The Guideline for Additional Application for 2011 Collaborative Research and Research Meeting

National Institute of Genetics, Research Organization of Information and Systems

1. The Guidelines for Application

(1) Collaborative Research

The Purpose is to promote collaborative research between NIG faculty and researchers outside of NIG.

Based on applications from the researchers, the NIG researchers collaborate with them for conducting the research on the subject of application.

Collaborative Research is usually conducted during the period of time from October 1, 2011 to March 31, 2012. It can be extendable up to 3 years.

①Collaborative Research (A)

- Travel expenses only are provided for conducting the Collaborative Research within the accepted budget.
- The travel expenses are, in principle, to be paid only to the researchers who visit NIG for conducting the Collaborative Research.
- A total amount of money for the budget is up to 200,000JPY for each application of Collaborative Research(A). If the proposed budget is over 200,000JPY in your application, you are kindly requested to give the specific reason for that.

(2) Research Meeting

The Purpose is to promote exchange of information between NIG faculty and researchers outside of NIG.

Based on applications from the researchers, the Research Meeting can be held in collaboration with the NIG researchers.

We provide travel expenses for visiting place where the Research Meeting is held. The Research Meeting should be held with the period from October 1, 2011 to March 31, 2012.

- Based on the application, travel expenses for the Research Meeting are to be provided.
- The Research Meeting is, in principle, held in NIG. The travel expenses are to be paid only to the non-NIG researchers who visit NIG for participating the Research Meeting.
- A total amount of money for the budget should be up to 500,000JPY per an application. If the budget is beyond this limit, you are requested to state a specific reason.

2. Exceptions

There are some exceptions as below;

(1) Collaborative Research

In the Collaborative Research only when the NIG researchers need to visit a research institution where the non-NIG researchers of Collaborative Research belong to, the travel expense can be used for it (within provided travel expenses). This can be done at any time.

(2) Research Meeting

Because Research Meeting is held in NIG, in principle, travel expenses are to be paid only to the non-NIG researchers who visit NIG. However, Research Meeting can be held at the outside of NIG, (in domestic only, when necessary.)

3. Applicants

The applicant should be, in principle, a researcher who belongs to a university, an inter-university collaborative research institute and independent administrative organizations within Japan. A researcher who belongs to the foreign research institution can also apply for this category. (In principle, Principal Investigator)

4. Application

Please submit an application form issued by NIG 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

5. Submission of the application form

Mailing Address
Research Promotion Team, Research Promotion Section
Department of Administration
National Institute of Genetics, Research Organization of Information and Systems
Yata1111, Mishima, Shizuoka
411-8540 JAPAN
Phone: +81-55-981-6728
E-mail: kyodo-mail@lab.nig.ac.jp

Application Deadline:
(Not later than) August 17th , 2011
Please note “Enc. Collaborative Research Application Form” in red on the envelope.

6. 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.

7. Expenses Provided

Expenses will be provided by NIG within the accepted budget. The travel expenses are to be provided based on the rule of Research Organization of Information and Systems (ROIS).

8. The Report of Research

The report of Collaborative Research or Research Meeting should be submitted to the Director-General of NIG within 30 days immediately 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（2011-A＊）

For English ：NIG Collaborative Research Program (2011-A＊)

（＊：Reference number in the acceptance list）

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

9. 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) We make the researchers who visit NIG for Collaborative Research or Research Group available to our Guest house.

(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

(Update: 1st July 2011)

Research Department	Research Division	In charge of faculty	Extension	Research outline
Molecular Genetics	Molecular Genetics	FUKAGAWA, Tatsuo /Professor HORI, Tetsuya /Assistant Professor NISHINO, Tatsuya /Assistant Professor	6792 6744 6744	Molecular genetic, cell biological, biochemical, and structure biological methods are employed to study the mechanism for chromosome segregation during cell division.
	Mutagenesis	YAMAO, Fumiaki /Professor	6748	There is targeted maintenance of chromosomal integration through DNA damage repair, recombination etc, especially with their linkage to ubiquitin or ubiquitin-like modification of the proteins involved in the process.
	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	Cytogenetics	KOBAYASHI, Takehiko /Professor IIDA, Tetsushi / Assistant Professor	6881 6882	Relationship between genome instability (especially, of repetitive sequences) and cellular functions is studied.
	Microbial Genetics	ARAKI, Hiroyuki /Professor TANAKA, Seiji / Assistant Professor HIZUME Kohji /Assistant Professor	6754 6758	Genetic and biochemical approach to elucidate molecular mechanism and regulation of eukaryotic DNA replication and checkpoint control using budding yeast

Developmental Genetics	**Developmental Genetics**	**HIROMI,Yasushi** /Professor **ASAOKA,Miho** / Assistant Professor **HAYASHI, Takashi** / Assistant Professor	6767 6811 6811	Developmental genetics of organogenesis in Drosophila.
		SHIMIZU,Hiroshi / Assistant Professor	6768	Our group is currently investigating the physiological mechanism of Hydra and other members of phylum Cnidaria and its relation to the mechanism of pattern formation e.g. regeneration and budding.
	Neurogenetics	**IWASATO,Takuji** /Professor **MIZUNO, Hidenobu** / Assistant Professor	6773 6777	We are studying molecular and cellular mechanisms of neuronal circuit development in the mouse somatosensory system (whisker-barrel system) using mouse genetics. We are also interested in roles of alpha-chimerin in brain development and function.
	Molecular and Developmental Biology	**KAWAKAMI, Koichi** /Professor **ASAKAWA, Kazuhide** / Assistant Professor	6740 6739	Genetic studies on development, morphogenesis and behaviors by using a model vertebrate zebrafish.
Population Genetics	**Population Genetics**	**SAITOU, Naruya** /Professor **SUMIYAMA, Kenta** / Assistant Professor	6790 6787	We study evolution of genes and genomes, in particular human evolution. We also develop methods for study of genome evolution.

		TAKANO, Toshiyuki /Associate Professor **TAKAHASHI,Aya** / Assistant Professor	6781 6782	Studies of principles of genetic variation and evolution that can be used to make future predictions.
	Evolutionary Genetics	**AKASHI, Hiroshi** /Professor **OSADA,Naoki** / Assistant Professor	6793	Mechanisms of genome evolution. Especially weak selection and biosynthetic constraints.
Integrated Genetics	**Human Genetics**	**INOUE Ituro** /Professor **HOSOMICHI, Kazuyoshi** /Assistant Professor	6795 6797	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.
	Agricultural Genetics	**KAKUTANI, Tetsuji** /Professor **SAZE, Hidetoshi** / Assistant Professor **TARUTANI, Yoshiaki** / Assistant Professor	6801 6807	Control and function of epigenetic gene modifications in Arabidopsis.
	Brain Function	**HIRATA,Tatsumi** /Associate Professor **KAWASAKI, Takahiko** / Assistant Professor	6721 6721	Development of the vertebrate nervous system with special focus on neuronal network formation.

Genetic Strains Research Center	**Mammalian Genetics**	**SHIROISHI, Toshihiko** / Professor **TAMURA,Masaru** / Assistant Professor **TAKADA, Toyoyuki** / Assistant Professor	6818 6816 6820	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.
	Mammalian Development	**SAGA, Yumiko** / Professor **KOKUBO, Hiroki** / Assistant Professor **MORIMOTO, Mitsuru** / Assistant Professor	6829 6815	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.
	Mouse Genomics Resource	**KOIDE,Tsuyoshi** /Associate Professor **TAKAHASHI, Aki** /Assintant Professor	5843	For understanding genetic basis of behavioral diversity, behavioral and genetic analyses are applied on a variety of mouse resources including wild-derived strains.
	Model Fish Genomics Resource	**SAKAI, Noriyoshi** /Associate Professor **SHINYA, Minori** / Assistant Professor	5848 5849	We establish reliable protocols for genetically modification of zebarafish using sperm, and analyze the molecular mechanisms of spermatogenesis and early development in zebrafish.
	Plant Genetics	**KURATA, Nori** / Professor **KUBO, Takahiko** / 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	**NIKI, Hironori** / Professor **AOKI, Keita** /Assistant Professor *Starting on August 1	6870	We investigate higher order structure of chromosomes and their dynamics in yeast and bacteria through genetic and cell biological analysis.
	Invertebrate Genetics	**UEDA, Ryu** / Professor **KONDO, Syu** /Assistant Professor	6823	Genome-wide RNAi mutant fly library is established to study genome function in a variety of biological traits of fly development.
Center for Genetic Resource Information	**Genetic Informatics**	**YAMAZAKI, Yukiko** /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	**KOHARA,Yuji** / Professor **ANDACHI, Yoshiki** / Assistant Professor	6854 6860	We are performing a systematic analysis of expression and function of the genome of the nematode C.elegans, aiming at understanding of the gene network for development.
	Comparative Genomics	**FUJIYAMA, Asao** /Professor **TOYODA,Atsushi** /Project Associate Professor	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.
Structural Biology Center	**Biological Macromolecules**	**MAESHIMA, Kazuhiro** / Professor **HIRATANI Ichiro** /Assistant Professor	6864	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.

	Molecular Biomechanism			
	Multicellular Organization	**SAWA, Hitoshi** /Professor **IHARA, Sinji** /Assistant Professor	6845	We are studying the mechanisms that produce a variety of cell types through asymmetric cell divisions using the nematode *C.elegans*.
	Biomolecular Structure	**SHIRAKIHARA, Yasuo** /Associate Professor **ITO,Hiroshi** / Assistant Professor	6887 6862	We determine the three dimensional atomic structure of proteins, nucleic acids or their complexes by x-ray diffraction analysis in order to understand the working mechanism of the targets.
	Gene Network	**SUZUKI,Emiko** /Associate Professor **KURUSU, Mitsuhiko** / Assistant Professor	6812 6813	Combinations of molecular genetics of Drosophila 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.
Center for Information Biology and DNA Data Bank of Japan	**DNA Data Analysis**	**GOJOBORI, Takashi** /Professor **IKEO,Kazuho** /Associate Professor	6847 6851	Evolutionary study of genomic structure and gene expression pattern of animals to elucidate the evolutionary mechanism of central nervous system, including the brain and eyes. Molecular evolutionary analysis of viruses through developing methods for detecting natural selection. Research and development of databases and computer software programs related to biological information.
	Gene Function Research			
	Genome Informatics	**NAKAMURA, Yasukazu** /Professor **KAMINUMA,Eli** / Assistant Professor	6859 6836	Research to integrate Life Science Databases based on the International Nucleotide Sequence Databases in DDBJ. Intelligent information technology for structural and functional annotations of genomes.

	Research and Development of Biological Databases	**TAKAGI, Toshihisa** / Professor	5821	We are researching to apply distributed database software technology and/or parallel-distributed computing software technology to huge Life Science Databases such as DDBJ.
	Gene-Expression Analysis	**OKUBO,Kousaku** / Professor **OGASAWARA, Osamu** /Assistant Professor	5838 5836	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
Center for Frontier Research	**Cell Architecture**	**KIMURA, Akatsuki** /Associate Professor	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 *C. elegans* embryo.
	Motor Neural Circuit	**HIRATA, Hiromi** /Associate Professor	5825	Genetic and physiological analysis on motor development by using a vertebrate model zebrafish. Specific aim is to understand and regulate intrinsic and acquired synaptogenesis, circuit formation and muscle development.
	Multicellular Society	**HORIKAWA, Kazuki** /Associate Professor	6799	For the better understanding of principles in multi-cellular networks, cellular activities in 100-100,000 cells are analyzed with the help of quantitative Ca^{2+} imaging and mathematical simulations.
	Molecular Function	**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.

	Symbiosis and cell evolution	**MIYAGISHIMA, Shin-ya** /Project Associate 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
	Ecological Genetics	**KITANO, Jun** /Project Associate Professor /	9415	We use threespine stickleback fishes to investigate the genetic and molecular mechanisms underlying adaptation and speciation.
	Centrosome Biology	**KITAGAWA, Daiju** /Project Associate 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 *C. elegans* embryos and human cell culture as model systems.
Experimental Farm		**NONOMURA, Ken-ichi** / Associate Professor **MIYAZAKI,Saori** /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.

Research Department	Research Division	In charge of faculty	Extension	Research outline
Adjunct Faculty	Nucleic Acid Chemistry	EARNSHAW, William C. /Professor	6870	Studies of mitotic chromosome structure and function.
		MARKO,John F. / Professor	6748	Physics of large-scale DNA organization.
	Cytoplasmic Genetics	BOCCARD, Frédéric / Professor	6870	Dynamics of Bacterial Chromosome
		UEDA, Hiroki / Professor	6754	Systems Biology of “Time”
	Physiological Genetics	STERN, David L. / Professor	6767	Genetic causes of evolution of morphology and behavior
		KIMBLE, Judith E. / Professor	6767	Controls of germline stem cells and their niche
	Theoretical Genetics	HARTL, Daniel L. /Professor	6790	Process about organisms evolve and new species come into being
		CLARK, Andrew G. /Professor	6793	Genetic basis of adaptive variation in natural populations
	Applied Genetics	COLOT, Vincent / Professor	6801	Arabidopsis Epigenetics and Epigenomics
		TSUJI, Shoji / Professor	6788	Next Generation Genome Medicine