INTRODUCTION: In this complex globalized society in which we live there are human problems that can only be solved through the use of innovative research. It is imperative that UTSA, as an aspiring premiere research institute, encourage and support the type of research that can address broad issues, answer complex questions and solve problems beyond the scope of any one discipline: interdisciplinary research. To that end, this white paper will address the nature of interdisciplinary research and the strengths of UTSA to support and those challenges that stand to impede progress in conducting interdisciplinary research at UTSA.

WHAT IS INTERDISCIPLINARY RESEARCH? Interdisciplinary research is an approach to research that draws across various disciplines and integrates information in ways that create a new (and deeper) understanding of a complex problem. It is different from multidisciplinary research, which tends to be “additive” in nature. Interdisciplinary research is explicit and intentional. According to NIH, an integrative study, ...integrates the analytical strengths of two or more often disparate scientific disciplines to solve a given biological problem. For instance, behavioral scientists, molecular biologists, and mathematicians might combine their research tools, approaches, and technologies to more powerfully solve the puzzles of complex health problems such as pain and obesity. By engaging seemingly unrelated disciplines, traditional gaps in terminology, approach, and methodology might be gradually eliminated. With roadblocks to potential collaboration removed, a true meeting of minds can take place: one that broadens the scope of investigation into biomedical problems, yields fresh and possibly unexpected insights, and may even give birth to new hybrid disciplines that are more analytically sophisticated (emphasis added) (Aboelela, Bakken, Carrasquillo, Formicola, Glied, Haas, & Gebbie, 2007).

While clinical research has promoted the use of the term, interdisciplinary is more broadly used to incorporate research problems through the sciences and also in the humanities, arts, and social sciences. Moreover, research problems that situate themselves toward interdisciplinary research can be oriented from any discipline, such as sociology, economics, fine arts, education or psychology.

Interdisciplinarity allows a researcher to use various disciplines, critically evaluate conflicting insights, integrate and produce a more “comprehensive and nuanced understanding of a problem” (Repko, Newell & Szostak, 2012, p. xvi). Confusion related to interdisciplinary research may be caused from a (a) general uncertainty about the meaning of the term; (b) widespread unfamiliarity with interdisciplinary scholarship; and (c) lack of a unified body of discourse (Klein, 1990).

By promoting interdisciplinary research, an institution may see an:
  1. Increase in scholarship
2. Enhanced profile as a site for IDR
3. Increase in the number of externally funded submissions
4. Increase in the number of successfully funded external research projects and
5. Increase in the return rate on seed funding.

Finally, an institution that facilitates and nurtures interdisciplinary research may see an increase in strategic conversations between faculty, departments, colleges, centers and institutions.

To that end, in order for UTSA to reach its potential in becoming a Tier I research institution that employs interdisciplinary approaches to research, teaching and learning, UTSA must
1. Promote a culture of interdisciplinary research
2. Sharpen its research methodologies and broaden the theories that drive its work
3. Improve overall communication across units, departments, colleges and centers and institutes
4. Implement structures that would support interdisciplinary research
5. Diversify sources of sponsored funding and
6. Expand the institution’s reputation for innovation.

EXISTING STRUCTURES THAT ENCOURAGE AND SUPPORT INTERDISCIPLINARY RESEARCH
There are several existing processes within the Office of the VP for Research that can support interdisciplinary research, including,
- Multidisciplinary Proposal Development (http://research.utsa.edu/mpd/)
- Limited Submission Process
- SALSI
- Links to searchable (external) funding sources (databases) (government and local)
- Faculty Research Interests Database

CHALLENGES THAT MAY PROHIBIT INTERDISCIPLINARY RESEARCH
The committee identified several challenges that may prohibit UTSA from fully and systematically implementing interdisciplinary research, including but not limited to,

Cultural
- Faculty may not understand IDR or see the value/benefits of collaborating and
- Chairs may not understand IDR or see the value/benefits of collaborating.

Structural
- There does not seem to be any current way to organize IDR teams
- There exists a lack of communication across faculty, departments, colleges, centers and institutions
- There exists a lack of clarity in the role of the RSC in the process
- There exists a lack of understanding and valuing of various centers and institutes (service versus research) and
- There is uncertainty/ lack of uniformity re: centers and institutes (e.g. system of governance).

Procedural
- There are limitations to the assignment capabilities of F&A portions across colleges/centers (within CAYUSE, for example).

August 2013
RECOMMENDATIONS OF THE COMMITTEE
The committee makes the following recommendations related to increasing the viability of IDR at UTSA, including

Structural considerations:
1. Identify mechanisms to disseminate the resources we have (e.g. Community of Science)
2. Examine the system of governance of centers and institutes
3. Provide resources for large interdisciplinary proposals (i.e., technical writers)
4. Provide professional development for faculty (in collaboration with Office of Research Support via the newly formed Faculty Center)
5. Provide professional development for chairs and deans (in collaboration with Office of Research Support via the newly formed Faculty Center)
6. Collaborate with deans and department chairs to overcome impediments to interdisciplinary research
7. Empower faculty to identify funding opportunities, coordinate large interdisciplinary grant efforts, facilitate partnerships and collaborations among UTSA researchers (forming of new interdisciplinary research groups) and provide feedback on proposal drafts
8. Compile and present the UTSA portfolio to funding agencies and foundations
9. Evaluate and update seed grant funding programs to promote the formation of interdisciplinary research teams, to include “pursuit funding,” for example, and
10. Establish a formal approval channel so that joint (0%) appointment for faculty across departments and colleges is obtainable and is encouraged for the purpose of interdisciplinary research.

Procedural considerations (process-oriented):
1. Streamline the process for faculty affiliations with centers/institutes
2. Formulate a strategy for the sustainability of centers, including an evaluation of the sustainability of current centers and examine models of sustainable centers at aspirant institutions
3. Formulate a strategy for IT support of research efforts
4. Create equitable processes (e.g. F&A) that would encourage IDR
5. Systematize options for faculty workload that would support IDR
6. Draw upon the lessons learned (and success stories) of the Institute for Economic Development
7. Provide feedback to seed proposals
8. Identify faculty who employ IDR methods that would mentor others
9. Systematically link to other initiatives (e.g. Office of Undergraduate Studies) and
10. Modify current faculty evaluation by adding appropriate credit measure in his/her home department so that time and effort of faculty who co-supervise graduate students at a different department is recognized.

Reputational (faculty and institution) considerations:
1. Identify foci area that would propel UTSA into an internationally recognized institution in those areas of (interdisciplinary) research
2. Create a portfolio that propels identified foci area
3. Actively present the UTSA portfolio to funding agencies and foundations, and
4. Create a clearinghouse that would document IDR at UTSA.

August 2013