

Panel on Interdisciplinary Research

Nancy Wiegand (wiegand@cs.wisc.edu)

Abstract. The objective of this panel is to introduce interdisciplinary research in general and present its potential for stimulating new research ideas while helping solve complex problems. Compared to research within an individual field, interdisciplinary research (IDR) has been distinguished as being more problem-oriented. For example, IDR research may help solve global environmental problems. This panel includes examples of interdisciplinary research, its value, challenges and problems, and potential funding opportunities. The particular focus is on interdisciplinary research involving Computer Science/IT. The intent is to inform and motivate researchers to become involved with interdisciplinary research, while realistically evaluating its difficulties. Such difficulties may include barriers to conducting interdisciplinary work and being recognized or promoted for interdisciplinary efforts. Nevertheless, funding agencies, such as the National Science Foundation, have been encouraging interdisciplinary work.

Keywords: “Interdisciplinary Research”

Panel Description

Interdisciplinary research is gaining importance and recognition. In fact, “The Grace Hopper Program Committee is especially encouraging technical submissions (...) that cross disciplines and other boundaries”. This panel draws on ideas from a recent *Convocation on Facilitating Interdisciplinary Research* held at The National Academies, Washington, D.C., Jan. 29-30, 2004.

- The objectives of this panel are to inform and motivate people to become involved with interdisciplinary research (IDR), while realistically evaluating its difficulties. Presentation topics would include examples of interdisciplinary research, the value of IDR, the challenges/problems of IDR, and potential funding opportunities. The particular focus is on IDR involving Computer Science research.
- The panel is open to anyone interested in interdisciplinary work.
- The format is to have a few key people provide insights and experiences with IDR, probably using PowerPoint presentations, and then allow time for discussion and questions from the audience.
- As to topics, a panel member would start by defining IDR, giving examples, and discussing its worth. Someone from a funding agency would then describe funding opportunities targeted or available to CS researchers. Other panel members would describe their experiences doing IDR. Problems of IDR would also be addressed along with potential solutions. For example, pre-tenure academics may choose to postpone IDR until receiving tenure.

Basic Outline: Definition, Examples, Potential funding, Problems, Solutions
(Some of this would be repeated by successive panel members.)

- The panel would likely be an hour (15 min. or so for each of 3 speakers, leaving about 15 min. for audience comments).
- No written materials.
- It is assumed the panel will have similar points of view on the value of IDR. However, problems with IDR will definitely be an integral part of the presentations.
- Attendees will learn about the potential for IDR, including funding opportunities. It is hoped that attendees will be encouraged to pursue IDR.
- Potential/Confirmed speakers are:
 1. Suzi Iacono from the National Science Foundation

In general, this person would give an overview regarding motivation and needs for interdisciplinary research. She will also give examples of IDR and present agency funding opportunities. The person may or may not also discuss barriers and recommendations to researchers.

Suzi Iacono is managing the ITR program, which is particularly emphasizing interdisciplinary research. She is also the manager of the Digital Society and Technology Program, a highly interdisciplinary program. She has experience in fostering and managing interdisciplinary research, including international collaborations.

2. Victoria Interrante, Associate Professor in the Department of Computer Science and Engineering at the University of Minnesota.

She has agreed to be on the panel; she also gave a presentation at the Convocation. She will talk about her experiences, including rewards and barriers.

3. I'm trying to find a third person. I've contacted Jennifer Chayes from Microsoft Research because she moderated a panel at the Convocation and perhaps would be willing to speak here.

Note, because the Grace Hopper's call for submissions encourages cross disciplinary work, perhaps an author of such a paper would be appropriate for the panel and could be the third person. If there are many such people, the panel could possibly be larger. In any case, I will continue to find a third person as well as an NSF representative.

4. I can moderate the panel and provide some insights.

General suggestions to panel members would be:

Give a definition of IDR. Provide examples of your or others' interdisciplinary work. Discuss problems you have encountered. What were your rewards? Do you have suggestions for the audience in pursuing interdisciplinary work?

Note about the panel proposer

Nancy Wiegand has an interdisciplinary Ph.D. degree combining Database Systems (Computer Science) and Environmental Studies. The latter includes Geographic Information Science, Civil Engineering, and the Natural Sciences. She has been doing interdisciplinary research, partially enabled by NSF funding, at the University of Wisconsin-Madison. Her current grant, from NSF's Digital Government Program, is interdisciplinary between Database systems, information integration, the Semantic Web, and government-related geospatial data and functions. She recently attended the *Convocation on Facilitating Interdisciplinary Research* at The National Academies, Jan. 29-30, 2004. Inspiration and identification of panel members is partially from that Convocation.