

3rd Annual Conference on Interdisciplinarity
University of Wisconsin—Madison
February 28th and 29th, 2008

Conference Summary

The Third Conference on Interdisciplinarity at the University of Wisconsin—Madison was held on February 28th and 29th at the Fluno Center's Howard Auditorium in downtown Madison. This year's conference focused on the future of interdisciplinarity, highlighting a variety of ways UW—Madison will lead the way. Five panels and an internationally renowned keynote speaker outlined visions of an interdisciplinary future and its challenges over the two days of the conference.

286 faculty, staff and students attended the conference over the course of the two days. Of those, 166 were academic staff, 58 were faculty, 15 were classified staff, and 9 were students. The robust participation required the use of an overflow room which the conference presentations were simulcast on a large video screen. Before and after the conference and in-between presentations, the foyer and hallways of the Fluno Center were filled with participants exchanging responses to presenter provocations and sharing perspectives on interdisciplinarity in particular contexts around campus. Lunch and dinner were served in the Fluno Center dining room, the latter of which was sponsored by the Morgridge Institute for Research.

Panel 1: Envisioning the Interdisciplinary Campus of the Future

This panel consisted of campus leaders and visionaries who have undertaken research and/or participated in a variety of initiatives at UW that attempt to transcend traditional academic and administrative boundaries.

Moderator

- Laurie Beth Clark, Vice Provost for Faculty and Staff

Panelists

- Jon Foley, Director, Center for Sustainability and the Global Environment (SAGE); Gaylord Nelson Distinguished Professor of Environmental Studies and Atmospheric & Oceanic Sciences
- Walter Dickey, Evjue-Bascom Professor of Law; Associate Dean of Academic Affairs, UW—Madison Law School; Faculty Director of the Frank J. Remington Center
- Linda Hogle, Associate Professor of Medical History & Bioethics and Anthropology; Director, Working Group on Transdisciplinary Studies of Health and Society
- Miron Livny, Professor of Computer Science

- Sharon Derry, Professor of Educational Psychology and Learning Science; Project Director, Wisconsin Center for Education Research
- Daniel Kleinman, Professor of Rural Sociology; Director, Robert and Jean Holtz Center for Science and Technology Studies
- Nancy Mathews, Professor of Environmental Studies and Wildlife Ecology; Director, UW–Madison Institutional Reaccreditation Project
- Anne Miner, Executive Director, Initiative for Studies in Technology Entrepreneurship (INSITE); Professor and Ford Motor Company Distinguished Chair of Management and Human Resources

This panel addressed the questions: What are the factors that will produce the ideal environment for research and collaboration across the disciplines? What should the interdisciplinary campus of the future be like? How should this campus adapt to the rapid change associated with new tools and methods for discovery and knowledge dissemination?

Presentation and Discussion Summary

Panelists suggested that there may not need to be broad agreement on the meaning of interdisciplinarity because it is highly dependant on the problems under investigation. Research methodologies, such as participatory and action research, problem-oriented research, and public engagement may foster interdisciplinarity. Interdisciplinary research often takes more time, and so perhaps the time to tenure should be adjusted accordingly. Knowledge on divisional committees and funding agencies may make recognition of interdisciplinary scholarship more challenging. There is a need for training of current academics in the evaluation of interdisciplinary work, including how to recognize and reward collaboration and public engagement as an aspect of research, and not just service. This implies that must be an intellectual commitment to interdisciplinarity in addition to administrative. There is still considerable disconnect between social scientists/humanists and natural scientists; we have failed to communicate with one another about the nature and methods of their research. It was noted that researchers should not abandon basic knowledge, for one must grow tomatoes as well as assemble pizzas. Finally, there was concern that effort-based reporting may be a disincentive to collaboration.

Panel 2: Administering the Interdisciplinary Campus of the Future

This panel consisted of campus leaders who presented perspectives on the future of interdisciplinarity from different functions of the university including fundraising, buildings and grounds, information management, teaching, research, and faculty recruitment and retention.

Moderator

- Laurie Beth Clark, Vice Provost for Faculty and Staff

Panelists

- Carl E. Gulbrandsen, Managing Director, Wisconsin Alumni Research Foundation (WARF)
- Ronald Kraemer, Chief Information Officer (CIO) and Vice Provost for Information Technology
- Aaron Brower, Professor of Social Work; Vice Provost for Teaching and Learning
- Linda K. Graham, Professor of Botany
- Judith Kornblatt, Professor of Slavic Languages and Literature; Associate Dean for Graduate Education
- Walter Keough, Vice President, University of Wisconsin Foundation
- Alan Fish, Associate Vice Chancellor for Facilities Planning and Management

This panel addressed the questions, What are the implications of interdisciplinarity on university fundraising and development? How should campus infrastructure, such as buildings, grounds, computer networks, and technology change to facilitate the growing interdisciplinary structure of academic life? What aspects of the tenure and promotion process and faculty recruitment and retention both support and hamper interdisciplinarity? How should the structure of teaching and research change?

Presentation and Discussion Summary

The complexity of contemporary scientific problems requires breaking out of silos and fostering more inter-institutional collaborations. Yet current technology support is not structured to sufficiently facilitate inter-institutional collaborations in large part because the current pace of change is difficult to manage in a 24-7 world. Nonetheless, technology must be a bridge to overcome barriers to interdisciplinarity, not a barrier itself. Additionally, the classroom of the future must blend in-class and out-of-class environments, teaching and research, and service learning. This however may complicate what ultimately counts as credit when learning happens everywhere. One way to manage this is to focus on outcomes rather than pedagogy. Yet this change in the role of the educator would require the provision of a efficient system of faculty and staff mentoring, for which there is currently a lack. Flexibility must be a key factor in the design of campus space and grounds to support such a vision, including alternative spaces for collaboration and inspiration; yet it is difficult to push back against the individual need for cloistered space. It is nonetheless incumbent upon faculty and staff to help campus fundraisers and development managers convince potential donors of the value of interdisciplinarity, since donors drive who benefits from gifts.

Panel 3: Interdisciplinary Teaching and Learning

This panel consisted of faculty and staff whose expertise affords them a unique perspective on the ways in which teaching and learning must change in order to meet increasing demands for interdisciplinary education and training.

Moderator

- Aaron Brower, Vice Provost for Teaching and Learning

Discussant

- John Wiley, Chancellor, University of Wisconsin–Madison

Panelists

- Jolanda Vanderwal Taylor, Associate Professor of Dutch and German
- Basil Tikoff, Associate Professor of Structural Geology and Tectonics
- Leslie Kohlberg, Associate Director, Human Ecology Career Services
- Paul Evans, Director, University Housing

This panel addressed the questions: If you could design the ultimate interdisciplinary undergraduate curriculum from scratch, what would it be like? Should undergraduate majors be done away with? What new conceptions of teaching, learning, and advising are needed in our campus of the future? Is there more than ever a need for the well-rounded, liberally-educated, interdisciplinary, student in a global world—or is the rapid pace of change and complexity in science and technology pushing students to obtain increasingly specialized skills earlier in their college career?

Presentation and Discussion Summary

A 21st century notion of “liberal arts education” is needed to support increasing interdisciplinarity in academia and the workplace. One way to do this is to integrate co-curricular activities with curricular. We must also be more intentional about the “whys” of what students are doing in college. Housing spaces should also support teaching and learning; they should be designed to create interdisciplinarity “learning communities” and simulate the experience of citizenship. As an example, the goals of introductory science should be recast. Introductory science courses are too focused on science majors, and must rather be more oriented toward science literacy for citizenship and stewardship. Introductory courses should be more problem-based and focused on the “predictive power of science.” Furthermore, there is a disconnect between student perceptions of undergraduate education and employer needs. It has been shown that undergraduate majors do not have a lasting impact. Rather many of the skills students learn in the course of a liberal arts education are valued by employers. We should simultaneously be aware that departments are mostly structured around areas that are not traditional “disciplines.” In effect, we must not only think about cross-departmental interdisciplinarity, but think about how we recognize and reward the interdisciplinary aspects *within* individual departments as well.

Panel 4: Campus and Community Partnerships

This panel consisted of faculty, staff, and community members who have engaged in unique campus and community partnerships and who could speak to the benefits and challenges of public engagement.

Moderator

- Peyton Smith, Assistant Vice Chancellor for Extended Programs

Panelists

- Charles Hoslet, Senior Special Assistant to the Chancellor and Managing Director, Office of Corporate Relations
- Barbara Wolfe, Professor of Public Affairs, Economics and Population Health Sciences; Director of the La Follette School of Public Affairs
- Craig Werner, Professor of Afro-American Studies
- Hardin Coleman, Professor of Counseling Psychology; Associate Dean, College of Education
- Steve Petersen, Forest Superintendent, Wisconsin Department of Natural Resources
- Sue Thering, Assistant Professor of Landscape Architecture; Project Coordinator, Green Affordable Housing in Indian Country Initiative

This panel addressed the questions: In what way is public/private engagement an interdisciplinary act? What are some of the challenges of finding shared language and common goals in initiatives between the campus and public and private partners?

Presentation and Discussion Summary

Off campus commitments are as important as on-campus commitments. There is, however, work to be done to get beyond stereotypes of academics and non-academics. In public/private collaborations, language must be kept simple and direct; nuance and more disciplinary language emerges over time. Stories work better than ideas. We must also find ways to value and integrate “local” forms of knowledge with disciplinary and bureaucratic knowledge. Research and projects that engage meaningfully with the public demonstrate the power of interdisciplinarity to provoke new ideas about locality and the value of natural resources. Interdisciplinary research is also increasingly sought after by corporations, e.g., environmentally friendly packaging. At the same time, corporations are increasingly outsourcing R&D to universities. At times, this complicates, rather than improves corporate relations because industry and academia are seen as separate “disciplines,” with different uses of knowledge, different monetary values, and a different senses of time. It must be noted that public-to-public relationships also form interdisciplinarity collaborations such as university/K-12 relationships. These are very particular partnerships because they are characterized both by under-funding and sluggish bureaucracies on both sides. The professional education and training mandate of the Education, Law and Nursing schools, for example, forces intimate and ongoing relationships between public institutions despite the lack of resources. While collaboration has the potential to transform these institutions, the translation of ideas and control of resources is a challenge.

Panel 5: Interdisciplinary Mega-Centers

This panel consisted of two faculty administrators in leadership positions at two of UW's most ambitious research facility projects, the Wisconsin Institutes for Discovery and the College of Medicine and Public Health's Interdisciplinary Research Complex.

Panelists

- Donna Paulnock, Professor of Medical Microbiology and Immunology; Associate Dean for Biological Sciences, Graduate School
- Paul DeLuca, Professor of Medical Physics; Associate Dean for Research and Graduate Studies, College of Medicine & Public Health

This panel addressed the questions: Do large, expensive research centers represent the future of interdisciplinarity? What is the reason for their recent increase in numbers on university campuses world wide? Interdisciplinary "mega-centers" pose a unique set of challenges in the areas of governance, funding, staffing, and architecture. What are the implications for future interdisciplinary research as the private sector becomes more involved? How will researchers in these large buildings interact with the broader campus community and what are the social benefits for the public at-large?

Presentation and Discussion Summary

The Wisconsin Institutes for Discovery are twin institutes, one public and one private, to be constructed in the heart of the UW-Madison campus as a hub for interdisciplinary research. Composed of the public Wisconsin Institute for Discovery (WID) and the private Morgridge Institute for Research (MIR), the state-of-the-art facility is intended not only to bring together scientists from a broad spectrum of disciplines, but also to involve faculty and staff in the arts and humanities, education and outreach, as well as scholars of the interdisciplinary research process itself. The center will be housed in a unique physical environment designed to maximize collaboration and the use of communal and core resources.

Discussion centered around questions about how public and private funds drove the creation of WID/MIR, and how the project will move forward with only a vague vision of how interdisciplinarity will ultimately manifest itself across the public and private sides. Participants wondered how research teams will be organized to focus on the cross-sections of bio, nano, and information technologies, as well as how this organization will allow for the meaningful integration of the social sciences and humanities.

The Interdisciplinary Research Complex is the culmination of the HealthStar initiative, created to improve health science facilities at UW-Madison. Located adjacent to UW Hospital and Clinics, it is a three-tower complex to be completed in separate phases, and the first phase is a five-story tower atop a three-story base. The first phase is expected to be completed in Spring 2008. Scientists in the IRC will concentrate on areas the School of Medicine and Public Health has identified as strategically important, including cancer, neurosciences and cardiovascular diseases. The IRC will house major programs in molecular medicine, image science and regenerative medicine.

Discussion centered around how input and planning for the complex was organized and who was represented, noting that the project is the result of a 25 year process of thought about the relationship between the medical school, hospital, and broader research and clinical community. Discussion also centered around the use of space and if and how social scientists will be included. It was noted that the facility will maintain the School of Medicine and Public Health's long time relationship with researchers from multiple divisions, especially historians, ethicists, and sociologists. By integrating space for both lab and non-lab based researchers and clinicians, there will be close proximity between discovery, diagnosis and treatment. Proximity is also maximized to other schools such as nursing, pharmacology, and engineering, as well as to local bio-industry. Finally, there was discussion about degree to which space is flexible given the rapid changes in science and technology. It was also noted that the complex includes short-term, pre-incubator research space.

Keynote speaker presentation summary

Diana Rhoten is Director of Knowledge Institutions and Innovation at the Social Sciences Research Council and program director in the areas of Virtual Organizations and Learning & Workforce Development for the Office of Cyberinfrastructure at the National Science Foundation. Rhoten's research focuses on the social and technical conditions as well as the individual and organizational implications of different approaches to knowledge production and dissemination. Much of her recent work in this area concerns the study of interdisciplinary and collaborative practices in science. She is particularly interested in the implications that geographically distributed and scientifically diverse networks pose for traditional research questions and institutions—particularly in light of the many emerging technological capacities before us. She will present the results of an extensive study on the effectiveness of a number of institutional strategies aimed at fostering interdisciplinary collaboration.

Rhoten reported results of a new NSF-sponsored micro-study testing for effects of the Integrative Graduate Education and Research Traineeship (IGERT) on student performance. The study used an innovative methodology: 48 IGERT and non-IGERT students at early and late stages of their graduate programs were invited to participate in an environmental research design 'charrette' weekend. Students were grouped into interdisciplinary groups of six: two groups each of junior IGERT students, senior IGERT students, junior non-IGERT students, and senior non-IGERT students. Each group was tasked with working together to produce and present a seven page research proposal on ecosystem services. Students were allowed to do Internet research but could not make outside contacts. Rhoten found that junior IGERT students outperformed the others in every way, followed by the non-IGERT students. Rhoten suggested that as students' GRE scores had been considered, this disparity could not have been an artifact of previous ability. She summarized the observations thus: the best junior IGERT team had an optimistic leader with gentle critics, and had framed the task as research. By contrast, the senior IGERT students (whose proposal and presentation received the lowest scores) framed the task as collaboration. The senior IGERT students assumed they would perform well, and appeared to enjoy being studied. They discussed how to cope with

conflict, yet couldn't get traction, and their results were vague and incomplete. She does not, however, conclude that IGERTs are a misinvestment, but rather that these results beg questions: Did overconfidence and familiarity effect the senior IGERT students? Had IGERT training replaced students' assertiveness and results-orientation with a focus on inclusivity and the cooperative process? These questions, she suggested, may guide us to an improved IGERT program structure.

Conference Evaluation Survey Summary

Conference participants took a wide variety of key ideas away from the conference particularly the notion that while interdisciplinarity is robust at UW and represents the future, there are still many institutional and intellectual barriers. Survey respondents listed a number specific actions they may take as a result of attending the conference including increasing attempts to forge deeper and more meaningful research collaborations, increasing efforts to work more closely with the university leadership to change tenure and promotion processes, and increasing efforts at public engagement. Survey respondents were also nearly unanimous in stating that the conference helped them make new connections with like-minded faculty and staff that will benefit their teaching, research, and service in the future. In order to continue promoting interdisciplinarity at UW, respondents recommended that the university modify its rewards system, focus on the roles of academic staff and students as well as faculty, and promote the ways the arts and humanities play an important role in fostering interdisciplinarity. Some cautioned not to fetishize interdisciplinarity, and hold in equal regard the interdisciplinarity of an individual researcher as well as a collaborative group. Many recommended that the conference should continue to be an annual event, but that there should be more representation of academic staff and the public among presenters. Many added that the conference should shift from presentations and discussion to a format where specific action is planned and implemented. Finally, many respondents complimented the Fluno Center facilities and food.