

University of
Minnesota

Interdisciplinary Informatics



UNIVERSITY OF MINNESOTA

Driven to DiscoverSM

UMII Seed Grant Program

2009 Call for Proposals

Contents

- I. Program snapshot**
- II. Program description**
- III. Eligibility criteria**
- IV. Application procedures and documentation**
- V. Application deadlines**
- VI. Evaluation criteria and procedures**
- VII. Award procedures and conditions**
- VIII. Definitions**

Program snapshot

Title	University of Minnesota Interdisciplinary Informatics (UMII) Seed Grant Program
Purpose	To support new research collaborative across the fields of informatics and other disciplines. To foster exploration of promising emerging opportunities in addition to research in established scientific, engineering or art and humanities domains. The goal of the award is to enable the collection of preliminary data that will support competitive extramural funding in the area of informatics and interdisciplinary research.
Deadline	October 15 th , 2009
Eligibility	Open to faculty and staff holding a current appointment at the University of Minnesota and eligible to apply for federal support according to University policies.
Amounts	Up to \$400K will be available in the FY09 program. Funding range per grant: \$25,000 - \$75,000 with an anticipated cap of \$50,000 for most awards.
Questions	Anne-Francoise Lamblin, PhD UMII Coordinator Email: lamb001@umn.edu ; Tel: 612-625-7414 Application submission support: Ms. Erin Durkee, Email: durk0033@umn.edu ; Tel: 612-625-4926

Program Description

The University of Minnesota Interdisciplinary Informatics Program has established its UMII Seed Grant Program to support interdisciplinary informatics research. The directed research efforts will leverage state-of-the-art informatics practices while cutting across the life sciences, physical sciences and engineering, social sciences, health sciences, computing sciences or other disciplines. The UMII is especially interested in promoting the creation of **new** interdisciplinary research projects that have not been pursued in the past and the exploration of promising emerging opportunities. Requests for funding to support established research or extension of previously funded projects will not be considered unless a new and pertinent informatics component is being added with strong justifications.

Competitive projects will clearly identify how the proposed research addresses an unmet need or unresolved question, the anticipated scientific or scholarly impact, and the extramural funding programs the project will enable the applicants to compete for during or at its completion. Up to \$400,000 will be awarded with a maximum award of \$75,000 per project and an anticipated cap of \$50,000 for most awards.

Proposals submission deadline: October 15, 2009, noon.
Anticipated award notification: November 2009
Anticipated award funds allocation: November 2009
Award duration: 1 year

Eligibility criteria

◆ **Focus**

Eligible areas of research focus include all interdisciplinary projects whose research plans clearly identify the use of methodologies and best practices from the appropriate fields of informatics and one or more other disciplines.

In this cycle the UMII is specially interested in interdisciplinary informatics proposals that encompass the following domains:

- Bioinformatics*
- Computational biology*
- Health informatics*
- Systems biology*
- Systems ecology*

◆ **PI affiliation**

Competition is open to all faculty and staff that hold a current University of Minnesota appointment and eligible to apply for federal support according to University policies. This includes principal investigator, co-principal investigator and key personnel.

◆ **PI limits**

Investigator may submit no more than two proposals per cycle as either PI, coPI or senior personnel.

Application procedures and documentation

Application will be submitted as single spaced PDF document written using 11 pt Arial font, with one inch margins on all sides. Compliant applications will contain the following sections ordered as below:

◆ **Cover page**

A *downloadable standard format cover page will be available on OVPR [UMII web site](#)*. Cover page should provide the following information

- Project title
- Project co-leader's names for the respective disciplines
- Team members with appointment and affiliations
- Disciplines represented in the research plan in addition to informatics
- Keywords (6 maximum)

◆ **Abstract**

The abstract should be written in non-technical terms for a general scientific audience and clearly identify the problem and question being addressed, the overall interdisciplinary approach, and the anticipated impact of the research results.

◆ **Project description (maximum length eight pages)**

With proper background information, the statement of work should clearly address the rationale, project goals, specific aims, approaches, deliverables and significance. The authors should clearly indicate how the proposed research addresses an unmet need of the research community and comment on the anticipated scientific impact. Proposals are required to include aims that would not be possible without a cross discipline approach. Because anticipated awards will be for one year, the proposed research activities should be put in the context of longer-term research goals and current roadmaps of the appropriate agencies.

All proposals will be evaluated on:

- Scientific merit

* See Definition section at the end of document

- Soundness of the theoretical and technical plans
- Demonstrated need of the activity within the research community
- Testability of the hypothesis and proposed plan for validation of predictions
- Potential to advance research in the fields relevant to the project
- Rationale for the proposed interdisciplinary interaction
- The strategic advantage taken of information technologies and informatics practices
- Potential to increase research competitiveness in extramural competition
- Presentation clarity

As applicable, proposals will also be evaluated on:

- Plan for integration of and/or contribution to community resources
- Data management and data sharing plans
- Sustainability plan for the resource

◆ **References cited**

◆ **Project and team management**

To emphasize the expected equal representation and participation of the different disciplines in the proposed research, the project will be co-led by discipline representatives. The expertise and responsibilities of each project team member should be clearly identified as well as project timeline and milestones. When addressing the team management, the distribution of responsibilities should reflect the distributed leadership. In addition to the final report, awardees will submit interim progress report at the six and twelve months mark.

◆ **External funding opportunities**

A desired result of the UMII Seed Grant Program is enhanced competitiveness of University of Minnesota investigators applications in garnering extramural funding competitions. Please provide a list of up to five current foundations or agencies programs in which the applicants will be best positioned to compete for research funding if an UMII Seed Grant were to be awarded.

◆ **Biographical sketch**

Required for all senior project personnel and should not exceed two pages per sketch.

◆ **Budget & budget justification**

NSF or NIH budget format for budget preparation is recommended. No indirect costs are permitted. Budget justification (maximum two pages length) should be provided for each budget item. Funds may be used for support of research personnel, and supplies, and reagents including software license purchase. In addition to the traditional categories the following applies:

- Allowable costs for travel and equipment
 - Travel

Within a reasonable limit, funds may be requested for field work or attendance of meetings and conferences that is demonstrated to be essential to the conduct of the proposed research.
 - Equipment

For computing resources applicants are strongly encouraged to leverage resources available through the Minnesota Supercomputing Institute for Advanced Computational Research. Up to \$4000 will be authorized for personal computer (laptop, desktop) purchase.
- Non allowable costs

Purchase of hardware for the purpose of developing computational cluster will not be considered.
- Matching support

If anticipated to be available, provide a clear statement on matching funds sources and usage.

◆ **Current & Pending Support**

Provide list of current and pending support with project title and source. With respect to ongoing research projects and pending applications please indicate potential overlap with the present proposal.

Application deadline

Application file should be submitted by email to umii@umn.edu by noon on 10/15/2009 with the subject line: "2009 umii seed grant application – PI last name"

Evaluation criteria and procedures

Proposals will be reviewed using criteria as described in the *Project Description* section of this announcement. Proposals will be peer-reviewed by a panel appointed by the OVPR. Intramural reviewers and/or panelists will be selected to match expertise present in the received research proposals and in accordance with the University of Minnesota Office of the Vice President for Research exclusion policies to avoid conflict of interest.

Final funding decision based on panel recommendation will be made by the OVPR.

Award procedures and conditions

◆ **Reporting**

At six months interval, the principal investigator will be responsible for submitting project progress report highlighting progress made towards meeting the milestones described in the awarded proposal as well as budget balance update. In the unlikely event of no progress or evidence of use of the funds in a manner that deviates significantly from its awarded intent, the grantees will be asked to return the remaining portion of the awarded funds.

◆ **Impact tracking**

Report forms will be available on the OVPR UMII web site. Reporting will include activities related to the research supported by the UMII seed grant award or enabled by it such as:

- Abstract or proceeding submitted or published (full citation reference)
- Manuscript submitted or published (full citation reference)
- Grant proposals submitted or awarded
- Patent applications
- Trainees (undergraduate and graduate students, Postdoctoral researchers, technicians)

After expiration of the grant, the principal investigator will be required to fill a 6-month and 12-month impact update addressing the impact tracking categories as above

◆ **Acknowledgement**

Any publications resulting from research supported by the use of UMII should acknowledge the UMII financial support through its seed grant program.

Definitions

Bioinformatics

Research, development, and applications of computational tools and approaches for expanding the use of biological, medical, behavioral, or health data, including methodologies to acquire, store, organize, archive, analyze, and visualize such data¹.

Computational Biology

The development and application of data-analytical and theoretical methods, mathematical modeling and computational simulation techniques to the study of biological, behavioral, and social systems².

Health informatics

An integrative scientific field that draws upon information sciences, systems, and related technologies to enhance the use of the knowledge base of health sciences, and the medical and health data³

Systems Biology

The coordinated study of biological systems by investigating the components of networks and their interactions, by applying experimental high-throughput, whole proteome, whole metabolome, and whole-genome techniques, and integrating computational methods with experimental efforts⁴.

Or, the interplays of different hierarchies of biological information from DNA to cells, organs and species within their environmental contexts⁵.

Systems Ecology

Systems ecology focuses on interactions and transactions within and between biological and ecological systems, and is especially concerned with the way the functioning of ecosystems can be influenced by human interventions⁶.

¹ <http://www.bisti.nih.gov/CompuBioDef.pdf>

² <http://www.bisti.nih.gov/CompuBioDef.pdf>

³ Adapted from D.E. Detmer, 2007 "The Essential Role of Biomedical and Health Informatics." Seminar presentation, University of Minnesota December 11, 2007

⁴ <http://www.nigms.nih.gov/Initiatives/SysBio/>, <http://geocities.com/bioinformaticsweb/definition.html>

⁵ http://www.systemsbio.org/Systems_Biology_in_Depth

⁶ http://en.wikipedia.org/wiki/Systems_ecology