Team Science at UC Irvine

Research and Application in Team Science – Meeting 3

National Academy of Science, Engineering and Medicine

May 29, 2024

Pramod P. Khargonekar
Maritza Salazar Campo
Dan Stokols
Holly M. Hapke
Gary Olson
Judy Olson

UCI University of California, Irvine

Launch of Team Scholarship Acceleration Lab at UC Irvine in 2017

Who is the Team Scholarship Acceleration Lab (TSAL)?

There have been several researchers at the University of California, Irvine (UCI), who have made the study of team scholarship their primary area of research. The UCI Vice Chancellor for Research, Pramod Khargonekar, invited this group to work with him on some problems pertaining to team scholarship. After a series of discussions with him, and briefings of key administrators, we formed the Team Scholarship Acceleration Lab (TSAL).

The principal faculty members are:

Maritza Salazar Campo

Assistant Professor, Merage School of Business

Judtih Olson

Professor Emeritus, Department of Informatics

Gary Olson

Professor Emeritus, Department of Informatics

Dan Stokols

Professor Emeritus, School of Social Ecology

Pramod Khargonekar
Appointed as Vice Chancellor for Research at UC Irvine in 2016

ENHANCING THE EFFECTIVENESS OF

TEAM SCIENCE

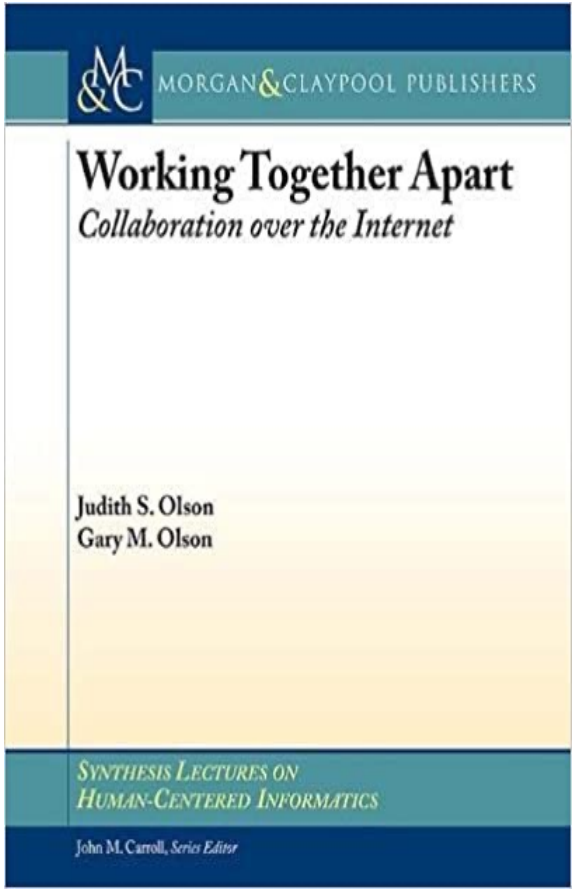
NATIONAL RESEARCH COUNCIL
OF THE NATIONAL ACADEMIES

COMMITTEE ON THE SCIENCE OF TEAM SCIENCE

NANCY J. COOKE (*Chair*), Human Systems Engineering, The Polytechnic School, Arizona State University
ROGER D. BLANDFORD (NAS), Department of Physics, Stanford University
JONATHON N. CUMMINGS, Fuqua School of Business, Duke University
STEPHEN M. FIORE, Department of Philosophy, University of Central Florida
KARA L. HALL, Behavioral Research Program, National Cancer Institute
JAMES S. JACKSON (IOM), Institute for Social Research and Department of Psychology, University of Michigan, Ann Arbor
JOHN L. KING, School of Information, University of Michigan, Ann Arbor
STEVEN W. J. KOZLOWSKI, Department of Psychology, Michigan State University
JUDITH S. OLSON, Department of Informatics, University of California, Irvine
JEREMY A. SABLOFF (NAS), Santa Fe Institute
DANIEL S. STOKOLS, School of Social Ecology, University of California, Irvine
BRIAN UZZI, Kellogg School of Management, Northwestern University
HANNAH VALANTINE, Office of the Director, National Institutes of Health

Judy Olson, Information and Computer Science

Dan Stokols
Social Ecology



Gary Olson, Information and Computer Science

Judy Olson, Information and Computer Science

Organizational Scientist on a Journey: Maritza Salazar Campo

Business School

INSciTS Building the knowledge base for effective team science
International Network for the Science of Team Science

[Team Science Consultation Registration]

TEAM SCHOLARSHIP ACCELERATION LAB

Click image for more information

"How do we turn a Team of Experts into an Expert Team?"

Using Team Science in Research Development: Holly Hapke

School of Social Sciences

NORDP
National Organization of Research Development Professionals

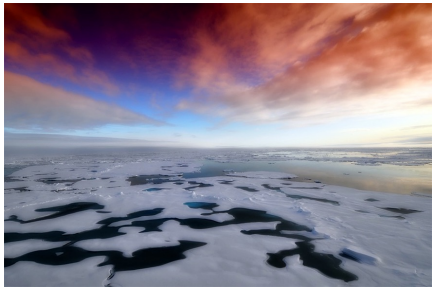
INSciTS Building the knowledge base for effective team science
International Network for the Science of Team Science

community credit

NSF Convergence Accelerator Track F: An Algorithmic Observatory to Address Financial Misinformation and Disinformation in Minoritized Communities (#2137567)

NSF CoPe EAGER: Modeling the Social Ecology of Coastal Flood Risk (#1940171)

Transdisciplinary Research on the Changing Arctic and its Global Impacts: Enhancing Capacity for Convergence Science
(NSF #1935653 Workshop: Leading Arctic Convergence Research with the Social and Behavioral Sciences)



NSF's 10 Big Ideas

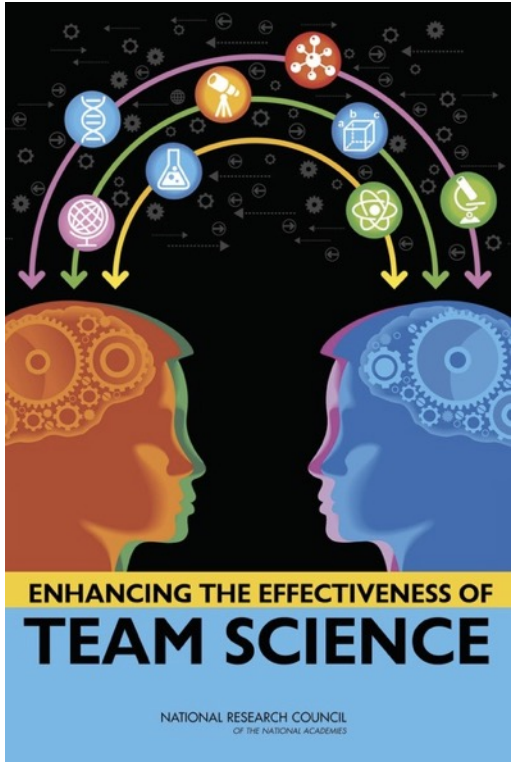
NSF Big Idea: Growing Convergence Research

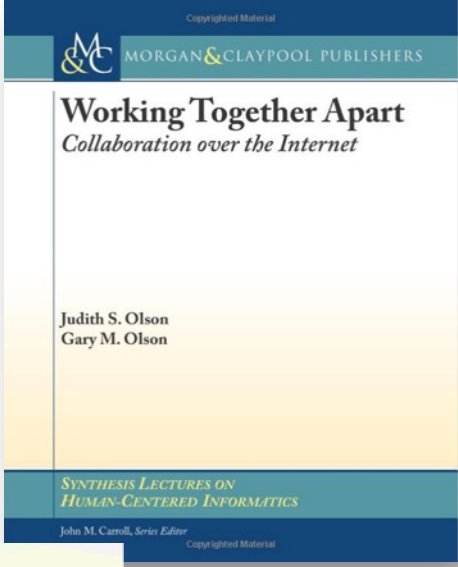
NSF identifies Convergence Research as having two primary characteristics:

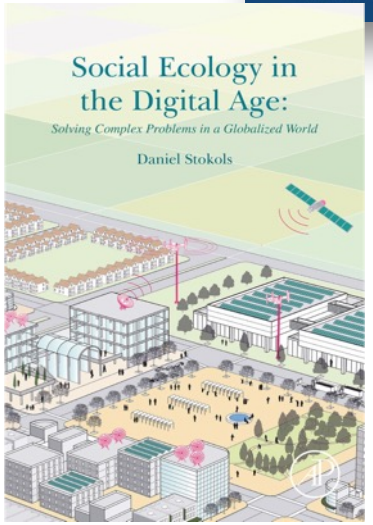
Research driven by a specific and compelling problem. Research requiring a convergence paradigm is generally inspired by the need to address a specific challenge or opportunity, whether it arises from deep scientific questions or pressing societal needs.

Deep integration across disciplines. As experts from different disciplines pursue common research challenges, their knowledge, theories, methods, data, research communities and languages become increasingly intermingled or integrated. New frameworks, paradigms or disciplines can form from sustained interactions across multiple communities.

Convergence and Team Research







Multidisciplinary Seed Funding Program and TSAL

Annual internally funded program aimed at multidisciplinary research

Restricted to multidisciplinary teams

Two stage review process

7-8 Awards per year

Key requirement: *awarded teams are expected to consult with TSAL*

Demonstrated record of success in externally funded center-scale projects

Team Science Accelerator Consultation Cycle

- Seed Grant Consultation
- Project & People Integration
- Revise Management Plan
- Use of Team Science Themes
- Project Launch Support
- Ongoing Training & Facilitation

TSAL Training and Education Modules Offered

- Building Your Team & Charting the Way: Strategic Team Mapping
- Strengthening Team Communication
- Aligning your Team: Brainstorm Facilitation
- Managing your Mentorship & Developmental Network
- Managing conflict in collaborations: Best Practices
- Establishing a Collaborative Agreement
- Inclusive Leadership in Team Science
- Scientific Leadership Development

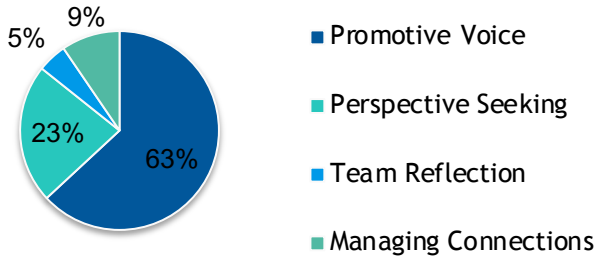
Strategic Team Mapping: A 9-step Design Process to Support Collaboration

Purposefully configure the elements of interdisciplinary teams (i.e., disciplinary expertise, infrastructural cores, translational research projects) to achieve valued outcomes:

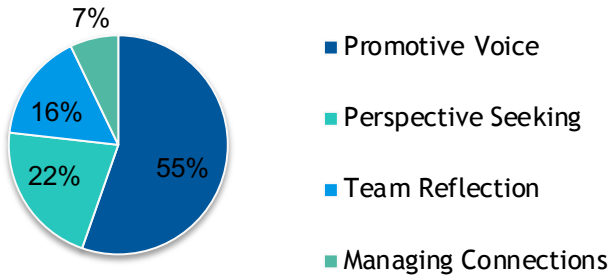
- Motivate joint effort
- Utilize talent more efficiently
- Uncover interdependencies
- Identify gaps in expertise
- Anticipate conflict zones
- Reduce coordination losses

Four Principles of Team Communication Training

Most Creative Team

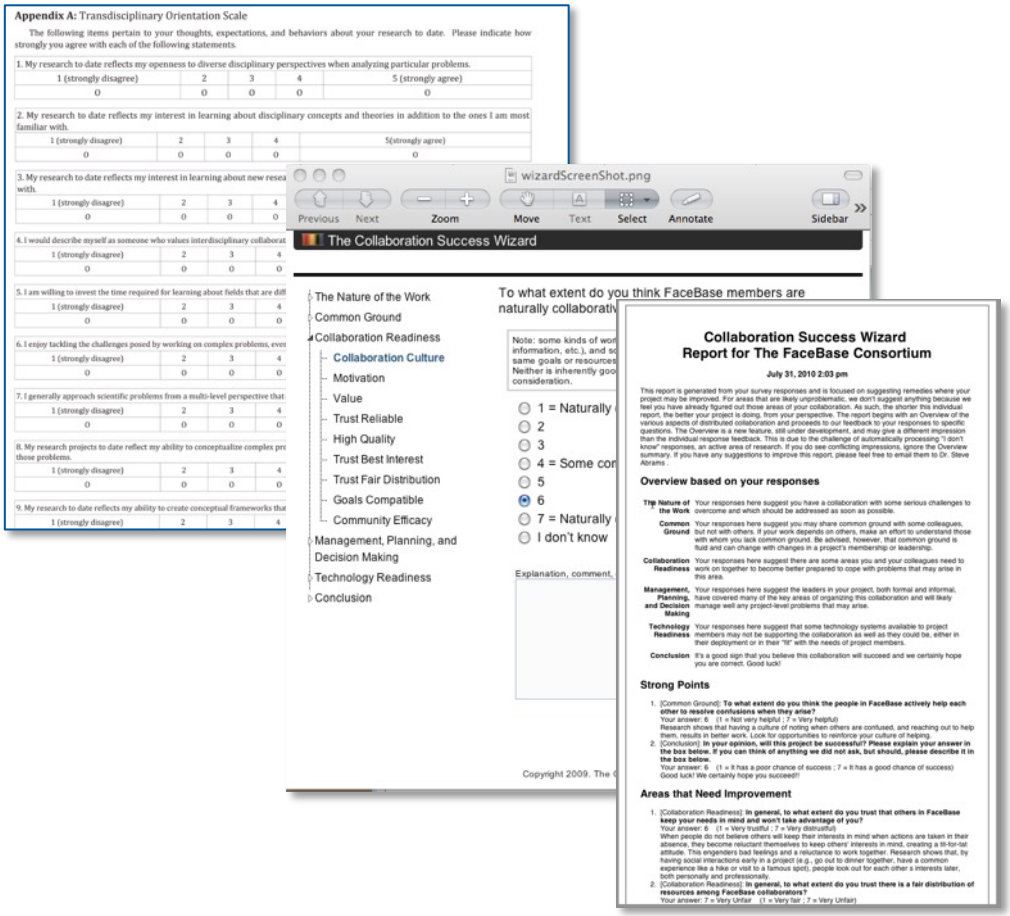


Less Creative Team



Team Developmental Assessment and Feedback

- Measure and strengthen team's integrative capacity
- Measure aspects of collaboration known to lead to success
- Developmental Network & 360degree leadership feedback
- Suggest remedies for weaknesses



Developmental Feedback: Qualitative Coaching

Coaching Questions

- Division of responsibilities – do we have the right people involved?
- Sharing resources – can we improve data sharing? Sharing RAs? Protocols?
- Meetings – are we meeting frequently enough? Are the appropriate people on the calls?
- Knowledge sharing and transfer – how are our own team norms?
- Communication technology – can we adopt a shared space? Should we use slack or social media more?

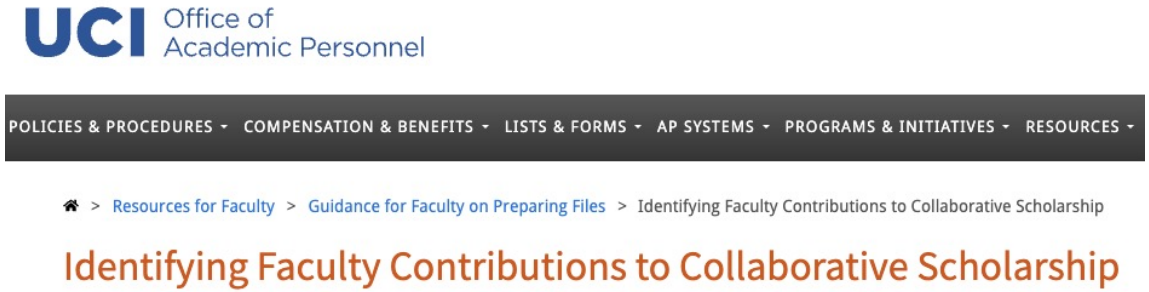
Team Science Trainee Reflection Exercise

Scientific Leadership Development using 360degree feedback

Team Science Celebration as Culture Building

- Hands-on tools for promoting effective cross-disciplinary collaboration
- Best practices for leading and sustaining interdisciplinary research and training programs
- Identifying funding sources that support interdisciplinary research
- Building successful university-community partnerships
- Leveraging an interdisciplinary degree in today's job market
- Promotion and tenure implications of participating in team-based scholarship

TSAL and UCI Promotion and Tenure Review



"Not all faculty members at UCI are engaged in team-based scholarship and this is certainly not a requirement for successful merit and promotion … because team-based cross-disciplinary research … is becoming an increasingly salient feature of contemporary research, UCI is strongly committed to creating an academic climate that facilitates and rewards faculty contributions to collaborative scholarship goal … we encourage candidates for merit and promotion reviews to identify their specific contributions to collaborative scholarship and/or translation to community practice and public policy."

https://ap.uci.edu/faculty/guidance/CollaborativeScholarship

Collaborative Contributions for P&T

Collaborative Contributions List

Type of Contributions	Examples
Conceptual Contributions	• Contribute the key idea behind the work • Have critical insight that breaks a conceptual logjam • Create theoretical ideas or frameworks • Contribute relevant literature
Methodological Contributions	• Bring expertise in a particular research approach • Develop or share relevant software for modeling or analysis • Bring statistical expertise • Create visualizations that help create understanding during analysis • Provide data curation

Resource Contributions	• Help obtain grant funding
	• Contribute funds from an existing source
	• Possess relevant specialized skills (either self or staff)
	• Build or provide access to specialized equipment or facilities
	• Provide critical materials (e.g., cell lines)
	• Provide existing data sets
	• Recruit research participants
	  ◦ Especially if special populations are required
	  ◦ Establishing relations to organizations that link to relevant populations

Project Level Contributions	• Provide overall project administration, leadership
	  ◦ Especially important for geographically distributed projects
	  ◦ Especially important for cross-disciplinary collaborations
	• Be a liaison to a key community or organization
	• Introduce or refer important people to team members
	  ◦ Support team building, getting researchers to speak the same language, trust each oth

Dissemination Contributions	• Take leadership in creating the papers ◦ Do significant work in editing papers for clarification and transparency • Create and give presentations • Translate the research to practitioners and the public • Create useful visualizations of data or the models for others to understand • Commercialize the technologies, acquire patents

TSAL worked with UCI promotion and tenure committees to develop this list.

https://ap.uci.edu/faculty/guidance/collablist/

Team Scholarship Accelerator Lab

https://tsal.uci.edu/

TSAL Toolkit

Home » Toolkit

Phase 1: Gathering the Team

Number of lessons: 17

Phase 2: Launching the Team

Number of lessons: 24

Phase 3: Getting the Work Done

Number of lessons: 8

How Can the Team Scholarship Acceleration Lab Help You?

Find Out Here

What are the challenges to effective team scholarship?

CONFLICTING GOALS

Teams for whom the goals of the individual members are not aligned can face serious problems. Such goal conflicts have been studied extensively in the social psychology literature. For instance, some may have goals closely associated with their home discipline. Researchers at different points in their careers often have different goals. Bringing goals into alignment early in a project can be a key, but periodic checks to make sure they are still aligned is also important.

UCI Team Science

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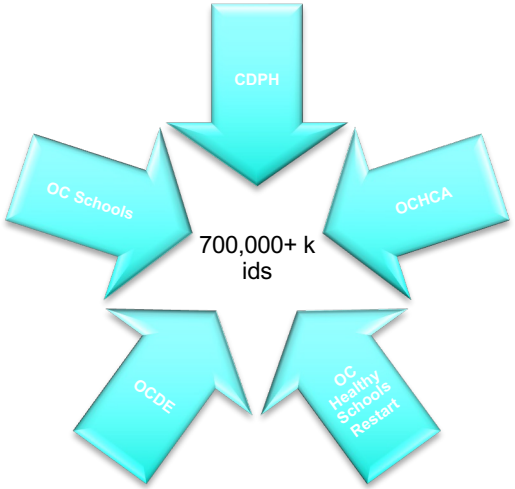

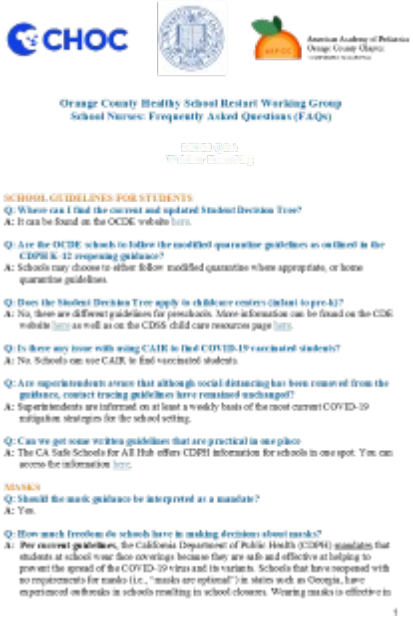

https://www.icts.uci.edu/healthyschools.php

Comments

Ideas

Questions?

pramod.Khargonekar@uci.edu
http://faculty.sites.uci.edu/khargonekar/