Interdisciplinary Research Collaborations

Dr. Marjorie S. Zatz

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Why engage in interdisciplinary collaborations?

- Most complex problems require knowledge beyond what one discipline can offer
- Intellectual synergies – learning from one another, reshaping what we know and how we know it
- Research communities introduce new methodologies and theoretic frameworks
- Collaboration facilitates innovation and invention
Examples of successful interweavings outside of academic circles

- Cities – the most vibrant urban centers are characterized by mixtures of the arts, design, commerce, infrastructure, etc.
- Global business – multiple cultures, languages, styles figuring out how to work together
- Integrated health care – scientists, physicians and nurses with different areas of expertise, social workers, etc. coming together to provide comprehensive patient care
Typical types of collaborations

- **Within same discipline**
  - Same or differing theoretic and methodological approaches

- **Multidisciplinary**
  - Two or more disciplines working side by side

- **Interdisciplinary**
  - Two or more disciplines working together, merging knowledge and creating something new but without fully giving up existing disciplines

- **Transdisciplinary**
  - Fusion, above and beyond existing disciplines
  - Typically problem-based and call for collaboration beyond academic walls to address complex social problems
  - Integration of multiple methodologies and epistemologies, and those methodologies are contextually based
Partners in academic collaborations

- Other academic researchers
- Industry/technology researchers
- Community partners
- Governmental/nongovernmental agencies
- K-12 schools
- Etc.
2011 Rebuilding the Mosaic Report from the Social, Behavioral and Economic Sciences

- Results from analysis of 252 white papers outlining the big questions confronting SBE sciences and fruitful approaches to addressing those problems
- Vision of research is interdisciplinary, data-intensive, and collaborative

Interdisciplinary funding

- Interdisciplinary programs
  - (eg, Law and Social Sciences, Science of Science Innovation & Policy)
- Interdisciplinary centers
  - (eg, Centers for Nanotechnology, Materials Research Centers)
  - must cross two or more NSF Directorates
Example: NSF Partnerships for Innovation

• “By establishing and expanding partnerships, research from institutions of higher education can be translated into innovation. Thus, the impact of research can be increased by moving it to realistic deployment, linking new knowledge to economic growth and other societal benefits. Partnerships with participation from science, engineering, education, the private sector and government can accelerate the process of innovation—the transformation of scientific and technological advances into new products, processes, systems, and services. In turn, new jobs are produced, wealth created, and the standard of living and quality of life worldwide are improved.”

• http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504708&org=IIP&from=homexx
Examples from my own work

- NSF funded workshop and forthcoming book on social science research on immigration
  - Sociology, anthropology, political science, law, social work, criminology
- Gender violence and transdisciplinarity - special issue of Violence Against Women
  - Each article commented on transdisciplinarity, volume as a whole was transdisciplinary
Activities that promote interdisciplinary collaborations

- Workshops
- Speaker series
- Brown-bag series in which research collaborators present their work in progress
- Problem based research projects
- Multiple mentorship/supervisory models
  - These may include industry/business/professional/community mentors
Thank you!