Promoting Effective Cross-Disciplinary Collaboration at UCI

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A Continuum of Disciplinary Integration

**Unidisciplinary**
Researchers from a *single discipline* work together to address a common problem.

**Multidisciplinary**
Researchers from *different disciplines* work sequentially, each from their own discipline-specific perspective, with a goal of eventually combining results to address a common problem.

**Interdisciplinary**
Researchers from *different disciplines* work jointly to address a common problem. Some integration of perspectives occurs, but contributions remain anchored in their own disciplines.

**Transdisciplinary**
Researchers from *different disciplines* work jointly to develop & use a shared conceptual framework that synthesizes & extends discipline-specific theories, concepts, & methods to create *new approaches* to address a common problem.

Adapted from: Rosenfeld, 1992; Hall et al., 2008, 2018; Falk-Krezsinski, 2012; Austin et al., 2008; Nissani, 1995
The Science of Team Science

...an interdisciplinary field concerned with understanding and managing circumstances that facilitate or hinder the effectiveness of collaborative (and often cross-disciplinary) research, training, and translational initiatives.
Maximize cross-disciplinary integration and innovation while minimizing the costs incurred through scientific and translational collaboration.
Advancing Cross-Disciplinary Team Science at UCI

UCI Team Science Acceleration Lab

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(See also: https://i2insights.org/2019/02/19/team-science-ecosystem/)
Key Facets of the Team Science Ecosystem

- Funding agency and foundational support for team science initiatives
- Institutional incentives for cross-disciplinary partnerships
- Team-level supports
- Cultivating individual core competencies
Funding Agencies and Private Foundations

- Federal agencies and private foundations have shifted portions of their research portfolios from single-investigator grants to cross-disciplinary team initiatives.

- Applicant teams now required to submit collaboration plans for center grant proposals, and periodic reports of progress toward collaborative goals.
Institutional Leverage Points for Promoting Convergence

- Campus mission statements
- Tenure and promotion criteria
- Credit and resource sharing
- Seed grants and collaborative support
- Shared space and facilities
- Education and mentorship
Recognizing Individual Contributions to Team Science in Promotion and Tenure Reviews

Interdisciplinary and collaborative work: Framing promotion and tenure practices and policies

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ABSTRACT

Interdisciplinarity and collaboration are keywords for change in the 21st century. Both challenges across the entire academic system, from administrative policies and budget frameworks to disciplinary cultures of research and education. This Research Note is the first synthesis of literature and models for practices and policies that recognize interdisciplinary and collaborative work in the promotion and tenure (P&T) process, brought together in a table of recommendations that require consistency, alignment, and comprehensiveness at all stages, from defining expectations in the initial appointment to preparing individual dossiers to incorporating appropriate criteria. Several organizations have led the way in recommendations for recognizing interdisciplinary and collaborative work. Professional academic administrators at local levels are also providing leadership. Institution-wide policies, though do exist. More often individual units are issuing guidelines for appropriate evaluation of studies have also called for widening definition of what counts for consideration, including applied, and commercial research and development. The overriding lesson to emerge is the need for a systematic and informed approach.

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Credit and Resource Sharing

- We have worked with VCR on credit sharing strategies (e.g., on inter-school grants)
- A policy on how to distribute indirect costs is important but is complicated
Strengthening Team-Level Capacities for Transdisciplinary Collaboration

- Establish collaboration plans that specify team goals, milestones and metrics for gauging success

- Identify and implement strategies for remedying weaknesses and bolstering success

- Measure and strengthen transdisciplinary orientation and integrative capacity
