

*Carl R. Woese Institute for Genomic Biology*

Office of the Director

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**Carl R. Woese Institute for Genomic Biology**

**Instructions for Submitting a Proposal for an Institute Theme**

**Program Overview**

The mission of the Carl R. Woese Institute for Genomic Biology (IGB) is to advance life sciences research at UIUC and to stimulate bio-economic development in the State of Illinois. Its near-term strategic objective is to identify and promote the development of innovative research themes that will capitalize on the recent advances in genome science and technology. This document briefly describes the new infrastructure that will be available to support the IGB thematic research activities and the detailed procedures for submitting thematic research white papers. The intent of the white paper process is to identify and facilitate development of the IGB Research Themes.

As part of the white paper process, complementary research programs will be identified that capitalize on major existing campus strengths in genomic biology, bioengineering and computational sciences. **Research Themes** are envisioned to fall under one of three cross-cutting **Program Areas**: *Systems Biology, Cellular and Metabolic Engineering,* and *Genome Technology*. The *Systems Biology* and *Cellular and Metabolic Engineering* Program Areas will likely encompass themes that utilize genomically sequenced microbial, plant or animal species (including insects) as model or target organisms. The *Genome Technology* theme is preferably associated with one or more Research Themes in the other two Program Areas. Procedures for proposing an IGB Research Theme are detailed later in this document. The general scheme planned for the institute is show below.

Program Areas

1. Systems Biology

Research Theme 1

Research Theme 2

Research Theme 3

2. Cellular and Metabolic Engineering

Research Theme 4

Research Theme 5

Research Theme 6

3. Genome Technology

Research Theme 7

Core Technology

Each Research Theme will be housed in the IGB. Thematic areas can accommodate five **Institute Faculty** and their staff, four of whom will require wet lab space and one senior bioinformatician or theoretician. Approximately 50 faculty, staff and students can be accommodated in each thematic area. The bioinformaticians and theoreticians belonging to two Themes will be united in a common space on each floor, creating a collaborative environment that will house approximately 14 persons. The scientific objectives of the Research Themes will be supported by **a cluster of core facilities**, including a state-of-the-art animal care facility, plant growth chambers, a microfabrication facility, a microscopy suite and bioinformation technology.

**Space** provided to each Theme is intended to be a catalyst for interdisciplinary activities and for obtaining funds to support thematic research. Themes enable faculty to organize research proposals that will maximally benefit from the group having access to a large integrated space for interdisciplinary activities. It is expected that each Research Theme will work toward securing a Center or Program Project grant from NIH, NSF or USDA and/or industry.

In order to facilitate the development of the Research Themes and to create an accountable planning group for creation of the IGB, a **Theme Leader** will be identified in each white paper (see items 1B and 3 below). A Theme Leader should be an established expert in his/her discipline and have demonstrated ability and/or interest in leading interdisciplinary research projects. Given the Institute’s mission to promote economic development, a Theme Leader should also have a basic understanding of technology transfer and commercialization. The Director will work with each of the Theme Leaders to ensure that adequate administrative support is available for planning Theme efforts.

Ideally, Institute Faculty comprising a Theme will be drawn from more than one academic department and College. Institute Faculty will have demonstrated expertise in a research discipline that is critical to addressing the main problems of the Theme. In such cases where the required expertise does not presently exist on campus, **new faculty hires and IGB Research Fellows** may be requested in the white paper (see 1D; request form attached). New faculty members may be proposed as Institute Faculty within a Theme or as **Affiliate members** (see 1.C; request form attached) to be housed in academic departments. IGB Research Fellows may be used to initiate thematic activities, providing critically needed expertise and preliminary data for theme-based grant proposals.

The process for generating IGB Research Themes is intended to be faculty-driven. It is recognized that the success of the IGB is dependent upon support of the faculty and academic units. Coordination between the IGB, academic units and the campus will be essential. The rigorous process that has been established for selection of the Research Themes and periodic expert review of the Theme’s activities will ensure that the IGB will develop into and be maintained as a world-class facility for interdisciplinary research into the life sciences.

**Procedure**

1. The request to create an IGB Research Theme must be submitted in the form of a “white paper.”
   1. The white paper should present the major scientific objective of the Research Theme.
   2. A Theme Leader should be identified. The Theme Leader will be responsible for all correspondence relating to the thematic proposal as well as other planning activities during the development of the institute (see item #3).
   3. Research Themes will be comprised of five Institute Faculty and their research groups, including the Theme Leader. Full-time, UIUC faculty who should be identified in the white paper will head thematic research groups. The Theme’s faculty members should together have primary appointments in more than one academic department. Preference will be given to thematic research that involves faculty from more than one College, if appropriate to the Theme. Themes comprising more than five faculty-led groups will be considered. Additional faculty and staff may be identified as IGB Affiliates. Affiliates may be housed within IGB thematic areas or more likely in their home departments.
   4. It is anticipated that the necessary expertise may not exist on campus for making each Theme scientifically complete. Therefore, **new faculty hires** may be proposed in a white paper. Theme Leaders must inform Unit Heads and Deans of their interest in hiring new faculty. Unit Heads acknowledge certain responsibilities by signing the white paper. These responsibilities and other mechanisms for hiring faculty under the IGB Faculty Hiring Initiative are detailed in a memorandum to Deans and Unit Heads entitled *Policy for Proposing New Faculty Hires and Research Fellows*. For each proposed faculty hire a request form must by completed (see attachment to this document).
   5. **Faculty may be associated with more than one white paper.**
   6. White paper proposals may include requests for IGB Research Fellows. Research Fellows will hold 2- to 5-year non-tenure track appointments in IGB. Fellowships may be awarded prior to completion of construction of the IGB so as to aggressively advance the Theme’s goals and to improve the prospects for early funding of the Theme’s activities. For each proposed IGB Research Fellow a request form must be completed (see attachment to this document).
   7. The white paper should not exceed 10 pages (11 or 12 pt font). Please address all of the issues listed in item #8. Proposals should be delivered via email in PDF or Word format to Kim Johnson, 1606 Carl R. Woese Institute for Genomic Biology (kljohns@illinois.edu).
2. An ***ad hoc* review committee** appointed by the IGB Director will assess the white papers. The review committee will advise the Director on the merits of the thematic proposals.
   1. The review committee will be chaired by the IGB Director and comprised of distinguished scientists from academia (including UIUC) and private industry. Members of the review committee will be free of conflicts (i.e., they are not seeking space in IGB and will not benefit from a favorable decision).
   2. The review committee will evaluate the white papers and may solicit revisions or additional information if necessary. The review committee may recommend that the white paper authors make an oral presentation in order to clarify organizational and scientific aspects of the white paper.

* 1. The review procedure will not involve a formal written critique that will be returned to the submitters of proposals. The Director will communicate decision on which Research Themes are selected directly to the submitters.
  2. An objective of the review process is to identify themes that are outstanding scientifically and appropriate to the mission of the IGB.

1. Successful Research Themes will be assigned space in the IGB. **Theme Leaders will have responsibilities during the interim period** to coordinate the activities of the proto-Theme, including attending planning meetings, representing the IGB at fund raising activities, preparing publicity materials and writing grant proposals.
2. Theme Leaders of selected Research Themes will receive **administrative support** from IGB for the preparation of grant proposals and other materials that may be required for the full development of the Theme.
3. It is essential to the long-term success of IGB that the Institute can respond to new scientific opportunities. This necessitates a natural turnover of faculty within Themes as well as the Research Themes themselves. In order to permit this flexibility, policies and procedures have been established to conduct **periodic reviews of Institute Faculty and the Research Themes**. An external committee of experts appointed by the Director will review each Research Theme every 5 years and make recommendations to the Director on their continuance. Research Themes and Institute Faculty that no longer fit the IGB’s scientific direction or do not meet expectations for productivity, international recognition, external support or technology transfer may be discontinued. At such time, faculty may be asked to return to space in their home unit. In such cases the Provost, VCR, College/ department and IGB will facilitate reestablishing faculty in their home units.

While recognizing the importance of periodic review of the Research Themes, it is also important to provide adequate time for themes to reach their full potential. Furthermore, it is understood that relocation of programs causes disruption to those programs and hardships on the home units. Therefore, faculty should take the view that once a Research Theme is housed in the IGB is has the potential to enjoy significant longevity within it as a productive enterprise. Even if the promise of a theme does not materialize (for example, if funding completely dissipates) a Theme will have the opportunity to reinvent itself, which might permit some or all of its Institute Faculty to remain in the IGB. **All efforts will be made to facilitate the stability and longevity of a Theme.**

1. Issues relating to a faculty member’s **departmental space** and existing program will be negotiated by the faculty member with their Unit Head. Institute faculty may, with agreement of the Director and his/her Unit Head and Dean, bring part of all of their existing research programs into the IGB, provided that their non-thematic activities support the goals of the Theme.
2. **Points to Address in a White Paper:**
   1. What are the major scientific issues to be addressed by the Research Theme? What major problem(s) are to be solved? Who are the stakeholders in the research outcomes?
   2. Why does the problem to be addressed require an interdisciplinary approach? For each IGB faculty member, briefly describe what expertise each brings to bear on solving the main problems to be addressed in the Theme. Expertise of Affiliates may also be discussed.
   3. Briefly outline the proposed organization and administration of the Theme.
   4. Are additional faculty members required to create a successful thematic enterprise? Describe the need and expertise of each proposed new faculty hire.
   5. Are Research Fellows (see 1.F) required to help establish the Theme? If so, how many are needed, how long are the anticipated appointments, where will they be housed and what specifically will they be expected to accomplish?
   6. What organism or groups or organisms are central to the Theme? If their genomes are not sequenced, what genomic tools may be used?
   7. If you are proposing a Genome Technology Theme, is the technology (or technologies) scalable to the genome, proteome or metabolome levels?
   8. Describe the social, legal and ethical issues that may arise from the Theme. Indicate potential Faculty Affiliates in the humanities, College of Business and College of Law, where appropriate.
   9. What specialized infrastructure is required for the thematic research? Is there a need for large specialized equipment? Briefly describe the equipment and infrastructure required, and justify the request.
   10. Describe the economic development potential of the Theme. What kinds of intellectual property will arise from the thematic research? How do you envision technology transfer for the new IP developed by the Theme. (Note: please give this point detailed thought and adequate space in the white paper).
   11. Identify funding sources and describe the strategy for obtaining funding for the Theme’s activities.
   12. Describe any coupled academic activities planned for the Theme (courses, training grants, conferences and symposia, etc.).
   13. What are the critical factors that will determine the success of the Theme? What will be necessary during the next 2 years to establish the Theme so that the program is in place when construction of the IGB is completed? Present a timeline for Theme development and activities.

**Request Form**

**The IGB Faculty Hiring Initiative**

Please complete this form for each faculty position proposed under the IGB Faculty Hiring Initiative (white paper process only). The Department or Unit Head and Dean of the College in which the proposed new faculty member will be appointed must sign this form. If proposals originate from more than one academic department (i.e., a shared line between two departments is proposed) then signatures are required from all relevant Unit Heads and Deans. By signing the form, the Unit Head & Dean acknowledge all commitments set forth in the internal memorandum entitled *Policy for Proposing New Faculty Hires and Research Fellows Under the IGB Faculty Hiring Initiative*.

**1. Originating Department(s):**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**2. Originating College(s):**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**3. Title of White Paper Proposal:**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**4. Theme Leader:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**5. Position rank and proposed title:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**6. Proposed starting date:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**7. Position Description**

IGB Faculty Hiring Initiative Request Form – page 2

**7. Is space for the new faculty member requested in IGB? If not, will funds be required for   
 renovations in the home department?**

**8. Are there any special infrastructure needs associated with this position? Briefly describe.**

**9. Names of suggested Search Committee members:**

**10: Signatures: (required)**

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**Request Form**

**The IGB Research Fellows Program**

Please complete this form for each Research Fellow proposed in the white paper for an IGB Research Theme. All IGB Research Fellows will have 100% non-tenure track appointments in the IGB.

If a Fellowship is awarded to a Research Theme, the Theme Leader or Institute Faculty member in whose laboratory the Fellow will work must forward to the Office of the Director prior to the appointment a statement of research interests, curriculum vitae and three letters of recommendation for the proposed Fellow. Final decisions on appointments lie with the Director or his designate.

**1. Title of White Paper Proposal:**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**2. Proposed Salary Range:**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**3. Proposed starting and termination date:**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**4. Position Description:**

**5. Is space for the IGB Research Fellow requested in IGB?**

**6. Are there any special infrastructure needs associated with this position? Briefly describe.**

**7. Anticipated start-up costs:**

a. Relocation:

b. Equipment:

c. Supplies:

d. other (specify):

e. Total