

A Review of Internal Funding Initiatives (BSFP, MPSFP, SSFP and IREU)

Research Council Sub-Committee

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Executive Summary

Charge to the Committee. In early Fall 2005, Vice President Meredith Hay asked the Research Council to review four of the Internal Funding Initiatives to determine if these programs are the most effective use of funds in promoting and supporting research on campus. These four programs are

1. Biological Sciences Funding Program (BSFP)
2. Mathematical and Physical Sciences Funding Program (MPSFP)
3. Social Sciences Funding Program (SSFP)
4. Iowa Research Experiences for Undergraduates (IREU)

In response to this request, Vicki Grassian, Chair of Research Council, formed a subcommittee to review the internal funding programs and prepare a report for Research Council to present to Vice President Hay at the end of the academic year. The subcommittee requested input from a number of faculty, staff and administrators involved in the IFI programs as part of this review.

Issues Addressed. The IFI programs reviewed are considered to be an important and excellent use of funds by the OVPR. After receiving input from faculty, staff and administrators, some issues were identified that needed to be addressed by the committee. These issues include: *(i)* the purpose of each program; *(ii)* program eligibility; *(iii)* budget and budget eligibility; *(iv)* review process and; *(v)* targeted programs.

Summary of Recommendations. Some recommendations are suggested in this document. These recommendations include: *(i)* improved methods for tracking of the success of IFIs in garnering external support (the stated main objective for 3 of the programs under review) through the internal routing forms as this may provide information that can be used to guide these program in future years; *(ii)* the need to better define program eligibility for BSFP, MPSFP and SSFP; *(iii)* better oversight of programs by faculty and staff researchers so that proposals are directed to the right program and that budget eligibility is not an issue during the review process; *(iv)* consideration of increasing the size of some awards *(v)* potential change in the conflict of interest policy and criteria so that each proposal can get a fair and informed review and; *(vi)* consideration of target areas that align with national initiatives and funding opportunities and ensure that target areas are reviewed each year before announcements are made to the university community of scholars and researchers.

Introduction

History of Internal Funding Initiatives. Seed grant funding has existed in the Office of the Vice President for Research as part of a Central Investment Fund for Research Enhancement (CIFRE) since 1993. CIFRE provided small grants to faculty and research scientists in all areas of scholarly endeavor for work that assisted in developing new initiatives, supported new directions in scholarly/creative activity, and/or enhanced the competitiveness of applications for external funding. The funding for these programs was primarily from state resources.

In 2002, the Internal Funding Initiatives (IFI) replaced the CIFRE program. This was created after consultation with the Research Council. The IFI is a set of funding programs that incorporates the goals of CIFRE but expands the scope of programs to include Arts and Humanities, Biological Sciences, Mathematical and Physical Sciences, Social Sciences and Undergraduate Research Experience as well as Collaborative Interdisciplinary Programs, Informatics and have been targeted funding areas in the past. Currently, the funding for these programs is mostly from proceeds from patent revenue and biological sciences state funding sources.

Review Materials and Input. As part of the review, the Research Council sub-committee received the following materials from the Office of the Vice President for Research (OVPR).

- Program announcement (Appendix A)
- Data on IFIs collected by the OVPR (Appendix B)
- Summary of progress reports (Appendix C)

In addition to these materials, the subcommittee asked for and received input from a number of individuals involved in the IFI including:

- Associate Deans of Research and Graduate Education
- Research Council liaisons for the 2005/2006 BSFP, MPSFP, SSFP and IREU review committees
- Chairs as well as members of each of the 2005/2006 BSFP, MPSFP, SSFP and IREU review committees
- Research Council members as representatives of faculty, staff and student researchers on campus
- Unsolicited faculty and staff comments concerning the IFI programs

On May 11, 2006, the sub-committee shared a draft of the report with the entire council for review and approval. The Research council suggested minor modifications, which are in this final report, and then unanimously approved the report for submission to Vice President Hay.

Discussion of Issues and Recommendations

Based on the feedback received, it is thought that the IFIs are generally an effective use of funds in promoting and supporting research on campus. There is strong support of these programs amongst faculty and staff researchers. Therefore, it seems that continuing these programs would be beneficial to researchers on campus. However, a number of issues did come up that were thought to be significant and are discussed in this report. These issues include: (i) the purpose of each program; (ii) program eligibility; (iii) budget and budget eligibility; (iv) review process; and (v) targeted programs. Each of these is discussed below along with recommendations.

I. Purpose of Each Program. The stated objective for three of the IFI programs under review, BSFI, MPSFI SSFI, is that the IFI programs are to provide **seed** funding to strengthen the University's research activities and infrastructure, thereby accelerating careers and enhancing University researchers' abilities to compete for external support (see Appendix A). These programs also seek to support eligible applicants in developing new initiatives or directions in their discipline. Projects that may have state, regional, national or international impact and that will subsequently enhance the competitiveness of related applications for external funding are of greatest interest. Priority will be given to faculty and research staff who are early in their careers at The University of Iowa, especially assistant professors and research staff who are in their first 6 years of service. While these individuals will receive funding priority, proposals from other faculty and staff may be considered and funded when the review committee finds that the applicant and DEO make a compelling case for research support.

The stated objective for the IREU program differs and is to encourage all faculty members and research staff in all disciplines to consider involving an undergraduate in their research projects. Proposals that seek to involve students in intellectual scholarly work, experimental and laboratory-based research, and/or creative work in the arts are eligible. Of most interest are applications that fully engage the student in the work: from contemplation of the work, through analysis, and presentation of results. In some cases, students may be able to engage in a nearly independent project, though one related to the overall research program. Work that can lead to an honors thesis, publication, or other form of recognition for the student is encouraged. Proposals that intend to narrowly involve students in only a limited aspect of a project, such as retrieving references or assaying samples, will not be supported. Regular opportunity for the student to interact with and to be mentored by the sponsoring faculty/staff member is crucial in all cases.

In general, the committee agreed with the stated objectives of the BSFP, MPSFP and SSFP IFIs, to provide seed funds so that researchers can generate preliminary data in new focus areas and that this data be used to garner major funding sources external to the University. The committee thought that these programs could be better reviewed in the future if there were better tracking of the success of the BSFP, MPSFP and SSFP initiatives. This can be done through the internal routing forms used to track external grant fund submissions. Even the IREU, could be tracked as this IFI program may also for some disciplines with access to external funding be a driver for garnering external funding. The information provided by the tracking can be valuable and help shape IFI programs in the future. For example, there was discussion amongst the subcommittee about how the support of conferences can be justified as seed grant funding. This discussion, as well as others, can be placed in better context if more information could be provided about the

success of these grants with respect to the stated objective of the programs. In fact, one suggestion is that proposals are not eligible for consideration unless a plan is included concerning future attempts to secure external funding. For individuals in departments designated as “social science departments” who are engaged in research that more humanities-like in nature, it is suggested that when deemed appropriate proposal writers should be advised to submit projects to AHI for funding.

II. Program Eligibility. In many ways, eligibility is set by the purpose of each program. The only program that addresses program eligibility in any detail is the IREU program. For the IREU program it stated that all tenure-track or tenured faculty, clinical faculty, research scientists, research engineers, and other staff members for whom research and scholarship are assigned job responsibilities are eligible to apply for this grant. While these individuals will receive funding priority, proposals from other faculty (e.g. emeritus) may be considered and funded when the review committee finds that the applicant and DEO/Chair make a compelling case for research support. NOTE: Faculty/research staff who received an IREU award in Fall 2004 or Spring 2005 are NOT eligible for this call for proposals. For the other programs it was stated that priority will be given to faculty and research staff who are early in their careers at The University of Iowa, especially assistant professors and research staff who are in their first 6 years of service. While these individuals will receive funding priority, proposals from other faculty and staff may be considered and funded when the review committee finds that the applicant and DEO make a compelling case for research support.

Several issues were discussed with respect to program eligibility. First, there seems to be some lack of clarity with respect to program eligibility of BSFP, MPSFP and SSFP. Members of the committee thought it should be broadly defined in terms of the individual should be a university researcher, working in a new focus area with the expectation that person will work toward securing external funding opportunities for the research. Further discussion of what a university researcher was complicated by the fact that this may differ considerably in the different colleges. In general there was agreement that postdoctoral associates and graduate students were considered to be ineligible to apply for these grants.

In addition, another important objective of IFI programs is to help newly hired faculty and staff. From the statistics shown in Appendix B, it appears that in fact newly hired faculty and staff are responding to the IFI programs. This is important as newly hired faculty and staff need to write new grant applications so that they can be critiqued. This allows for new faculty to gain experience in grant writing and gaining support for their program. As for all those who are eligible, the criterion of novelty is applicable. Thus, it may be appropriate that a new faculty with significant startup funds should write a proposal that is independent of the project that obtained a faculty position and associated start up funds. Once startup funds are depleted, proposals closer to the PI's main research focus are encouraged. Proposals from senior researchers (e.g., tenured faculty and senior staff) are appropriate provided that the proposal is in a new focus area and initial results will substantially improve the fundability of external grant applications. Thus the case should be made for novelty and new areas for all and proposals that are derivative of existing external funding are not appropriate. One recommendation may be that the wording of the eligibility requirements changes to reflect the above comments. Based on the

lower success rate of newly hired faculty and staff compared to senior researchers (Appendix B), another recommendation is to review new researchers separate from more senior ones.

III. Budget and Budget Eligibility.

Budget information and justification are required components of the submission of IFIs. The eligible budget items are listed on the program announcement. Eligible budget items may include research personnel, including undergraduate and graduate student stipends (fringe benefits and graduate student mandatory tuition costs must be included in the budget; more information), equipment, supplies, payment to subjects, computer and other related services, one month of summer salary support, any other costs relevant to creative and scholarly activity, and domestic or international travel expenses required to conduct the research. For some reason, there was confusion this year in the BSFP review process on whether travel funds should be allowed even though it is clearly stated on the announcement that only travel necessary to do the research is allowed.

In the review process of the BSFP grants this year considerable effort was made to rank the proposals on the basis of their scientific merit and the financial needs of the investigator. However, very little consideration was given to the *feasibility* of performing the proposed experiments under the constraints of the proposed budget. Specific aims need to be realistic and there needs to be a more detailed demonstration that they can be achieved by the proposed budget. This should be included as one of the main criteria used to assess the proposals. One way to do this is to have a timeline for the proposed activities that would lead to enough preliminary data for submission of an external proposal.

There was general recognition by the BSFP reviewers that the funds were insufficient. In general, for BSFP it was thought that the awards were insufficient to fund either one graduate student or one Research Assistant working full-time for one year and to have anything left over for supplies. Most proposals resorted to asking for funds for one person working half time on the project. The lack of full time personnel focused on the project may lead to insufficient progress and thus may not result in the likelihood of outside funding. The impression was received that in many of the proposals funds will be used to help maintain the lab and personnel for a limited time while they are waiting to hear about already submitted proposals. At least one full-time person should be working on the project. This means that it may be necessary to award larger and fewer grants in the BSFP in the hopes that these larger grants will more likely enable investigators to obtain new and preliminary data necessary to obtain outside funding. This was not as much of a concern in the other IFI programs. In addition, there is no opportunity to charge salary support on the IFI grants in the current system (only summer salary) and some individuals have suggested that this is a real disadvantage for colleges where salary support is important.

IV. Review Process. The review process may be one of the most difficult issues related to IFIs. Information about review procedures was collected from the chairs of the four IFI committees (Biological Sciences, Mathematical and Physical Sciences, Social Sciences, and Iowa Research Experiences for Undergraduates). The chairs all reported that their committees gave preference to proposals from junior faculty. They varied greatly in their assessments of how well the system worked. Comments ranged from “the process is expensive, broken, and somewhat random” to “the... process works very well”.

Since there seems to be a fair amount of concern about the review process, individual issues and recommendations are numerated below:

1. Proposals must be submitted to their correct topical area. For example, if a proposal from a researcher in math and physical sciences is submitted as a proposal to BSFP, the rationale for submitting to this funding program must be clearly addressed within the proposal. If the review committee or its Chair determines the proposal is better suited to a different program, the proposal can be transferred to the more appropriate program without prejudice. Furthermore proposal that were clearly not in the right program had no recourse as once the review process was underway there was no way to get it rerouted.

2. The review committees differed considerably in how proposal were reviewed. The BSFP review committee triaged applications on the basis of scores handed in before the meeting, discussed only those proposals with mean ranks in the middle, and made few changes in ranking after discussion. The Social Sciences committee, in contrast, changed almost all scores after discussion, many of them significantly. This was done in part because particular numerical rankings (e.g. a score of "2") were not used consistently by committee members. (Some were higher graders than others). The mathematical and physical sciences committee posted ratings, including "rank within a reviewers' set" (e.g. fourth of seven reviewed by a particular committee member), which formed the basis of discussion. There was consensus amongst the RC subcommittee that triaging applications is inappropriate as individuals may use different scales. The RC subcommittee also recommend the NSF model of assigning individual reviews (excellent, very good, good, fair and poor) may be more appropriate than the NIH model of scoring.

3. There is general consensus that it is difficult to insure that each proposal will be given a fair review. Much of the problem lies in the strict conflict of interest criteria used for finding reviewers. As noted by one of the chairs of the review committees, the recusal process is a problem as the person most likely to understand the research behind the proposal is not allowed to speak. Furthermore, finding reviewers who have the expertise to review the proposal is problematic. One suggestion is to consider rewriting the conflict of interest criteria such that only those who will directly benefit from the proposal being written not be allowed to review the proposal. Another suggestion is to ask researchers who were funded in the previous year, since they are not eligible for applying, to act as reviewers. After discussion with Research Council, it was suggested that the easiest way to fix the problem is for members of the review committees to be allowed to participate in the discussion of proposal that are from that member's department. This will provide review committees with the background and knowledge needed to judge the merits of the proposal under consideration.

4. Other issues were noted by individual review committee chairs.

- The health and clinical science applications should have a separate initiative and review.
- The cost of writing/reviewing so many proposals for so little money seems quite outsized.
- It was noted that some faculty take their duty to review proposals more seriously than others...there are some reliability problems with the appraisal process, even accounting for the conversational follow-up that was given to each proposal

V. Targeted Programs. Recent changes in the level of federal research funding have already begun to have an impact upon new grant awards at the University of Iowa. One possible strategy to help alleviate this situation would be for the IFI program to support development of new interdisciplinary research programs or new research programs that can be specifically targeted toward national research initiatives (often times these are interdisciplinary initiatives). Collaborative research has long been a strength at Iowa, and such targeted support might capitalize on this strength, leading to increased grant support for the institution. Nevertheless, such a program would need to balance this support across the research enterprise. One way to accomplish this goal might be to announce a request for interdisciplinary research proposals that has a minimum of investigators from 2 or 3 Colleges. Such proposals should spend some time discussing what funding agency would be targeted for future grant applications. Two such announcements should be made: one for biological and physical sciences, and one for humanities and social sciences. A carefully selected panel should evaluate the proposals, and then make recommendations for funding, as is usually done, except that the makeup of the panel should be chosen based upon expertise in the research proposed in the applications. Only one or two proposals could be funded from each group at a funding level sufficient to establish the collaborative structure needed to generate sufficient preliminary data or results needed for a successful application.

For such targeted programs to be successful, it will be important to involve the campus research community as much as possible. The success of past targeted funds is unclear from the data (Appendix B and C) and how these targeted funds were established should be discussed and reviewed. It might be useful to recruit established interdisciplinary researchers to form an advisory committee in the establishment of these targeted programs. It will also be very important to encourage a mix of junior and senior faculty to become involved in planning for this program. One way might be to request proposals in a particular targeted area that is aligned with some national initiative or funding agency agenda (e.g., NIH roadmap, nanotechnology initiative, emphasis areas at NSF, other national funding initiatives/agendas), which the advisory committee feels would be competitive for funding. Alternatively, the research area might be quite open, but the funding decision would be made in consultation with faculty who are involved with the targeted funding agency as reviewers, so that the timeliness and competitiveness of the applications would be assessed. The goal here is to increase the return (in terms of funded proposals) on IFI-supported seed grant programs.

Summary of Key Recommendations

This report summarizes some of the issues and problems found with implementing the IFI programs. The focus of this report was on the BSFP, MPFP and SSFP. The subcommittee did discuss the IREU but since it is so different than the others it may be more appropriate to review it separately at another date. Several recommendations are given including:

- the need to better track the success of IFIs in garnering external support (the stated objective for 3 of the programs under review) through the internal routing forms as this may provide information that can be used to guide these program in future years;
- the need to better define program eligibility for BSFP, MPSFP and SSFP;
- the need for better oversight of programs by faculty and staff researchers so that proposals are directed to the right program and that budget eligibility is not an issue during the review process;
- consideration of increasing the size of some awards
- a change in the conflict of interest policy and criteria so that each proposal can get a fair and informed review and;
- consider target areas that align with national initiatives and funding opportunities and ensure that target areas are reviewed each year before announcements are made to the university community of scholars and researchers.

Appendix A: 2005 Program Announcements BSFP - Biological Sciences Funding Program

Objective

The objective of the IFI programs is to provide **seed** funding to strengthen the University's research activities and infrastructure, thereby accelerating careers and enhancing University researchers' abilities to compete for external support. This program also seeks to support eligible applicants in developing new initiatives or directions in their discipline. Projects that may have state, regional, national or international impact and that will subsequently enhance the competitiveness of related applications for external funding are of greatest interest. Priority will be given to faculty and research staff who are early in their careers at The University of Iowa, especially assistant professors and research staff who are in their first 6 years of service. While these individuals will receive funding priority, proposals from other faculty and staff may be considered and funded when the review committee finds that the applicant and DEO make a compelling case for research support.

Types of Proposals

The BSFP accepts all types of proposals. Examples include but are not limited to:

- *New initiatives or novel approaches, including proposals that may take investigators in new directions; pilot studies or other activities designed to demonstrate proof-of-concept or to collect data and develop hypotheses (budget not to exceed \$30,000)
- *Large projects or shared infrastructure proposals; "shared" means that a number of disciplines and investigators would benefit from access (typical budget \$30,000-\$50,000)
- *Conferences, workshops, or other events designed to stimulate research or scholarly activity (budget not to exceed \$10,000)

Funding requests should be limited to the minimum practicable amount. Most awards are expected to be at the \$30,000 level or less, and budgets of any size up to this level are encouraged. With very strong justification (e.g., specific, detailed evidence of near-term external funding prospects, or demonstration that proposed infrastructure will have broadly shared impact), awards of up to \$50,000 will be considered.

OVPB highly encourages (but does not require) applicants to focus projects around these areas:

- *Developmental biology/genetics/functional genomics
- *Neurosciences (basic, behavioral, & cognitive)
- *Molecular recognition/structural biology
- *Biocatalysis, drug design, and pharmaceuticals
- *Biomaterials/tissue engineering
- *Bioinformatics/computational biology/biomedical imaging/ bioengineering
- *Environmental Health and Toxicology

Budget / Eligible Expenses

Budget information and justification are required components of the online submission process. Eligible budget items may include research personnel, including undergraduate and graduate student stipends (fringe benefits and graduate student mandatory tuition costs must be included in the budget; more information), equipment, supplies, payment to subjects, computer and other related services, summer salary support*, any other costs relevant to creative and scholarly activity, and domestic or international travel expenses required to conduct the research. Applicants are also encouraged to seek support for international travel from the Office of International Programs.)

Budget categories are:

- *Summer salary: Summer salary + fringe for PI only (maximum of one-ninth of academic year salary)*
 - *Other salary: Salary + fringe for others on project (e.g., research staff, graduate students, undergraduates). Note: grad student tuition costs must also be included (see: www.grad.uiowa.edu/FAQ/GATuitionScholarships.htm).
 - *Equipment: Amount requested for equipment only
 - *Supplies: Amount requested for research supplies, such as animals, glassware, sera, etc.
 - *Program: Amount requested to support non-academic units. Examples include Center for the Book, Center on Aging, Center for New Music.
 - *Event: Amount requested for one-time event (e.g., on-campus conference, colloquium, lecture, etc.)
 - *Travel: Amount requested for all travel-related costs (e.g., airfare, lodging, meals, long-term housing, etc.)
 - *Other: Amount for costs not covered in other budget categories. If you believe an item does not fall within any of the categories listed, enter it under "other" and justify it in the text box provided.
- Justification of each line item is required.

"Bridging" support to maintain research operations in interim periods between grant termination and funding renewal is not available through this competition.

*Recipients may teach or receive grant funds from these programs for one summer month salary (including fringe benefits), but faculty who receive two months (i.e., two-ninths of their academic year salary) from teaching, grant, or other activities are not eligible for summer salary support from these programs.

Proposal Guidelines

All internal funding proposals must be submitted electronically via the UIRIS website at <https://uiris.research.uiowa.edu/> by November 14, 2005. This is a secure site. To gain access to it, you must use your HawkID and password. An online manual is available to help you navigate this web-based application and guide you through the submission process.

It is absolutely essential that applicants write their proposals so that the general purpose and main procedures of the research are comprehensible to nonspecialists. The application MUST contain the following sections in the order indicated, with each section being clearly identified and beginning on a new page. Type font MUST be 11-point Times and margins MUST be at least .75 inches.

Project Narrative (upload file to UIRIS)

(BSFP/BSI themes: 1) Developmental biology/genetics/functional genomics; 2) Neurosciences (basic, behavioral, & cognitive); 3) Molecular recognition/structural biology; 4) Biocatalysis, drug design, and pharmaceuticals; 5) Biomaterials/tissue engineering; 6) Bioinformatics/computational biology/biomedical imaging/ bioengineering)

As outlined below, there are four sections to the project narrative.

1. Summary (maximum: one page double-spaced)

Provide a brief overview of the general purpose and main procedures of the project, comprehensible to nonspecialists.

2. Project Description (maximum: four pages single-spaced; figures, tables, and illustrations are exempt from the four-page limit)

*Provide an explanation of purpose and significance. Include a statement explaining why the award money is essential, why such funds are needed despite any existing external funding and, if applicable, why/how the application is actually for a seed grant.

*When appropriate, provide a statement of the hypothesis to be tested or generated.

*Provide a discussion of methods and procedures (if data collection is involved, discuss analysis).

*Provide bibliographical references relevant to the application (exempt from the four-page limit.)

NB: This entire section may be as technical as the subject demands, but jargon should be kept to a minimum and clarity and comprehensibility should be maintained at the level of a nonspecialist. The aims of the project should be well correlated with the time and funding limitations of the award.

3. Impact of Project (maximum: one page double-spaced)

This section should discuss the feasibility of future work on the project and how the project fits into the applicant's career plans.

Projects should have significant impact (international, national, state, or regional) in the area of study. Discuss the likelihood of external funding, naming specific sources of potential support.

4. Previous and Current Research/Scholarly/Creative Projects

Provide sources of previous, current, and pending support, including start-up funding (previous 8 years – beginning Fall 1997).

Citations of sources of support must contain dates, dollar amounts, and brief, clear descriptions of the work supported by the awards. If none, please so state.

Curriculum Vitae(s)(uploaded file to UIRIS)

Submit a short CV/biosketch. CVs must be included for PI and all co-investigators.

DEO/Chair Endorsement

The applicant's DEO/Chair will be sent an email message from the Office of the Vice President for Research requesting the endorsement of the proposal shortly after the proposal is submitted. The endorsement must be received electronically from the DEO/Chair by November 21, 2005. If the DEO is submitting a proposal, the review will occur at the collegiate level.

Review Criteria

All applications will be peer-reviewed by an appropriate faculty/staff review committee to the Vice President for Research, who will make the final determination of awards.

Funding decisions are based on the following five criteria:

*originality and creativity

*significance, rationale, and hypotheses

*approach, methodology, and data analysis

*resources, environment, candidate qualifications, and budget

*likelihood of project success and future funding prospects

Prospects for subsequent external funding are a significant factor in considering all proposals submitted under these programs.

Greater emphasis on this criterion will be applied to proposals with higher budgets (i.e. \$30,000-\$50,000), because such projects are expected to have nearer-term potential for external support, or will, in the case of shared infrastructure proposals, enable an array of productive research projects. However, even for lower-cost projects, there is a requirement for attention to eventual external support. Applicants are asked to provide substantive information about their prospects and not merely list possible sources of support. For example:

*Cite ways in which proposed project activities and results relate to evaluation criteria for specified external programs.

*Describe feedback received from prior external proposals indicating steps necessary to enhance the competitiveness of future applications; then relate this information to the IFI application.

*Highlight discussions with program officers at external agencies or foundations; translate that input into actions appearing in your discipline.

Applicants should feel free to utilize the resources of the Division of Sponsored Programs for help in identifying other possible sources for future funding.

MPSFP - Mathematical & Physical Sciences Funding Program SSFP - Social Sciences Funding Program

Objective

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Types of Proposals

The MPSFP and SSFP accept all types of proposals. Examples include but are not limited to:

- *New initiatives or novel approaches, including proposals that may take investigators in new directions; pilot studies or other activities designed to demonstrate proof-of-concept or to collect data and develop hypotheses (budget not to exceed \$30,000)
- *Large projects or shared infrastructure proposals; "shared" means that a number of disciplines and investigators would benefit from access (typical budget \$30,000-\$50,000)
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Funding requests should be limited to the minimum practicable amount. Most awards are expected to be at the \$30,000 level or less, and budgets of any size up to this level are encouraged. With very strong justification (e.g., specific, detailed evidence of near-term external funding prospects or demonstration that proposed infrastructure will have broadly shared impact), awards of up to \$50,000 will be considered.

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Budget information and justification are required components of the online submission process. Eligible budget items may include research personnel, including undergraduate and graduate student stipends (fringe benefits and graduate student mandatory tuition costs must be included in the budget; more information), equipment, supplies, payment to subjects, computer and other related services, summer salary support*, any other costs relevant to creative and scholarly activity, and domestic or international travel expenses required to conduct the research. (Applicants are also encouraged to seek support for international travel from the Office of International Programs.)

Budget categories are:

- *Summer salary: Summer salary + fringe for PI only (maximum of one-ninth of academic year salary)*
 - *Other salary: Salary + fringe for others on project (e.g., research staff, graduate students, undergraduates). Note: grad student tuition costs must also be included (see Graduate Tuition Scholarships).
 - *Equipment: Amount requested for equipment only
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Project Narrative (upload file to UIRIS)

As outlined below, there are four sections to the project narrative.

*Summary (maximum: one page double-spaced)

Provide a brief overview of the general purpose and main procedures of the project, comprehensible to nonspecialists.

*Project Description (maximum: four pages single-spaced; figures, tables, and illustrations are exempt from the four-page limit)

*Provide an explanation of purpose and significance. □Include a statement explaining why the award money is essential, why such funds are needed despite any existing external funding and, if applicable, why/how the application is actually for a seed grant.

*When appropriate, provide a statement of the hypothesis to be tested or generated.

*Provide a discussion of methods and procedures (if data collection is involved, discuss analysis).

*Provide bibliographical references relevant to the application (exempt from the four-page limit.)

*NB: This entire section may be as technical as the subject demands, but jargon should be kept to a minimum and clarity and comprehensibility should be maintained at the level of a nonspecialist. □The aims of the project should be well correlated with the time and funding limitations of the award.

*Impact of Project (maximum: one page double-spaced)

This section should discuss the feasibility of future work on the project and how the project fits into the applicant's career plans. Projects should have significant impact (international, national, state, or regional) in the area of study. Discuss the likelihood of external funding, naming specific sources of potential support.

*Previous and Current Research/Scholarly/Creative Projects

Provide sources of previous, current, and pending support, including start-up funding (previous 8 years – beginning Fall 1997). Citations of sources of support must contain dates, dollar amounts, and brief, clear descriptions of the work supported by the awards. □If none, please so state.

Curriculum Vitae(s) (upload file to UIRIS)

Submit a short CV/biosketch. □CVs must be included for PI and all co-investigators.

DEO/Chair Endorsement

The applicant's DEO/Chair will be sent an email message from the office of the Vice President for Research requesting the endorsement of the proposal shortly after the proposal is submitted. □The endorsement must be received electronically from the DEO/Chair by November 21, 2005. □If the DEO is submitting a proposal, the review will occur at the collegiate level.

Review Criteria

All applications will be peer-reviewed by an appropriate faculty/staff review committee to the Vice President for Research, who will make the final determination of awards.

Funding decisions are based on the following five criteria:

*originality and creativity

*significance, rationale, and hypotheses

*approach, methodology, and data analysis

*resources, environment, candidate qualifications, and budget

*likelihood of project success and future funding prospects

Prospects for subsequent external funding are a significant factor in considering all proposals submitted under these programs. Greater emphasis on this criterion will be applied to proposals with higher budgets (i.e. \$30,000-\$50,000), because such projects are expected to have nearer-term potential for external support, or will, in the case of shared infrastructure proposals, enable an array of productive research projects. However, even for lower-cost projects, there is a requirement for attention to eventual external support. □Applicants are asked to provide substantive information about their prospects and not merely list possible sources of support. For example:

*Cite ways in which proposed project activities and results relate to evaluation criteria for specified external programs.

*Describe feedback received from prior external proposals indicating steps necessary to enhance the competitiveness of future applications; then relate this information to the IFI application.

*Highlight discussions with program officers at external agencies or foundations; translate that input into actions appearing in your discipline.

Applicants should feel free to utilize the resources of the Division of Sponsored Programs for help in identifying other possible sources for future funding.

IREU - Iowa Research Experiences for Undergraduates

Introduction

The University of Iowa strives to provide a high quality educational experience for its students. Participation in research programs and scholarly activities represents an opportunity, uniquely available at research universities, to enhance the overall undergraduate experience. The intention of the IREU funding program is to encourage the direct involvement of undergraduate students in the scholarly efforts by providing faculty/research staff with the opportunity to obtain funds to support student involvement in their research. NOTE: Faculty/research staff who received an IREU award in Fall 2004 OR Spring 2005 are NOT eligible for this call for proposals.

Objectives

Eligible faculty members and research staff in all disciplines are invited to consider involving an undergraduate in their research projects. Proposals that seek to involve students in intellectual scholarly work, experimental and laboratory-based research, and/or creative work in the arts are eligible. Of most interest are applications that fully engage the student in the work: from contemplation of the work, through analysis, and presentation of results. In some cases, students may be able to engage in a nearly independent project, though one related to the overall research program. Work that can lead to an honors thesis, publication, or other form of recognition for the student is encouraged. Proposals that intend to narrowly involve students in only a limited aspect of a project, such as retrieving references or assaying samples, will not be supported. Regular opportunity for the student to interact with and to be mentored by the sponsoring faculty/staff member is crucial in all cases.

Type of Proposal

A maximum award of \$3,000 per student will be considered. Each award must be spent within one year of the date of the award. The award must be used to pay for future involvement of the student and is not meant as a prize, honor, or reward for work already completed. A specific undergraduate student need not be identified in the proposal. In such cases, an award can be made, but funds will not be released until a student is selected and identified. Only full-time, matriculated University of Iowa students may be supported through these awards. A student may not be simultaneously supported by both an IREU award and a USA-IA award (Undergraduate Scholar Assistantship—Iowa Advantage).

Eligibility

All tenure-track or tenured faculty, clinical faculty, research scientists, research engineers, and other staff members for whom research and scholarship are assigned job responsibilities are eligible to apply for this grant. While these individuals will receive funding priority, proposals from other faculty (e.g. emeritus) may be considered and funded when the review committee finds that the applicant and DEO/Chair make a compelling case for research support. NOTE: Faculty/research staff who received an IREU award in Fall 2004 or Spring 2005 are NOT eligible for this call for proposals. Eligible students are those who have not earned an undergraduate degree in any discipline.

Eligible Expenses

A maximum award of \$3,000 per student will be made. The full award may be used to support the student and a minimum of two-thirds of the award amount must be applied as a student stipend (fringe benefits must be included in the stipend amount). Up to one-third of the award may be used to support research-related supplies and expenses; these costs must be directly related to the performance of the studies. These funds must “make the difference” in terms of whether the student can be involved in the project or not. Typically, such expenses are for consumables and not for new equipment or other resources that the project should already have available.

Proposal Guidelines

Applications are due November 14, 2005, and shall be made online at <https://uiris.research.uiowa.edu/>. This is a secure site. To gain access to it, you must use your HawkID and password. An online manual is available to help you navigate this new web-based application and guide you through the submission process. Complete all sections except “suggested reviewers.” Provide a short (3-4 sentence) project summary in the space allocated on the “Attachments” tab of the web-based application. Attach the proposal which may be no more than two pages (single-spaced, no less than 11 pt. Times font, with margins at least 0.75 inches). It should address the six points listed below.

1. Description of the research project or scholarly activity; must include evidence of a well-established, ongoing project or activity; such evidence may include sources of external support, identification of related centers or laboratories and related activities, scholarly records, and comments on the faculty member’s experience with the work to date.
 2. Description of the work that the student will perform.
 3. Level of the student’s involvement in the overall project; how will he/she be integrated into all aspects of the research project and the regular, day-to-day activity with other project personnel and the principal investigator.
 4. Explain benefit to the student; this may include graduation with honors, impact on other studies, and preparation for graduate or professional work.
 5. Provide a timeline for the work, showing as appropriate the student’s preparation, involvement, and follow-up activities.
 6. State the proposed amount of the award, not to exceed \$3,000 (fringe benefits must be included in the stipend amount) and describe how the amount will be used. The full \$3,000 may be used as an undergraduate student stipend but up to \$1,000 of the award may be used for required supplies and expenses—please justify budget request. Indicate an approximate number of hours of work per week in which the student will be engaged through the life of their involvement on the project.
- Do not route proposals through the Division of Sponsored Programs.

DEO/Chair Endorsement

The applicant's DEO/Chair will be sent an email message from the Office of the Vice President for Research requesting the endorsement of the proposal shortly after the proposal is submitted. The endorsement must be received electronically from the DEO/Chair by November 21, 2005.

Review Criteria

The peer review of proposals will consist of assessment of:

1. responses to the six points described above;
2. existence of a suitable context for involvement of an undergraduate in a research project or scholarly activity; and
3. prospects for a meaningful student experience.

Upon completion of its review, the committee will convey its findings to the Vice President for Research, who will make final decisions about awards.

IREU Reporting Requirements

Students supported through one of these awards are asked to submit a report to the Office of the Vice President for Research at the conclusion of their research assignment but no later than one year from the date of the award letter. The sponsoring faculty member must also sign the report. These reports can be in simple letter format, and they must describe the work done by the student (one paragraph), provide an assessment of the value of the experience, including contributions to the sponsoring faculty member's work (one paragraph), and indicate any papers published, speeches given, or other forms of recognition of the work done. The students are also requested to present their work at the annual Spring Undergraduate Research Conference that is co-sponsored by the University Honors Center. Information on the conference will be available on the Honors Program website or by contacting Bob Kirby (robert-kirby@uiowa.edu or 335-1684).

Appendix B – Data Collected on IFIs by the Office of the Vice President for Research

FY 2006 Programs

	Program	# of applications submitted	# of applications funded	total \$\$ Funded
	Fall IREU	39	18	53,480
	Spring IREU	36	17	46,400
	BSFP	46	10	300,000
	MPSFP	28	8	198,000
	SSFP	18	10	200,000
	AHI	82	41	340,000
		249	104	1,137,880

FY 2005 Programs

	Program	# of applications submitted	# of applications funded	total \$\$ Funded
	Fall IREU	25	18	53,875
	Spring IREU	38	15	41,125
	BSFP (combined BSI Pilot)	38	10	298,497
	MPSFP	10	6	176,669
	SSFP	13	7	200,000
	CSRIG	14	3	88,096
	AHI	55	38	305,345
		193	97	1,163,607

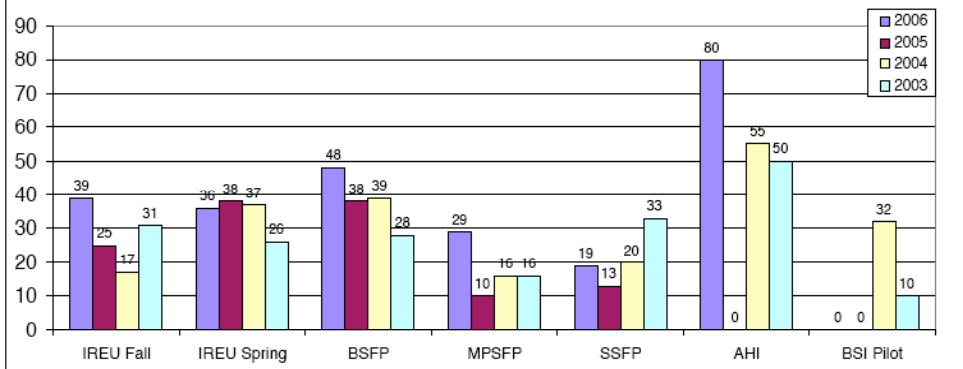
FY 2004 Programs

	Program	# of applications submitted	# of applications funded	total \$\$ Funded
	Fall IREU	17	11	31,290
	Spring IREU	37	10	30,000
	BSFP	39	3	90,000
	MPSFP	16	6	176,409
	SSFP	20	8	171,476
	CSRIG	10	8	103,516
	AHI	55	33	301,371
	CIP	17	5	102,127
	III	12	5	148,737
	BSI Pilot Grant	32	4	200,000
		255	93	1,354,926

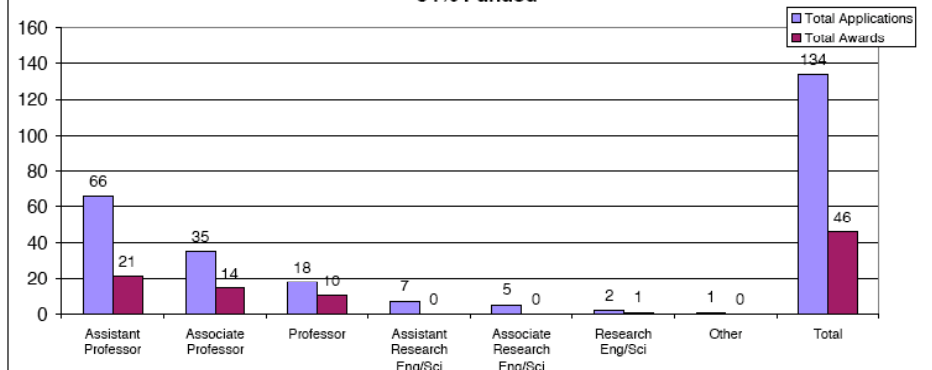
FY 2003 Programs

	Program	# of applications submitted	# of applications funded	total \$\$ Funded
	2 Fall IREU	31	22	64,399
	Spring IREU	27	15	44,994
	BSFP	28	7	150,081
	MPSFP	16	7	202,269
	SSFP	33	12	217,704
	CSRIG	11	9	125,020
	AHI	50	38	307,882
	CIP	18	5	121,986
	III	14	8	199,096
	BSI Pilot Grant	10	3	150,000
		238	126	1,583,431

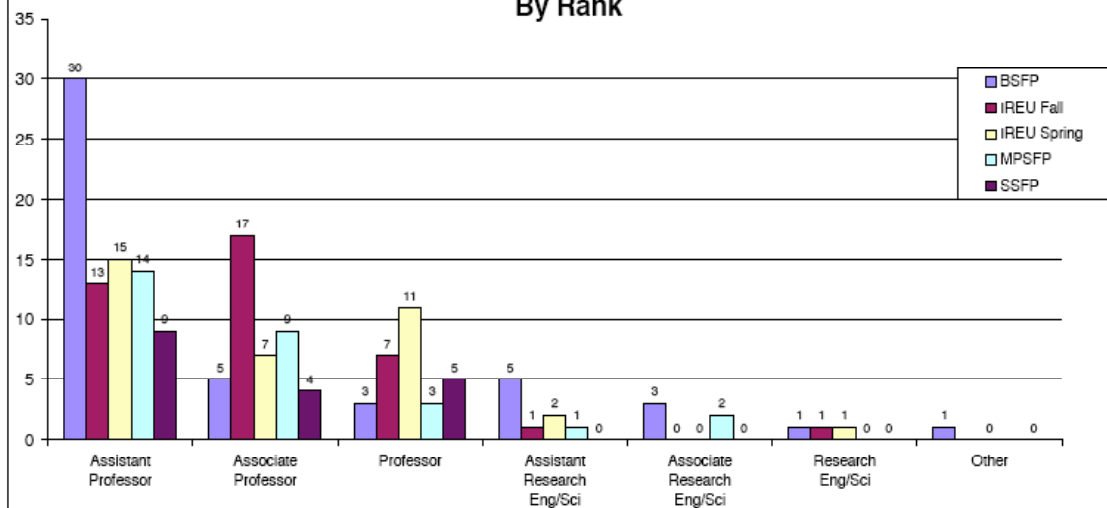
IFI Programs Four Year Trend Number of Applications

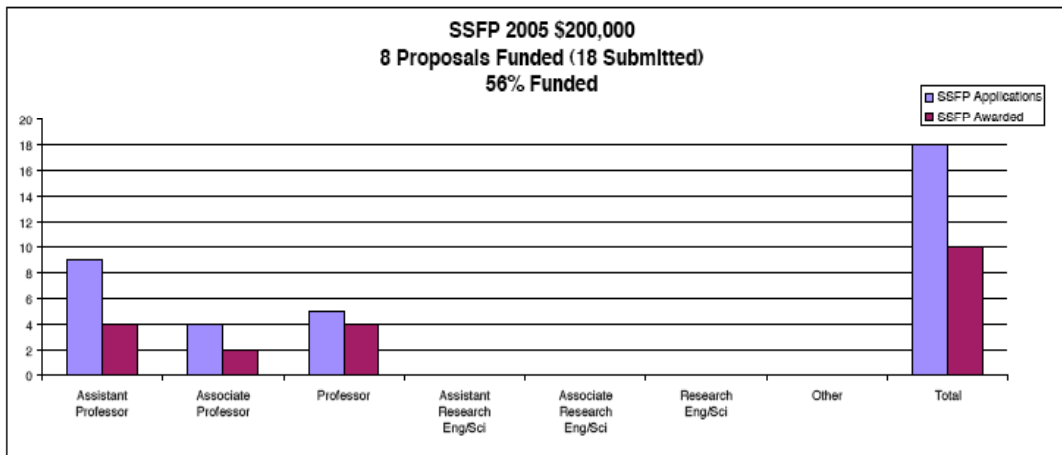
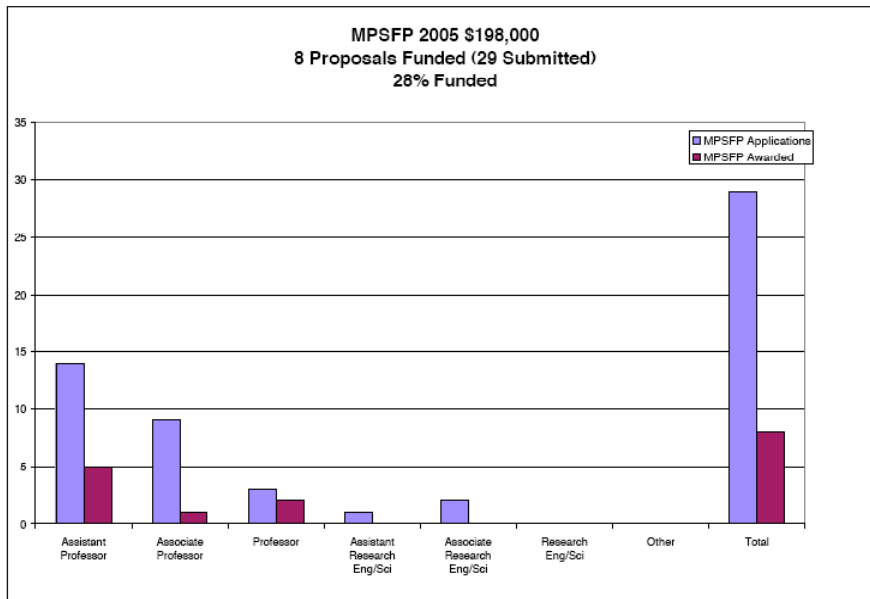
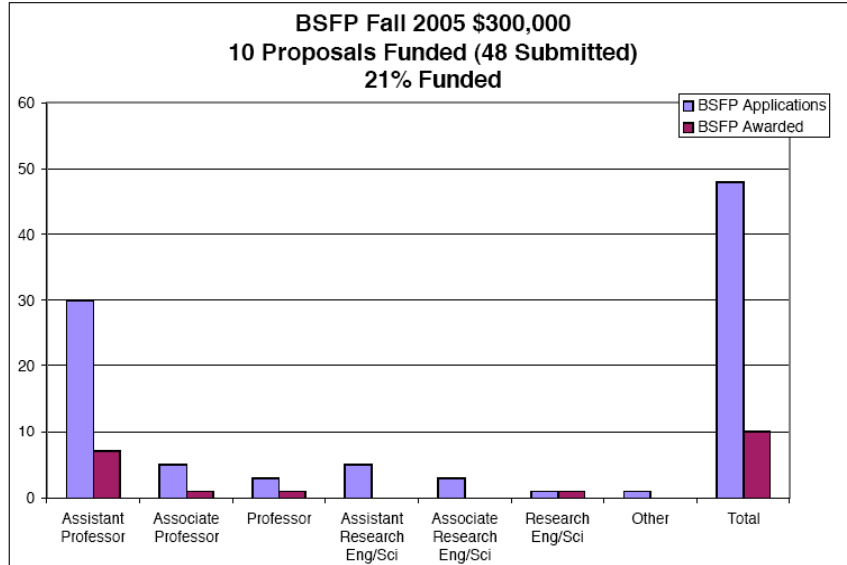


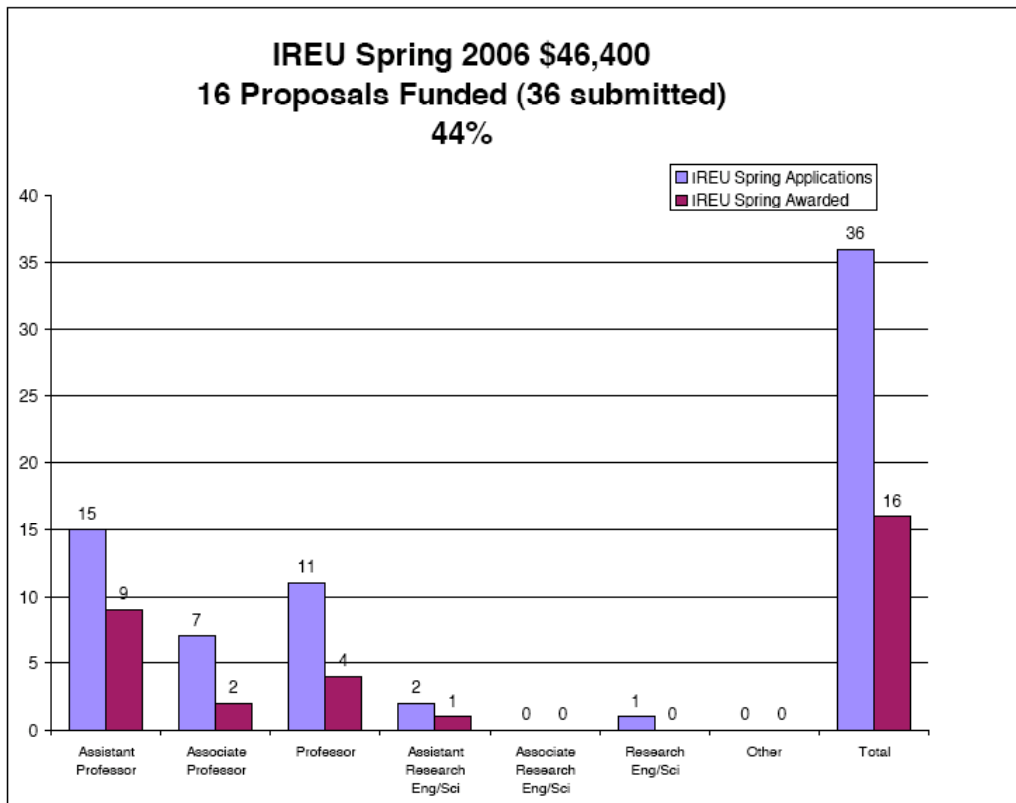
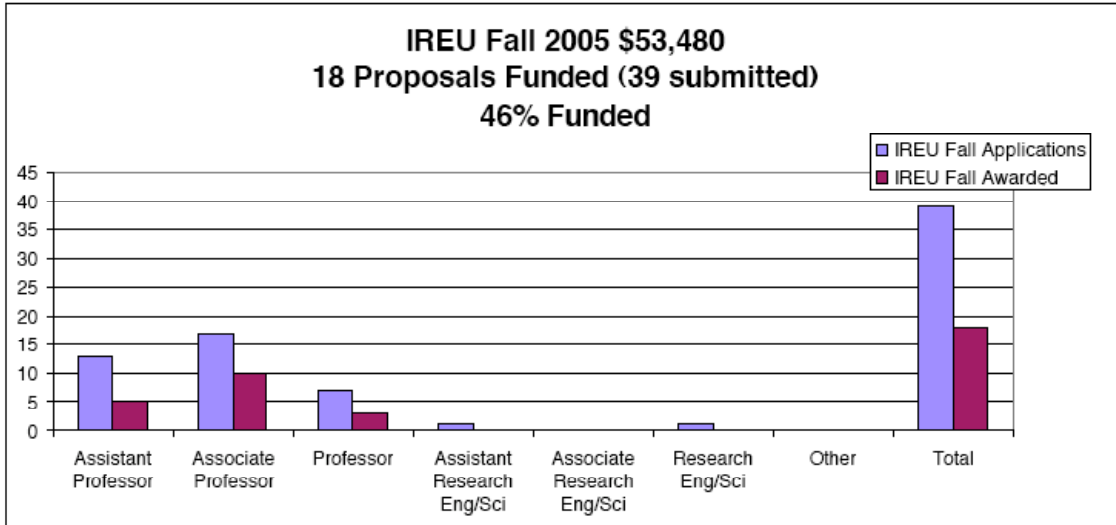
Fall 2005 IFI Programs \$751,480 46 Proposals Funded (134 Submitted) 34% Funded



FY06 IFI Applications By Rank







Appendix C -Summary of Progress Reports

Biological Sciences Funding Program (BSFP) FY 2003-04

Awarded

- 39 proposals submitted
- 3 proposals awarded at a level of \$30,000 \$90,000 total (2 faculty in CCoM, 1 in Pharmacy)

As of October 2005

External Support

- 1 proposal submitted to NIH in June 2005 is pending
- 1 proposal submitted to NSF (resubmitted for funding in July 2005)
- 1 funded grant from American Cancer Society (\$150K)
- 1 proposal submitted to NSF is pending

Publications/Presentations

- 1 patent
- 3 published manuscripts
- 4 papers accepted for publication
- 2 pending submission
- 1 poster
- 1 manuscript in preparation

As of October 2005 all three projects are listed as ongoing.

Mathematical & Physical Sciences Funding Program (MPSFP) FY 2003-04

Awarded

- 16 proposals submitted
- 6 proposals awarded at approximately \$30,000 each for \$176,409 total (2 faculty in Chemistry, 2 in Physics & Astronomy, 1 in Mechanical Engineering and 1 in Statistics & Actuarial Science)

As of April 2005

External Support

- 1 proposal under review with the Dept of Energy
- 1 proposal under review with NSF
- 1 proposal in preparation for NIH
- 1 proposal funded by NSF AMOP (\$300,000, 3-yr term)
- 1 proposal funded by DARPA (\$2.6 million, 5-yr term)
- 1 proposal funded by American Cancer Society (\$35,000, 2-yr term)

Publications/Presentations

- 2 papers in preparation
- 1 paper is under review
- 1 published papers
- 3 manuscripts in preparation

As of April 2005 all 6 projects are ongoing.

Social Sciences Funding Program (SSFP) FY 2003-04

Awarded

- 20 proposals submitted
- 8 proposals awarded for \$171,476 total (1 faculty in Journalism & Mass Comm, 1 in Economics, 1 in Accounting, 1 in Anthropology, 1 in Psychology, 1 in Political Science, 1 in Social Work & 1 in the Office of State Archaeologist)

As of April 2005

External Support

- 1 expected proposal submitted to NSF
- 1 proposal submitted an RO1 to the Centers for Disease Control and Prevention
- 1 proposal in preparation to Nat. Inst. of Mental Health
- 1 proposal pending with Wenner-Gren Foundation
- 1 proposal funded by the John A. Hartford Foundation (\$100,000)

Publications/Presentations

- 1 paper in preparation
- 5 published papers
- 2 manuscripts in preparation
- 3 conference abstracts submitted

As of April 2005, 6 projects are ongoing and 2 have been completed

Iowa Research Experiences for Undergraduates (IREU) FY 2003-04

Awarded

- 17 proposals submitted
- 11 proposals awarded at approximately \$3,000 each (for \$31,290 total (3 faculty in Geoscience, 1 in Pediatrics, 1 in Anthropology, 1 in Biological Sciences, 1 in Pharmacology, 1 in Psychology, 1 in Management & Organization, 1 in Psych & Quant Foundations and 1 in Preventive & Community Dentistry)

As of April 2005

External Support

- 2 expected proposals submitted to NSF
- 1 proposal funded by CGRER
- 1 proposal funded by NSF (\$233,055, 3-yr term) with aide from IREU research findings
- 1 received funds by the Iowa Living Roadway Trust Grant - \$20,000
- Results are a major portion of 1 proposal in preparation to Nat. Inst. Of Neurological Disorders and Stroke (NINDS)
- Student continued work on an ongoing NSF grant

Publications/Presentations

- 5 papers were published
- 1 lecture presented
- 1 paper is under review
- 2 manuscripts in preparation
- 2 theses

As of April 2005, 9 projects are ongoing and two have been completed.

Other Seed Grant Programs

BSI Pilot Grants FY 2003-04

Awarded

- 32 proposals submitted
- 4 proposals awarded at a level of \$50,000 = \$200,000 in funds (2 faculty in CCoM, 1 in CLAS and 1 in CoEng)

As of October 2005

External Support

- 1 proposal submitted to NSF in July 2005
- Data used to support 4 proposals to following agencies (American Heart Association, American Diabetes Association, NIH, and VA). 1 funded and 3 pending

Publications/Presentations

- 1 publication in *Plant Physiol*, 2005
- 2 publications submitted (*Advanced Materials* and *Biomaterials*)
- 2 poster presentations at national meetings in 2005
- 1 presentation at an international meeting 2005
- 1 manuscript in revision

As of October 2005 all three projects are listed as ongoing.

Collaborative Interdisciplinary Project (CIP) FY 2003-04

Awarded

- 17 proposals submitted
- 5 proposals awarded for \$102,127 total (1 faculty in Pharmacy, 1 staff in the University Hygienic Laboratory, 1 faculty in Psychiatry, 1 faculty in Neurology & 1 faculty in Microbiology)

As of April 2005

External Support

- 3 expected proposals submitted to NIH
- 1 proposal submitted to NIH R21
- 1 received monies from a trust fund

Publications/Presentations

- 1 paper in preparation
- 1 poster format presentation at a Conference
- 1 award funded the 'Iowa Conference on Emerging Infectious Diseases'

As of April 2005, 4 projects are ongoing and one has been completed.

**Iowa Informatics Initiative (III)
FY 2003-04**

Awarded

- 12 proposals submitted
- 5 proposals awarded for \$148,737 total
- 1 faculty in Civil & Environmental Engineering, 1 in Geoscience, 2 in Nursing, 1 in Biostatistics-Public Health Genetics

As of April 2005

External Support

- 1 proposal funded by NSF (\$102,421, 2-yr term)
- 1 expected proposal submitted to NIH
- 1 proposal submitted to National Institute of Mental Health R03
- 1 proposal submitted to NSF
- 1 proposal submitted to Army Breast Cancer Program

Publications/Presentations

- A new version of the NMITA database was released
- 1 paper in preparation
- 2 papers are under review
- 4 published papers
 - 1 published manuscript

As of April 2005 all 4 projects are ongoing.
