINAWA Venture Market Management Office	Booth exhibition and partnering meetings	
6	MRO Aviation Meeting Okinawa	Jan 2019	Okinawa Convention Center	BCI Aerospace	Booth exhibition and partnering meetings	
7	nano tech 2019	Jan 2019	Tokyo Big-Sight	nano tech Executive Committee	Booth exhibition and partnering meetings	
8	JST Technology Showcase	Jan 2019	JST Tokyo	Japan Science and Technology Agency	Presentations and partnering meetings	
9	SLUSH Tokyo	Feb 2019	Tokyo Big-Sight	SLUSH Tokyo	Booth exhibition and partnering meetings	
10						

No	Title	Date	Speaker/Instructor	Number of Participants
1	Innovation Seminar Series: "Investors View on Pharma and Biotech", Dr. Hans Kuepper	Jun 2018	Hans Kuepper Global Life Science Ventures USA	40
2	Technology Startup Accelerator Summit	Jun 2018	Beyond Next Ventures Japan	63
3	Fireside Chat: Introduction to the Deepcore Articial Intelligence Incubator in Tokyo	Sep 2018	Kazuya Tanaka, Shin Ehara, Yamada Tsutomu DeepCore, Japan	14
4	Seminar: "Developing Biomarkers in the Era of Precision Medicine", Dr. Patrick Tremblay	Oct 2018	Dr. Patrick Tremblay Caprion Biosciences Inc., USA	40
5	BEENEXT Venture Capital Pitch Event	Oct 2018	BEENEXT, ANRI, Euglena Fund Japan	23
6	OIST-NTHU Global Resarch and Industry Alliance Meeting	Oct 2018	National Tsing Hua University Taiwan	17
7	Course: Introduction to Intellectual Property for Graduate Students	Nov 2018	Chris Tanner FYPA PLLC, USA	40
8	Seminar: Intellectual Property for Researchers	Nov 2018	Chris Tanner FYPA PLLC, USA	20
9	World Intellectual Property (WIPO) Presidents Summit on Intellectual Property and Technology Transfer	Nov 2018	World Intellectual Proerty Organization Switzerland	70
10	Innovation Seminar Series: "Engineering Biology", Dr. Massimo Merighi	Dec 2018	Dr. Massimo Merighi Ginkgo Bioworks, USA	41
11	Seminar: "A Journey from Research to Entrepreneurship"	Dec 2018	Startup Okinawa Club Innovation Forum Okinawa	18
12	Course: Introduction to Entrepreneurship	Feb 2019	George Washington University, USA	22
13	Lean Startup Entrepreneurial Training Program	Feb 2019	George Washington University, USA	25
14	Lean Startup "Train-the-Trainer" Program	Feb 2019	George Washington University, USA	5
15	Seminar: Software IP	Mar 2019	Dr. Masaki Mine Japan Patent Attorneys Association	6
16	OIST x NewsPicks "DeepTech Evolves the World" Forum Tokyo	Mar 2019	OIST x NewsPicks Japan	197
			Total Participants	641