smu science and engineering research initiative

proposal deadline: 31 october 2019

smu’s strategic plan, launching smu’s second century, establishes a goal of increasing annual research expenditures to $50 million by 2025, and encourages widespread development of campus-wide interdisciplinary research to drive increasing external support for research and creation of programs that position smu as a world leader in addressing global challenges. in support of these goals, continuing the ascent proposes “a seed fund for bold ideas in research and creative activity to elevate smu’s intellectual footprint and attract sustainable philanthropic or grant revenue.”

the smu science and engineering research initiative (seri) investment is a new initiative designed to develop interdisciplinary research teams that will have both high impact and a high probability for significant and sustained external funding from federal, corporate, or philanthropic sources. inclusion of appropriate expertise from the arts, business, education, humanities, law, social sciences, and theology (abhehlst) in a research team is encouraged but not required. a separate program, smu investment in abhehlst, will also be launched. funding will come from oe2c savings, consistent with goals of the university’s strategic plan and recommendations in continuing the ascent, and the university has already set aside at least $2,000,000 for these initiatives.

faculty are invited to submit proposals for funding from the seri to support the creation of research teams of faculty to address topics of major social and/or scientific importance. successful proposals will be those with the greatest potential for future high impact discoveries and innovation, judged by their scientific merit, financial, sustainability, and potential impact on society.

objectives of the smu science and engineering research initiative

1. to create highly productive and competitive interdisciplinary research teams from across the campus. research teams will be expected to:

   a. pursue opportunities where the complexity of the research agenda requires the advantages of synergy, scale, and shared resources that interdisciplinary research teams can provide;
b. Support frontier investigations across disciplines that are essential to the intellectual and scientific growth of the campus, and the economic development of Dallas and North Texas;

c. Become financially self-supporting within a three-year time frame;

d. Facilitate development of research partnerships with industry and private foundations;

e. Influence important national societal and/or policy dialogues;

f. Drive the creation of pre-competitive technology (i.e. technology development in which competitors collaborate.);

g. Enhance opportunities for undergraduate research and interdisciplinary graduate student and postdoctoral training;

h. Support the goals of SMU’s Strategic Plan.

2. To enhance core research services that support interdisciplinary research.

Award Information

Research teams receiving awards will be eligible for up to three years of funding, depending on scholarly and creative strategic progress and success meeting milestones (see section on Award Process below for more information on the annual review process).

Awards will be for approximately $100,000 to $500,000 over three years. The number of awards will be based on their quality and the availability of University funds. Although award funding will not be sufficient to solve the high-level challenges identified by a Team, it should be sufficient to create the preliminary data, enhance human resources, and provide proof of principle that are vital to securing funding from federal, foundation or corporate sponsors.

The principal investigator for each funded Research Team, herein referred to as the Team Leader, will report on research activities directly to the Associate Vice President for Research (AVPR). Each Team will be given status as a Special Research Project (SRP) within the Office of Research and Graduate Studies (ORGS).

Instructions for Proposal Submission

General content and requirements

Proposals should be submitted in the form of a “white paper,” that presents the major objective(s) of the Research Team. Desired outcomes must have major social and/or scientific impacts. Problems addressed by a Research Team should be broad in scope and require an interdisciplinary approach. Details of the required content are provided below.
• A Team Leader must be identified. The Team Leader will be responsible for all correspondence relating to the proposal, as well as other planning activities during the development of the Team. An individual can be a Team Leader on only one proposal. Ideally, a Team Leader will be a tenured faculty member with demonstrated success in attracting significant external funding for research.

• Teams should optimally include no less than three additional faculty, herein referred to as Team Faculty, each of which must play a central role in the planning, execution and governance of the Team’s research activities. Team Faculty participants must be clearly justified on the basis of their expertise and contribution to the Team’s goals.

• Because each Team is urged to be interdisciplinary in nature, Team Faculty taken as a group must be drawn from more than one academic department; some preference may be given to teams that involve faculty from more than one school or college.

• Additional faculty and staff who will contribute to the research may be identified as Affiliates. Affiliates may also be located at other universities, or for-profit or non-profit sectors; however, Program funding cannot be used to support any participant who is not an employee of SMU.

• SMU faculty and staff may be associated with more than one Team proposal and more than one funded Team as Team Faculty or Affiliates.

• SMU graduate students and postdoctoral researchers may be supported with Program funds, and such positions are strongly encouraged in Team proposals. In such cases, it is expected that students and postdoctoral researchers will work at the interdisciplinary boundaries of research activities. Postdoctoral Fellows supported by an award will be expected to contribute in relevant and significant ways that will make a Team competitive for sustained external funding. Graduate students and postdoctoral researchers will be funded for no more than three years.

• Major equipment requests may be considered but must be strongly justified in the budget documentation.

• Proposals that leverage Program funding with support from corporate, foundation, or other partners deemed relevant to the mission of a Team will be given high priority in the review process. If an external sponsorship is possible for a proposed Team, the Office of Research and Graduate Studies or the Offices of Development and External Affairs as appropriate, will engage with the Team Leader, Team Faculty, and company or foundation representatives to assist in completing an agreement that will lead to a funded partnership.
Proposal Instructions

Submissions are due no later than 31 October 2019. Proposals must be submitted online through an Office of Research and Graduate Studies web page that will be available 31 July 2019. Submissions must be in the form of a single PDF file that includes six required components in the following order:

a. **Cover Page**: (not included in 12 page limit) Form to be provided on the ORGS web page for proposal submission.

b. **White Paper**: The white paper must not exceed 12 pages (11 pt Arial font, one-inch margins). The white paper should address the following points:
   
i. **Overview and Rationale (~2 pages)**
   - What are the major scholarly issues to be addressed by the Research Team? What important societal problem(s) will be addressed? Why is an interdisciplinary approach required? Describe in sufficient detail the interdisciplinary approach that will be used to address the problem(s). Who are the stakeholders in the research outcomes? Describe the social, legal, and ethical issues that may arise.

ii. **Team Membership and Expertise (1 to 2 pages)**
   - Describe the expertise each Team Faculty member brings to bear in solving the main problems to be addressed by the Team. Expertise of Affiliates may be discussed.
   - As appropriate, indicate the role of potential Affiliates in the Arts, Business, Education, Humanities, Law, Social Sciences, and Theology.

iii. **Resources and Infrastructure (~1 page)**
   - What specialized infrastructure (e.g., laboratory space and support facilities) is required for the proposed research?
   - Is there a need for large specialized equipment? Briefly describe the equipment and infrastructure required, and justify the request.

iv. **Organization and Administration (~1 page)**
   - Briefly outline the proposed Team’s organization and internal administration.

v. **Education and Training (1 to 2 pages)**
   - Describe how graduate students and postdoctoral researchers will be effectively engaged to support the activities of the Team (rather than the research interests of an individual investigator). State where they will be housed administratively, and what, specifically, they will be expected to accomplish.
   - What, if any, externally funded pre- and/or post-doctoral training programs are planned?
• Describe the research opportunities/programs that the Team will create for undergraduate students.
• Describe any externally funded academic activities planned to be engaged by the Team (courses, training grants, conferences and symposia, etc.) at all levels (undergraduate and graduate).

vi. Potential for Intellectual Property and Economic Development (~1 page)
• If one or more corporate partners are identified, describe in detail the nature of the partnership(s). For Teams that have successfully procured a commitment of matching funds from private industry or foundations, the vision and reasons for the partnership should be clearly stated in this section.
• What kind of intellectual property is likely to arise from the proposed research? How is knowledge transfer envisioned for new intellectual property developed by the Team?

vii. Sustainability (~2 pages)
• Identify potential funding sources for the Team’s activities and provide specific examples.
• Describe in detail the strategies to be used by the Team to obtain large-scale funding and a plan for sustainability beyond the three-year funding period.

viii. Measurements of Success (~1 page)
• What are the critical metrics that will determine the success of the Team?
• What are the risk factors that could impact the Team efforts?
• Present milestones and a timeline for Team development and activities.

c. References Cited: No page limit. (not included in 12 page limit)

d. Budget: (not included in 12 page limit) Form to be provided on the ORGS web page for proposal submission.

i. Do not include any indirect costs in the budget.

ii. No salary of any kind for Team Faculty who are tenured or tenure-track will be supported by the Program.

iii. Salary for Team Faculty and Affiliates who are neither tenured nor tenure-track will be allowed for up to 25% effort. Salaries must be justified.

iv. Salaries may be escalated up annually to 2% during the grant period. If non-budgeted salary increases are authorized by the campus during the grant period, those increases will be honored by the Program.
v. Total salary costs should be grouped by personnel category as indicated on the budget forms provided, and itemized in the budget justification.

vi. Program funds may only be used to support SMU personnel and activities.

e. **Budget Justification**: Provide a brief explanation of the budget elements specified in the budget form. Proposals that indicate an external match for the proposed research should describe those arrangements and provide a non-binding letter of intent from the sponsor indicating the nature of support for the activities of the Team, the anticipated amount per year and expected duration of the funding activity. The match can be in the form of cash, in-kind, or other support that can be quantified. Salaries for all faculty and staff should be adequately justified.

f. **CVs for Team Leader, all Team Faculty and Key Affiliates**: Four pages maximum each. A standard NIH, USDA, or NSF biosketch is ideal. This document should include positions held, educational experience, relevant honors and awards, recent and/or relevant publications, and a list of currently funded (or recently expired) extramural projects.

### Review Process

An *ad hoc* External Scholarly Advisory Committee (ESAC) appointed by the Provost will assess the proposals. The committee will be chaired by a distinguished faculty member or Emeritus/Emerita, with administrative support provided by the AVPR. The ESAC will comprise distinguished scholars from academia, industry or private foundations. Deans will nominate candidates for the ESAC to the Provost based on input from their respective faculties with the understanding that ESAC members must be free of conflicts (i.e., they are not, and have not, been engaged in collaborative research with any of the proposing faculty). The ESAC will advise the AVPR on the merits of the proposals and rank them for funding. The Provost, in consultation with the AVPR, will be responsible for final decisions. The AVPR will be responsible for implementing the recommendations of the ESAC.

The primary criteria used to evaluate proposals will be:

1. The quality of the research (interdisciplinary approach, importance of the problem); potential for transformative research leading to paradigm shifts, will be highly valued. How will the research elevate SMU’s national and global academic visibility?

2. The qualifications, experience and productivity of both the Team Leaders and additional personnel. Only essential expertise will be considered. Addition of inadequately justified personnel will not be viewed positively.
3. The proposal’s commitment to and integration of students – both graduate and undergraduate – into the design and implementation of the proposed research activity.

4. Provision of an environment that prepares students more effectively for careers in evolving interdisciplinary fields in academia, industry, and policy.

5. The quality of the research environment in which the proposed research is to be conducted and its potential for broadening and strengthening the ability of young investigators, postdoctoral researchers and trainees to conduct innovative and substantive research of a genuinely multidisciplinary nature.

6. Demonstration of potential positive impact of the project on the relevant stakeholders and on society in general.

7. Plan to capture intellectual property value from initiatives.

8. Plan for sustainability beyond the three-year funding period.

9. Demonstration of intent to seek matching funds and a plan of action to secure same. While not a requirement for funding, the successful procurement of matching funds may be considered a validation of the proposal’s merit and will be taken into consideration in the overall ranking.

The review committee may solicit revisions or additional information if necessary to achieve a final ranking of submissions. In addition, the committee may recommend that proposal author(s) make a verbal presentation in order to clarify organizational and scientific aspects of the proposal. The ESAC may suggest that some teams coalesce around a single research area where significant overlap or potential synergy of effort is evident.

A multi-question scoring system will be used by the ESAC to rank the proposals. The Provost will communicate award decisions directly to Team Leaders, with a written summary of reasons given for the decision. An objective of the review process is to identify teams that are best positioned for success and appropriate to the Program; therefore not all Research Teams will be selected for funding. Should programmatic funding remain after the first round of proposals, there may be another opportunity to submit white papers in Fall 2020.

**Award Process**

A. **Administrative Support.** Research Teams may receive administrative support from the AVPR for the preparation of multi-investigator grant proposals and other materials that may be required for the full development of the project.
B. **Annual Review.** Progress toward meeting the objectives of each Team will be reviewed annually by the AVPR, with input solicited from a committee of highly qualified faculty. A reporting document specific to the Program will be used.

C. **Funding Period and Termination.** Teams receiving awards will receive funding for up to three years. After that period, the Teams will be expected to be completely self-sustaining. Funding may be discontinued before the end of the third year if adequate progress is not made toward reaching the Team’s goals and meeting metrics for sustainability.

D. **Space.** It is recognized that co-location of Team members and their Teams is a key factor in achieving success. Funded Teams will be encouraged to work with Department Chairs and Deans to identify adequate space where all, or part, of the Team activities can be housed.

E. **Faculty Turnover.** It is essential that Teams can respond to new scientific opportunities. This may necessitate a natural turnover of faculty and affiliates within a Team. Each Team may establish its own procedures for adding or removing participants. Changes in participation should be communicated directly to the AVPR. Teams should keep faculty and affiliates to an optimal number that allows the Team to reach its goals.

F. **Indirect Cost Recovery.** The distribution of indirect cost recovery for multi-investigator externally funded grants generated by a Team will be treated according to standard SMU policy.

G. **Annual Conference.** Awardees will be expected to participate in an annual conference showcasing the accomplishments of the Research Teams.

H. **Decisions.** We expect that funding decisions will be made no later than 15 January 2020. Notifications will be made by the Office of the Provost to Team Leaders.

I. **Continuation.** At the end of the three-year period, Teams may be continued if they are self-sustaining. All efforts will be made to facilitate the stability and longevity of funded Teams.

**Contact Information**

For further information please contact: sponsoredprojects@smu.edu