

OIST vision and stakeholders expectation: which deliverables ?

NSF – ANR Accountability Workshop – June 2012

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OKINAWA INSTITUTE OF SCIENCE AND TECHNOLOGY GRADUATE UNIVERSITY

Time Flow to the Opening of OIST

Mar. 2002 Creation of Graduate University stipulated by Okinawa Promotion Special Measure Act



Sep. 2005 OIST Promotion Corporation (OIST PC) Inauguration

Jul. 2009 OIST School Corporation Act is enacted.

Objectives of OIST PC :

- 1 Conduct world class research in Okinawa
- 2 Prepare for the Graduate University



Mar. 2011 Applying for Accreditation



Nov. 2011 Accreditation / Establishment of OIST SC and Graduate University



Sep. 2012 Commencement of Students





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OIST Campus Construction Plan



OIST School Corporation “Mission Statement”

“ The OIST Graduate University shall conduct internationally outstanding education and research in science and technology, and thus contribute to the sustainable development of Okinawa, and promote and sustain the advancement of science and technology in Japan and throughout the world.”

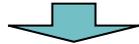
Okinawa Institute of Science and Technology School Corporation Act
(2009)



OIST's Objectives

(OIST School Corporation Act)

By conducting internationally distinguished education and research
in science and technology in Okinawa

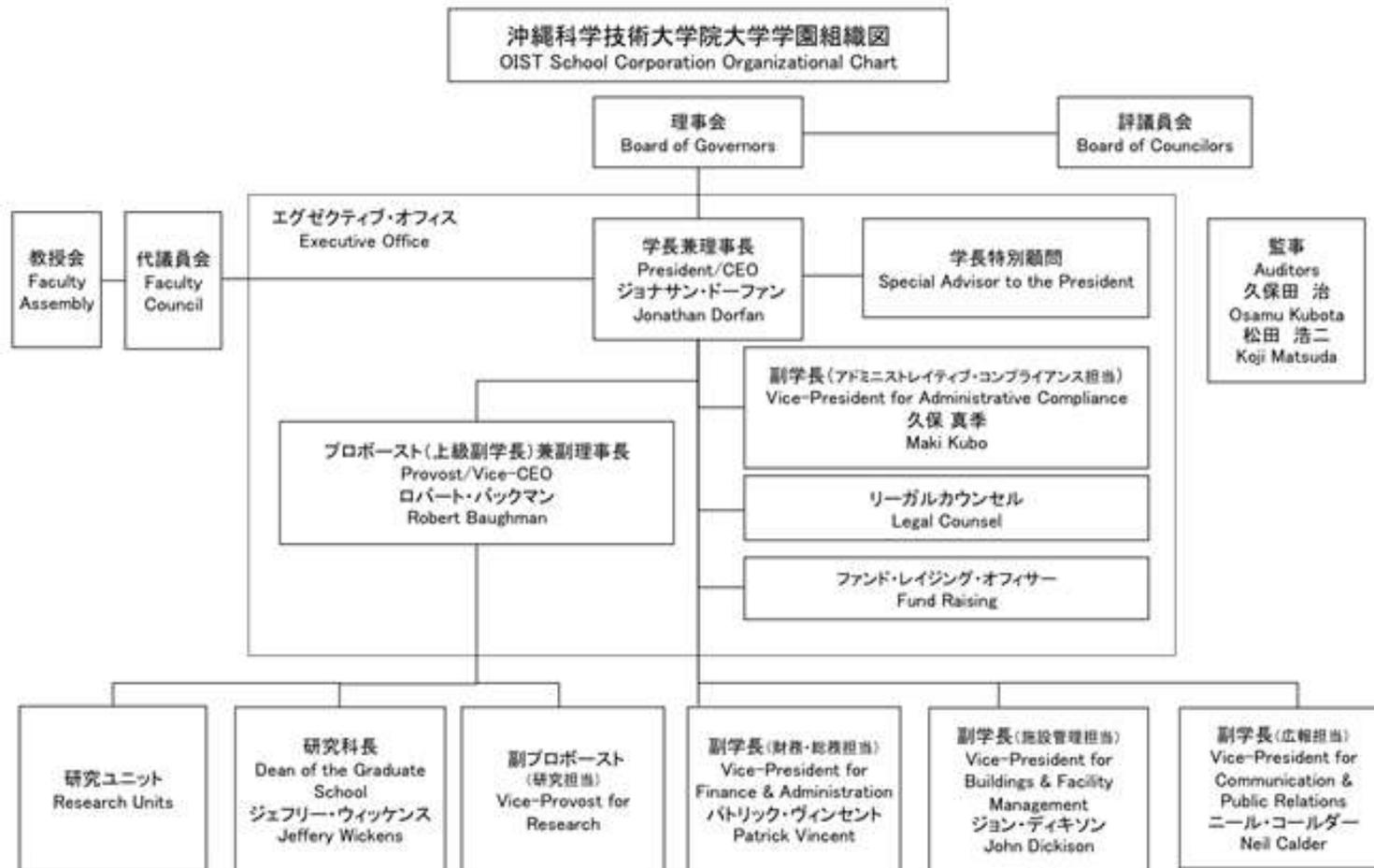


Contribute to the promotion and self-sustaining development of Okinawa

Contribute to the development of science and technology worldwide



An unusual Governance structure for Japan



Planning framework and evaluation approach

Every fiscal year, the CEO/President works together with the Vice CEO/Provost and the other executive officers of the university to compile and propose the annual Business Plan. This Business Plan has the following 5 chapters in accordance with the Cabinet Office Ordinance (Ordinance for enforcement of the OIST School Corporation Act (Cabinet Office Ordinance No. 59 of 2011));

- 1) Education and research,
- 2) Governance and administrative transparency and efficiency,
- 3) Finance,
- 4) Contribution to self-sustainable development of Okinawa, and
- 5) University campus and community development; safety and environment protection.

Each chapter has subchapters consisting of Goals and Actions.

The draft Business Plan will be submitted to the Board of Councilors (BOC) for their review and to the Board of Governors (BOG) for their final approval. The plan will be submitted to the Prime Minister for its approval based on the OIST SC Act. The government will provide financial support to the OIST SC based on the assumption that the OIST SC will implement the approved Business Plan appropriately.

For effective and transparent monitoring of progress against the plan, metrics will be provided for sub-sections of the Business Plan whenever appropriate. These metrics will also help conduct time series analyses of the growth of OIST Graduate University and international comparison with bench-marked institutions. Most of the metrics should be evaluated in the long run in the spirit of achieving the goals described above. We are aware of the importance of quality of our outputs, and these metrics themselves should not be the objectives.



March 11 2011

North-East Earthquake and Fukushima accident

Long term perspective in the mission and founding principles are maintained.

Increased “desirability” to diversify funding sources besides Government subsidies,

Great expectations for OIST delivery and “impact”.



1. OIST's Objectives / deliverables

(OIST School Corporation Act)

QUALITY OF FACULTIES AND STUDENTS (IN and OUT)

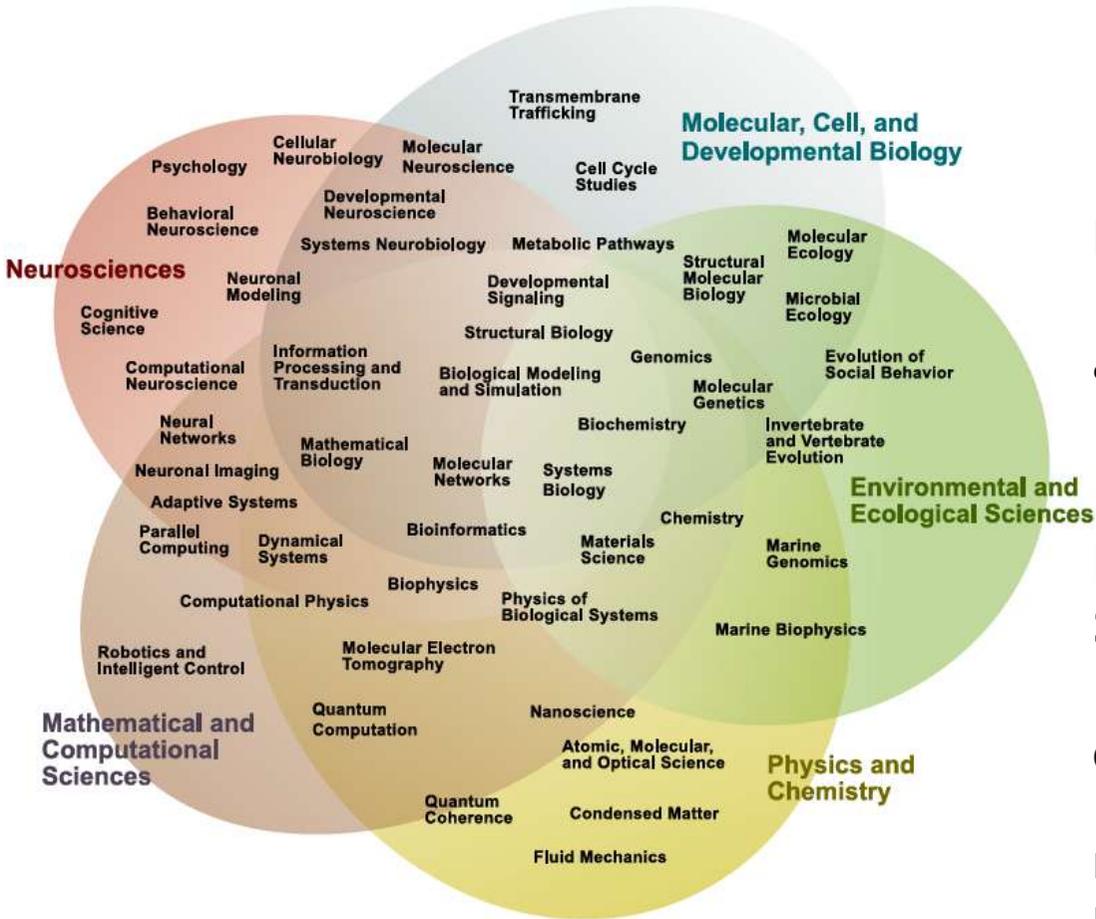
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Research driven by Inter-Disciplinarity



◎ Current Academic and Research Fields
 - Neuroscience, Molecular, Cell, and Developmental Biology, Physics and Chemistry, Mathematical and Computational Biology, and Environmental and Ecological Sciences

◎ Moving Rapidly Towards a Balance between the Life/Bio and the Physical Sciences

- Have active recruitment for physicists: condensed matter physics; AMO; bio-physics; Nano-science; quantum computation; membranes; computational physics; fluid mechs.

Quality of researchers

- Number of Faculty at present is 43 (Japanese: 14, Non-Japanese: 29) as of May 1, 2012



Brain Mechanisms for Behaviour Unit

Gordon Arbuthnott



Collective Interactions Unit

Mahesh Bandi



Molecular Genetics Unit

Sydney Brenner



Quantum Systems Unit

Thomas Busch



Fluid Mechanics Unit

Pinaki Chakraborty



Femtosecond Spectroscopy Unit

Keshav Dani



Computational Neuroscience Unit

Erik De Schutter



Neural Computation Unit

Kenji Doya



Biodiversity and Biocomplexity Unit

Evan P. Economo



Biological Systems Unit

Igor Goryanin



Mathematical and Theoretical Physics Unit

Shinobu Hikami



Microbiology and Biochemistry of Secondary Metabolites Unit

Holger Jenke-Kodama



Open Biology Unit

Hiroaki Kitano



Quantum Dynamics Unit

Denis Konstantinov



Optical Neuroimaging Unit

Bernd Kuhn



Genomics and Regulatory Systems Unit

Nicholas M Luscombe



Integrative Systems Biology Unit

Tatiana Marquez-Lago



Information Processing Biology Unit

Ichiro Maruyama



Developmental Neurobiology Unit

Ichiro Masai



Ecology and Evolution Unit

Alexander Mikheyev



Physics and Biology Unit

Jonathan Miller



Marine Biophysics Unit

Satoshi Mitarai



Light-Matter Interactions Unit

Sile Nic Chormaic



Faculty 2



Developmental Signalling Unit

Mary Ann Price



Energy Materials and Surface Sciences Unit

Yabing Qi



Trans-Membrane Trafficking Unit

Fadel Samatey



Marine Genomics Unit

Noriyuki Satoh



Plant Epigenetics Unit

Hidetoshi Saze



Theory of Quantum Matter Unit

Nic Shannon



Quantum Wave Microscopy Unit

Tsumoru Shintake



Mathematical Biology Unit

Robert Sinclair



Structural Cellular Biology Unit

Ulf Skoglund



Nanoparticles by Design for Nanotechnology and Biomedical Applications Unit

Mukhles Ibrahim Sowwan



Cellular and Molecular Synaptic Function Unit

Tomoyuki Takahashi



Chemistry and Chemical Bioengineering Unit

Fujie Tanaka



Human Developmental Neurobiology Unit

Gail Tripp



Formation and Regulation of Neuronal Connectivity Research Unit

David Van Vactor



Neurobiology Research Unit

Jeff Wickens



Molecular Cryo-Electron Microscopy Unit

Matthias Wolf



Cell Signal Unit

Tadashi Yamamoto



G0 Cell Unit

Mitsuhiro Yanagida



Neuronal Mechanism for Critical Period Unit

Yoko Yazaki-Sugiyama



Continuum Physics Unit

Gustavo Gioia



Quality of Students

- 200 applications.
- 80 candidates asked to attend one of the Admissions Workshops that were held in January and March.
- Final selection of 34 students from 18 different nations for the Doctoral Program.
- The first academic year begins in September 2012.

(applications are now open for admission to PhD Program September 2013 intake)

Research performance metrics

Mostly historic data at this stage

Researchers' personal history and experiences
Other universities which also offered admission
Status of academic papers published, citation
Record of awards
Record of acquiring external funds

Status of students recruitments “among the best worldwide”

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SCIENTIFIC AND
TECHNOLOGICAL VALUE
ADDED



Research Achievements (as of May 2012)

- ◎ 44 Faculty in full operation (as of May 1, 2012)
- ◎ 247 researchers (99 Non-Japanese) (as of May 1, 2012)
- ◎ More than 47 joint research projects worldwide (FY2011)
- ◎ Over 395 research publications (FY2011)
- ◎ 18 patent applications, 8 accepted (as of March 31, 2012)



Workshops - 10 International Workshops in FY2011

549 participants (379 non-Japanese)

- Quantative Evolutionary and Comparative Genomics 2011 (QECG2011)
- [OCNC 2011] Okinawa Computational Neuroscience Course 2011
- Developmental Neurobiology Course
- Molecular & Structural Organization of Presynaptic Function and Plasticity (Presynaptic Organization)
- EBI Road Show
- Asia-Pacific Youth Science Exchange Forum
- Course in Molecular Neuroanatomy (MNA) 2011
- The 5th International Workshop on Cell Regulations in Division and Arrest
- Collaborative Computational Project No. 4 Software for Macromolecular X-Ray Crystallography (CCP4)
- Garuda Seven



※ In addition to the above workshops hosted by OIST, 5 co-sponsored workshops are held.



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DIRECT AND INDIRECT
CONTRIBUTION TO THE
DEVELOPMENT OF OKINAWA



How World-class Research & Education Contributes to the Development of Okinawa

1. Okinawa will develop into an international hub for science and technology.

Workshops, seminars, and other scientific events attract many researchers and students to Okinawa from Japan and abroad and facilitate their exchange.

2. R&D Cluster will be developed in Okinawa

International culture and geographical advantage of Okinawa will attract entrepreneurs and venture capitals from Japan and abroad. OIST will play a role of catalyst.

3. Fostering Human Capital of the Next Generation

OIST will foster future scientists who will play important roles in academia and industry both in Japan and abroad, and provide opportunity to young people in Okinawa to perform on a world class level.

International Symposium Toward the Development of an R&D Cluster in Okinawa Oct2010 & Mar2012



2nd INTERNATIONAL WORKSHOP RECOMMENDATION TOWARDS THE DEVELOPMENT OF AN R&D CLUSTER IN OKINAWA

Recommendations:

Any one entity acting alone or in isolation is insufficient to build and sustain the cluster.

>> *Okinawa should establish a new autonomous organization* that is responsible for planning, coordinating, implementing and monitoring programs related to R&D cluster development.

Okinawa should take *a holistic approach* to develop the entrepreneurial environment by *implementing diverse projects in parallel*. At the workshop,

45 action items in 7 areas were recommended as programs that impact over the short or long-term. In the fields of :

1. Education
2. Recruitment
3. Promotion of Entrepreneurship
4. Business Resources
5. Financial Resources
6. Networking
7. Infrastructure



Local Relationships

Faculty Lectures



Dr. Yabing Qi
Yamada Junior High School Students
December, 2011



Dr. Dani Keshav
Onna Junior High School Students
January, 2012



Dr. Marylka Yoe Uusisaari
Nakadomari Junior High School Students
December, 2012



Dr. Lars-Goran Ofverstedt
Afuso Junior High School Students
January, 2012



Local Relationships

Educational Program for Prefecture High School



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QUALITY OF ADMINISTRATION AND OPERATION



ADMINISTRATIVE and OPERATIONAL EFFICIENCY

- IT administrative Systems (ERP)
- Deal with a culturally diverse community (administrators, researchers, multicultural)
- Sustainability of operation (risk assessment)

- Shared research Equipment
- Procurement strategy etc.

- Financial communication (e.g. communication with potential sponsors - US Foundation)

The challenge of being young and “multicultural” for evaluation metrics

- 7 years old research institution (!)
- 6 months old Graduate University (!!)
- “Focus” on quality, “interdisciplinarity”, “interculturality” and collaboration (not on sheer size)

Usual metrics not adapted for young and intercultural institution: designed for ex-post evaluation, and within a given system of reference.

To do evaluation in isolation is futile and often lead to duplication of work ... but can be a good business for consulting firms.

What else ?



Quote: ELMER B. STAATS Comptroller General of the United States - 1979

The key issue is how to assure appropriate stewardship for funds spent in support of research, without imposing excessive controls, direction, and administrative burden on research grantees ...

The Federal Government must continue to provide major support for basic research in both natural and social sciences and the engineering disciplines.

Sponsors must recognize that the very nature of basic research is long term and exploratory, with little or no assurance of predetermined positive results from the outset.

More specifically, university officials need to thoroughly appraise their present financial procedures to assure compliance with existing Federal requirements, as well as to present university views concerning proposed changes to these requirements.

Also, it might be helpful for university associations and professional societies to promote greater public understanding of the nature and importance of scientific research, and how autonomy is central to its continued excellence. Again, rather than stressing the uniqueness of university research, a focus on what it needs to operate optimally is needed.

ELMER B. STAATS
COMPTROLLER GENERAL OF THE UNITED STATES
FEDERAL RESEARCH GRANTS: MAINTAINING PUBLIC ACCOUNTABILITY WITHOUT INHIBITING CREATIVE RESEARCH
TO THE NATIONAL GRADUATE UNIVERSITY'S NINETEENTH INSTITUTE ON FEDERAL FUNDING
APRIL 10, 1979



Potential for enhancing effectiveness of data mining

Evaluation of research activities presents a particular challenge because of the intangible nature of the output: knowledge. The question is "how good are we at generating and moving knowledge".

How to go beyond anecdotal evidences ?

The broad availability of electronic information is potentially helpful, however there are no effective machine readable identifiers: **is there not a need for universal and unequivocal identifiers** of researchers, research institutions and research funders, patents, conferences etc. **in order to facilitate and improve basic referencing and data mining ?**

The research community would be the first beneficiary of a proactive attitude to organize digital information and to improve its traceability.

Address global science administration issues.

- R&D activities and expenditures are huge and global
- Research institutions and funding agencies compete for resources and the best researchers, are very diverse, but have also many in common:
 - Quasi universal model from Chile to China
 - International Programs (ITER, CERN, SCAR...)
 - Collaborations agreements, MTAs
 - Researchers mobility (particularly young researchers)
 - World scale oligopolies for research equipment, scientific literature (citation index ...)
 - Impact Evaluations methods and source data

Is there not a compelling case for a global approach?



THANK YOU

