

**The Guideline for Application for 2015 Collaborative Research  
and Research Meeting  
National Institute of Genetics,  
Research Organization of Information and Systems**

**1. The Guidelines for Application**

(1) Collaborative Research

National Institute of Genetics solicits Collaborative Research to be conducted between researchers from other universities or institutes and NIG faculty using NIG facilities and equipment on the proposed project. There are three types of research project: Collaborative Research (A1), (A2) and (B).

Travel expenses are provided to the researchers visiting NIG. They should be conducted during the period of time from April 1, 2015 to March 31, 2016. Applicant may submit the same research subject as a new application up to three years, in principle.

① Collaborative Research (A1)

- Eligible applicants are researchers affiliated with domestic or overseas universities or research institutes. Travel expenses are provided for researchers visiting NIG for the Collaborative Research.
- Up to 200,000 JPY can be requested by an applicant.

② Collaborative Research (A2)

- Eligible applicants are researchers affiliated with overseas universities or research institutes. Travel expenses are provided for researchers visiting NIG for the Collaborative Research.
- More than 200,000JPY up to 500,000JPY can be requested by an applicant.
- Several applications are to be accepted.
- As an option, you can apply A1 and A2 simultaneously. If you wish to take this option, please put a circle mark in the appropriate empty space in the application, and submit A1 application with a research plan that corresponds to the budget up to 200,000JPY.

③ Collaborative Research (B)

- Eligible applicants are researchers affiliated with domestic or overseas universities or research institutes. Travel and research expenses are provided. Research expenses

are to be used only for the expendable items in NIG.

- Applicant or his/her collaborative research members whose names are listed on the application need to stay at NIG for more than 14 days during research period.
- Up to 1,000,000 JPY research expenses including 200,000 JPY travel expenses can be requested by an applicant.
- Several applications are to be accepted.
- As an option, applications rejected for not meeting criteria of Collaborative Research (B) can be a subject of the screening of Collaborative Research (A1) upon applicant's request. If you wish to take this option, please put a circle mark in the appropriate empty space in the application.

## (2) Research Meeting

The research meeting will be held among small number of researchers from inside and outside NIG. It is to be held at NIG, in principle. The travel expenses are provided to the researchers visiting NIG.

The meeting must be held in the period from April 1, 2015 to March 31, 2016.

- Eligible applicants are NIG faculty and researchers affiliated with domestic or overseas universities or research institutes and travel expenses for attending the meeting will be provided.
- Up to 500,000JPY can be requested by an applicant.
- The Research Meeting is to be held at NIG, in principle. It can be held outside NIG only if its purpose fits to the principle of the Research Meeting, and also if it is clearly understood that the meeting is uniquely held by NIG. (For example, a research meeting held on the occasion of another large conference/meeting is acceptable, provided the program of the meeting indicates that it is held as "National Institute of Genetics, Research Meeting")

## **2. Applicants**

The applicant should be, in principle, a researcher affiliated with a university, an inter-university collaborative research institute and independent administrative organizations in Japan or a researcher affiliated with an overseas university or a research institute.

## **3. Application**

Please send an application form by post to the administration office with the administrative approval. (Any supervisory authority of the applicant is acceptable. In

the case of the overseas applicants, the approval is exempt from this requirement.)

An application form can be downloaded from the NIG website.

<http://www.nig.ac.jp/welcome/kyoudoukenkyu/annai.html>

#### **4. Submission of the application form**

Please write “Enc. Collaborative Research Application Form” in red letters on the envelope and send it by registered or certified mail. Those affiliated with research institute outside Japan can submit an application in PDF file via e-mail. In that case, please write “Application for NIG Collaborative Research + Name” in the subject line of your e-mail. A confirmation e-mail will be sent to you once your application has been received. If you do not receive it, please contact us immediately.

Mailing Address

Research Promotion Team, General Affairs and Project Section,

Department of Administration

National Institute of Genetics, Research Organization of Information and Systems

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411-8540 JAPAN

Phone: +81-55-981-6728

E-mail: [kyodo-mail@nig.ac.jp](mailto:kyodo-mail@nig.ac.jp)

Application Deadline:

Applications must arrive no later than 12:00 pm on January, 15<sup>th</sup>, 2015.

(Japan standard Time)

#### **5. Notification of the Outcome of Selection**

The outcome of application will be notified to the successful candidates after screening.

The acceptance list will be also posted on NIG website.

#### **6. Expenses Provided**

The travel and research expenses are to be provided by NIG based on the rules of Research Organization of Information and Systems (ROIS).

Accommodation fee for those who stay at our guest house will be 2,500JPY/night, and for those who stay at a hotel in the city will be 6,000JPY/night.

#### **7. The Report of Research**

The report of Collaborative Research or Research Meeting should be submitted within

30 days after finishing the research.

Please understand that the report might be published in an annual report of NIG.

When you write papers and make presentation within the framework of this grant, you are requested to specifically mention this grant as follows:

For Japanese : 国立遺伝学研究所共同研究 (2015-A1\*, A2\*, あるいは B\*)

For English : NIG Collaborative Research Program (2015-A1\*, A2\*, or B\*)

(\* : Reference number in the acceptance list)

In the case of thesis, it or its copy may also be submitted to the Director-General.

## 8. Others

(1) We strongly hope that an applicant should consult with the faculty of NIG as to the following details before submitting an application form.

(I) Collaborative Research : Proposed Research Title, expected participants,  
required expenses and other necessary matters.

(II) Research Group : Name of the Research Group, purpose of the research,  
proposed conducting date, expected participants,  
required expenses and other necessary matters.

(2) Attached please see the document regarding the guidelines of research and the faculties in charge.

If you would like to call the faculties, please dial +81-55-981-\*\*\*\*.

(\*\*\*\* : extension number)

(3) NIG makes available to our facilities for the Collaborative Research and Research Group.

(4) If you experiment for gene recombination and/or animals, you are requested to submit of Experiment-on-Gene Recombination plan and/or Experiment-on-Animals plan application form through the representative of NIG after acceptance of your application. We strongly hope that you comply with regulations and conduct the research properly.

(5) If you use Radioisotope at NIG, you are requested to register for Radiation Worker after acceptance of your application.

(6) Those who visit NIG for attending meeting or conducting research are to stay at our guest house, in principle.

However, they can stay at a hotel in the city if the guest house is fully booked.

- (7) Regarding intellectual property created in the Collaborative Research of NIG, Ownership of the right is to be considered based on the regulations of ROIS employee invention.
- (8) NIG assures that private information for this application should be used only for examining the proposal. Regarding the accepted proposal, the representative of the research, his/her institute and the research project title will be posted on NIG website and a publication.
- (9) Please note that NIG would not prepare the form of “business-trip request” for the Collaborative Research and Research Group because of simplicity of procedures. Please contact us mentioned below if needed.

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## Research outline

(Updated: September 1st,2015)

Department	Division	Faculty	Ext.	Research outline
Molecular Genetics	Centrosome Biology	KITAGAWA, Daiju / Professor	5828	We mainly focus on understanding the mechanisms of centrosome duplication by using the combination of innovative and multi-disciplinary approaches. We are utilizing <i>C. elegans</i> embryos and human cell culture as model systems.
	Molecular Mechanisms	SEINO, Hiroaki / Assistant Professor	6745	I am studying molecular mechanisms of cell cycle regulation in fission yeast by genetic and biochemical approaches.
Cell Genetics	Microbial Genetics	ARAKI, Hiroyuki / Professor TANAKA, Seiji / Assistant Professor HIZUME Kohji / Assistant Professor	6754 6758 6757	Genetic and biochemical approach to elucidate molecular mechanism and regulation of eukaryotic DNA replication and checkpoint control using budding yeast
	Symbiosis and Cell Evolution	MIYAGISHIMA, Shin-ya / Professor	9411	In order to understand endosymbiotic evolution of eukaryotes, we are studying coordinating mechanisms of eukaryotic cell and organelle/endosymbiont proliferation using algae, plants, and protists.
Developmental Genetics	Neurogenetics	IWASATO, Takuji / Professor MIZUNO, Hidenobu / Assistant Professor	6773 6777	We are studying molecular and cellular mechanisms of neuronal circuit development in the mammals, using mouse genetics and other related methods.
	Molecular and Developmental Biology	KAWAKAMI, Koichi / Professor ASAKAWA, Kazuhide / Assistant Professor MUTO, Akira / Assistant Professor	6740 6739 6739	Genetic studies on development, morphogenesis and behaviors by using a model vertebrate zebrafish.
	Population Genetics	SAITOU, Naruya / Professor JINAM, Timothy / Assistant Professor	6790 6787	We study evolution of genes and genomes, in particular human evolution. We also develop methods for study of genome evolution.
Population Genetics	Evolutionary Genetics	AKASHI, Hiroshi / Professor	6793	Mechanisms of genome evolution. Especially weak selection and biosynthetic constraints.
	Ecological Genetics	KITANO, Jun / Professor ISHIKAWA, Asano / Assistant Professor	9415 9416	We use threespine stickleback fishes to investigate the genetic and molecular mechanisms underlying adaptation and speciation.

<b>Integrated Genetics</b>	<b>Human Genetics</b>	INOUE, Ituro / Professor NAKAOKA, Hirofumi / Assistant Professor	6795 6796	Medical genomic study using high-throughput sequencing data is a promising procedure to create an innovate healthcare system and open a new aspect of population genetics.
	<b>Agricultural Genetics</b>	KAKUTANI, Tetsuji / Professor TARUTANI, Yoshiaki / Assistant Professor INAGAKI, Soichi / Assistant Professor	6801 6807 6807	Control and function of epigenetic gene modifications in Arabidopsis.
	<b>Brain Function</b>	HIRATA, Tatsumi / Professor KAWASAKI, Takahiko / Assistant Professor YAN, Zhu / Assistant Professor	6721 6721 6721	Development of the vertebrate nervous system with special focus on neuronal network formation.
<b>Center for Frontier Research</b>	<b>Molecular Function</b>	KANEMAKI, Masato / Associate Professor	5830	We aim to understand the mechanism of chromosome replication and the cell cycle regulation in animal cells by analyzing conditional cell lines using molecular genetic and cell biological methods. We also develop techniques for the construction of cell lines required for the studies of animal cells.
	<b>Cell Dynamics and Organization</b>	ODA, Yoshihisa / Associate Professor	6800	To understand the mechanism underlying plant cell wall patterning, we study the dynamic behavior of cortical cytoskeletons and small GTPases in xylem cells.
	<b>Quantitative Mechanobiology</b>	SHIMAMOTO, Yuta / Associate Professor	6784	Our laboratory studies mechanisms of force-based regulation in the mitotic spindle and the cell nucleus. Using our expertise of controlled mechanical manipulation and high-resolution fluorescence imaging, the micro-mechanics of these intracellular structures, assembled in Xenopus egg extracts, are quantitatively analyzed.
	<b>Mammalian Genetics</b>	SHIROISHI, Toshihiko / Professor TAKADA, Toyoyuki / Assistant Professor AMANO, Takanori / Assistant Professor	6818 6820 6816	In order to understand genetic regulation of complex traits, such as morphogenesis and energy metabolism, we are conducting genetic analyses using mouse spontaneous mutants (variants) and genetically modified mutants.

<b>Genetic Strains Research Center</b>	Mammalian Development	<b>SAGA, Yumiko</b> / Professor <b>KATO, Yuzuru</b> / Assistant Professor <b>AJIMA, Rieko</b> / Assistant Professor	6829 6832 6832	We study the early developmental events and the regulatory mechanisms during mouse embryogenesis through generation and analyses of gene-knockout and transgenic mice. We are especially interested in the organs derived from mesoderm (heart, lung, somite), and the germ cell system.
	<b>Mouse Genomics Resource</b>	<b>KOIDE, Tsuyoshi</b> / Associate Professor <b>YOSHIMI, Kazuto</b> / Assistant Professor	5843 5845	For understanding genetic basis of behavioral diversity, behavioral and genetic analyses are applied on a variety of mouse resources including wild-derived strains.
	<b>Model Fish Genomics Resource</b>	<b>SAKAI, Noriyoshi</b> / Associate Professor	5848	We establish reliable protocols for genetically modification of zebrafish using sperm, and analyze the molecular mechanisms of spermatogenesis and early development in zebrafish.
	Plant Genetics	<b>KURATA, Nori</b> / Professor <b>KUBO, Takahiko</b> / Assistant Professor	6808 6802	We perform analyses of genetic programs of reproductive and embryonic developmental process, as well as studies on the mechanism of reproductive isolation in rice. Wild species resources of rice are also used for evolutionary and diversity studies.
	Microbial Genetics	<b>NIKI, Hironori</b> / Professor <b>AOKI, Keita</b> / Assistant Professor	6870 6827	We investigate higher order structure of chromosomes and their dynamics in yeast and bacteria through genetic and cell biological analysis.
	Invertebrate Genetics	<b>UEDA, Ryu</b> / Professor <b>KONDO, Syu</b> / Assistant Professor	6823 6824	Genome-wide RNAi mutant fly library is established to study genome function in a variety of biological traits of fly development.
	Genetic Informatics	<b>YAMAZAKI, Yukiko</b> / Associate Professor	6885	As the information center of the genetic resources, we have been constructing databases and continuously inventing better way to distribute data in order to utilize the resources to its fullest potential.
	Genome Biology	<b>KOHARA, Yuji</b> / Project Professor <b>ANDACHI, Yoshiki</b> / Assistant Professor	6854 6860	We are performing a systematic analysis of expression and function of the genome of the nematode <i>C.elegans</i> , aiming at understanding of the gene network for development.

<b>Structural Biology Center</b>	<b>Biological Macromolecules</b>	MAESHIMA, Kazuhiro / Professor IDE, Satoru / Assistant Professor HIBINO, Kayo / Assistant Professor	6864 6878 6878	Our research interest lies in determining how a long string of genomic DNA is three-dimensionally organized in mitotic chromosomes and the nucleus, and how the organized genome functions during cellular proliferation, differentiation, and development. We are using a novel combination of molecular cell biology and biophysics to elucidate 3D-organization and dynamics of human genome chromatin.
	<b>Cell Architecture</b>	KIMURA, Akatsuki / Associate Professor KIMURA, Kenji / Assistant Professor	5854 5854	To understand the three-dimensional architecture of the cell and its dynamics, quantitative imaging and modeling approaches are employed. Specific targets of the research are size and shape of organelles, the mechanics of cytokinesis, and cytoplasmic streaming in <i>C. elegans</i> embryo.
	<b>Multicellular Organization</b>	SAWA, Hitoshi / Professor IHARA, Shinji / Assistant Professor	6845 6844	We are studying the mechanisms that produce a variety of cell types through asymmetric cell divisions using the nematode <i>C.elegans</i> .
	<b>Gene Network</b>	SUZUKI, Emiko / Associate Professor TAMORI, Yoichiro / Assistant Professor	6812 6813	Combinations of molecular genetics of <i>Drosophila</i> and high-resolution light and electron microscopy are employed to study functional implication of structural and molecular organization of neuronal cells, with particular focus on neuronal network formation.
<b>Center for Information Biology</b>	<b>DNA Data Analysis</b>	IKEO, Kazuho / Associate Professor NOZAWA, Masafumi / Assistant Professor	6851 6852	Evolutionary study of genomic structure and gene expression pattern of animals to elucidate the evolutionary mechanism of central nervous system and sensory organs. Evolutionary genomics analysis of various species such as <i>Drosophila</i> and viruses. Aquatic metagenome analysis. Developing databases and computer software for biological research.
	<b>Biological Networks</b>	ARITA, Masanori / Professor	9449	Network analysis of metabolic pathways based on comprehensive identification and quantification of metabolites (metabolomics); Bioinformatics related to plant secondary metabolism and lipid metabolism
	<b>Genome Informatics</b>	NAKAMURA, Yasukazu / Professor KAMINUMA, Eli / Assistant Professor	6859 6859	Intelligent information technology for structural and functional annotations of large-scale nucleotide sequences.

	<b>Research and Development of Biological Databases</b>	<b>TAKAGI, Toshihisa</b> / Professor	5821	Studies on applying distributed database software technology and/or parallel-distributed computing software technology to huge Life Science Databases such as DDBJ. Studies on analyzing biological data with using Supercomputer.
	<b>Gene Expression Analysis</b>	<b>OKUBO, Kousaku</b> / Professor <b>OGASAWARA, Osamu</b> / Assistant Professor	5838 9450	Representation of Bio Medical knowledge Analysis of gene expression data and construction of integrated databases, construction of a database of data analysis methods, and construction of theoretical models of gene expression evolution
	<b>Comparative Genomics</b>	<b>FUJIYAMA, Asao</b> / Professor <b>TOYODA, Atsushi</b> / Project Associate Professor	6788 6788	We have been conducting advanced genomics research on the plasticity of genome structure and functions using most advanced genome technology such as New-Generation Sequencers.
<b>Experimental Farm</b>		<b>NONOMURA, Ken-ichi</b> / Associate Professor <b>TSUDA, Katsutoshi</b> / Assistant Professor	6872 6874	We aim to elucidate the regulatory system of plant germ-cell development and chromosome kinetics, mainly using seed-sterile rice mutants.
<b>Center for Advanced Genomics</b>		<b>NOGUCHI, Hideki</b> / Associate Professor	9459	Development of new algorithms for <i>de novo</i> sequence assemblies, and analytical tools for comparative genomics employing massive data produced from next generation sequencers.