

Conference Program



SciTS
2015

Building the knowledge base
for effective team science



June 3-5, 2015
Natcher Conference Center
National Institutes of Health
Bethesda, MD
www.scienceofteams science.org

Science of Team Science (SciTS) 2015 Conference



National Institutes of Health
Turning Discovery Into Health

Conference Schedule At-a-Glance

Day 1: Wednesday, June 3, 2015

8:00–8:45 am	Registration Lower Level Foyer			
8:45–9:15 am	Welcome and Introduction Auditorium			
9:15–10:45 am	Featured Panel: National Academy of Sciences (NAS) Report: Enhancing the Effectiveness of Team Science Auditorium			
10:45–11:00 am	Break			
11:00 am–12:00 pm	Keynote: Conversation with Phillip Sharp Auditorium			
12:00–1:15 pm	Lunch (options described in conference program)			
1:15–3:00 pm Thematic Paper Sessions (submitted)	Engaging Community Stakeholders in Team Science Balcony A	Maximizing the Effectiveness of Interdisciplinary Team Interactions Balcony B	Training for Interdisciplinary Research and Team Science Balcony C	Using Bibliometrics to Understand the Impact of Team Science Room A
3:00–3:15 pm	Break			
3:15–4:45 pm Thematic Paper Sessions and Panels (submitted)	Panel: Decade of Review of Team Health Science Initiatives at the University of Saskatchewan – Lessons Learned from a Magnificent Start to Current Reality Balcony A	Panel: Developing and Disseminating Research-to- Practice Tools and Products – Findings from the SCTC Research Initiative Balcony B	Panel: Disciplinary Diversity in a Multi- Stakeholder Governance Structure – Facilitating Engagement and Enhancing Relevance of Policies and Resources for Patient-Centered Research Networks Balcony C	Papers: Cross- Institutional Collaboration – Strategies for Success Room A
4:45–5:30 pm	Scientific Poster Session #1 Atrium			
5:30 pm	Adjourn			

Conference Schedule At-a-Glance

Day 2: Thursday, June 4, 2015

8:15–8:45 am	Registration Lower Level Foyer			
8:45–9:00 am	Welcome Back—Introduction of Key Topics for the Day Auditorium			
9:00–10:30 am	Invited Panel: Organizational & Institutional Strategies to Support Team Science Auditorium			
10:30–10:45 am	Break			
10:45–11:15 am	Featured Talk: Using Researcher Networking Websites to Study Collaboration Within an Organization Auditorium			
11:15 am–12:15 pm	Ask the Experts Auditorium			
12:15–1:30 pm	Lunch (options described in conference program)			
1:30–3:00 pm Thematic Paper Sessions and Panels (submitted)	Panel: Team Science Coaches – Career Paths for Fostering Successful Team Science Balcony A	Papers: Knowledge Networks and Shared Mental Models Balcony B	Panel: Team Science in Learning Health Systems – Lessons from the American Recovery and Reinvestment Act Infrastructure Investments for CER Balcony C	Papers: Cross-Disciplinary Boundary Spanning Room A
3:00–3:15 pm	Break			
3:15–4:00 pm	SciTS Recognition Award Auditorium			
4:00–4:45 pm Thematic Paper Sessions (submitted)	Virtual Collaboration and Distributed Teams Balcony A	Open Science – Sharing Data and Analytic Approaches Balcony B	Leading Teams: Theory – and Data-Driven Approaches Balcony C	
4:45–5:30 pm	Scientific Poster Session #2 Atrium			
5:30 pm	Adjourn			

Day 2: Thursday, June 4

Conference Schedule At-a-Glance

Day 3: Friday, June 5, 2015

8:15–8:45 am	Registration Lower Level Foyer			
8:45–9:00 am	Welcome Back–Introduction of Key Topics for the Day Auditorium			
9:00–10:30 am	Featured Panel: Diversity in Teams Auditorium			
10:30–10:45 am	Break			
10:45 am –12:15 pm	Featured Panel: Innovations in Peer Review and Science Management Auditorium			
12:15–1:30 pm	Lunch (options described in conference program)			
1:30–3:00 pm Thematic Paper Sessions (submitted)	Novel Face-to-Face Research Networking Approaches Balcony A	Citizen Science and Crowdsourcing Balcony B	Gender and Science Teams Balcony C	Organizational Approaches and Design Strategies for Team Science Room A
3:00–3:15 pm	Break			
3:15–4:30 pm Thematic Paper Sessions and Panels (submitted)	Panel: Our Scholarly Recognition System Still Doesn't Work Balcony A	Panel: Team Science and Federal Agency Experiences with Transformative Research Balcony B	Papers: Communicating Across Disciplines – Team and Organizational Level Perspectives Balcony C	Papers: New Measures to Assess Readiness for Team Science Room A
4:30–5:00 pm	The Future of Team Science: Setting a Course for Future SciTS Research and Practice Auditorium			
5:00 pm	Adjourn			

Day 3: Friday, June 5

Conference Locations

The opening and closing sessions, along with all invited talks, will be held in the Auditorium. Concurrent sessions will be held in Balcony A, Balcony B, Balcony C, and Room A. The afternoon poster sessions will be held in the Atrium. Room D is available for networking.

Lactation Room

A lactation room for nursing mothers is available on the sixth floor of the Natcher Conference Center. To use the room, please inquire at the conference facility management office on the lower level across from the registration desk.

Sign Language Interpretation

Sign language interpretation is available upon request. Please see a conference staff member if you require this service.

Table of Contents

Conference Schedule At-a-Glance	1–3
Natcher Conference Center Information	4
Table of Contents	5
Stay Connected: Twitter and More	5
SciTS 2015 Conference Planning Committee and Support	6
Welcome Letter	7–8
Travel to NIH Main Campus and NIH Security Process	9
Food Options: Pre-ordered Boxed Lunch and Onsite Purchasing	10
Moderators	11
SciTS Recognition Award	11
Keynote Speaker	12
Places and Spaces Exhibit	12
Featured Speakers	13–19
Detailed Guide to the Conference	20–40



SciTS
2015

Building the knowledge base
for effective team science

The Science of Team Science (SciTS) field aims to develop evidence-based strategies to enhance the processes and outcomes of team-based science. Team science initiatives are designed to promote collaborative, often cross-disciplinary approaches to addressing complex scientific questions in holistic and innovative ways. The SciTS field is concerned with maximizing the quality of the science produced by teams by developing evidence-based practices to enhance efficiency, effectiveness, and creativity in science teams. Factors of interest to the SciTS field include: team composition, leadership, communication, coordination, and organizational environment, as well as broader influences including training, recognition and reward systems, funding and publishing opportunities, and the broader culture of science.

Stay Connected: Twitter and More

Stay involved during and after the SciTS 2015 Conference...



On Twitter at: **#SciTS**

On the SciTSlist listserv. Join in one click, at:
<https://www.teamsciencetoolkit.cancer.gov/Public/RegisterListserv.aspx>

On the conference website, for post-conference resources:
www.scienceofteams science.org

Conference Chair

Kara L. Hall, PhD
Director, Science of Team
Science Team
Behavioral Research Program
National Cancer Institute

Program Co-Chairs

Amanda L. Vogel, PhD, MPH
Senior Behavioral Scientist
Leidos Biomedical Research, Inc.

Brooke A. Stipelman, PhD
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NIH Conference Planning Committee

L. Michelle Bennett, PhD
Chief Science Officer
National Institute of Biomedical
Imaging and Bioengineering

Howard Gadlin, PhD
Ombudsman and Director,
Center for Cooperative Resolution
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National Cancer Institute

Hannah Valantine, MD
Chief Officer for Scientific
Workforce Diversity
National Institutes of Health

External Conference Planning Committee

Gabriele Bammer, PhD
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College of Medicine, Biology
and Environment
Australian National University

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Professor of Behavioral Sciences
Northwestern University

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Faculty Fellow for Interdisciplinary
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Bonnie J. Spring, PhD
Professor of Preventive Medicine-
Behavioral Medicine and
Director, Center for Behavior
and Health
Northwestern University

Daniel Stokols, PhD
Research Professor and Chancellor's
Professor Emeritus
University of California, Irvine

Conference Planning and Registration Support

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Alaa El-Zein
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National Cancer Institute

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National Institutes of Health

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Romina Cialdella
Senior Account Executive
Ogilvy/Feinstein Kean Healthcare

Isabel M. Estrada, PhD, MS
Communications Specialist
Office of Behavioral and Social
Sciences Research
National Institutes of Health

On behalf of the SciTS 2015 Conference Planning Committee, welcome to The National Institutes of Health and the Science of Team Science (SciTS) 2015 Conference!

The SciTS 2015 Conference theme is, “Building the Knowledge Base for Effective Team Science.” During the conference, a rich set of invited panels, oral presentations, and scientific posters will reflect this theme, highlighting the latest conceptual and empirical advances in our understanding of key topics related to advancing team-based science. To kick off the week’s events, the National Science Foundation sponsored a phenomenal preconference workshop, “Fundamentals of Team Science and the Science of Team Science: Enhancing Team-Based Research.”

We’ve organized the conference so that mornings feature sessions that give a broad overview of SciTS topics relevant to all attendees, while afternoons allow attendees to focus more deeply on topics of particular interest to them.

Highlights from the morning sessions include:

- **Wednesday:** Eight members of the National Academies Committee on the Science of Team Science will provide an overview of the recently released consensus report, *Enhancing the Effectiveness of Team Science*. The panel will highlight the state of the SciTS field as well as key challenges, practical strategies, and future directions. Then, Nobel Laureate Phillip Sharp will take the stage to share reflections on his wealth of experience conducting, leading, and supporting team-based research.
- **Thursday:** A featured panel will highlight “Organizational and Institutional Strategies to Support Team Science.” Then, Dr. Griffin Weber (Harvard) will discuss the power of research networking and profiling tools to both facilitate and study collaboration within and across organizations. Wrapping up the morning, it’s your turn to “Ask the Experts!” The NIH’s Dr. L. Michelle Bennett and Dr. Howard Gadlin will lead a panel of experts who will address important questions about how to effectively form and facilitate team-based collaborations.
- **Friday:** Effectively managing and leveraging the increasing diversity in teams is one of the most pressing challenges facing organizations and interdisciplinary science teams. The first featured panel of the day, “Diversity in Teams,” will focus on the mechanisms through which diversity can produce better, more innovative, and more robust outcomes, and leadership strategies to effectively leverage diversity in science teams. The second featured panel will turn our attention to how “Innovations in Peer Review and Science Management” can promote effective team-based research, particularly during times of scarce resources and increasing competition for NIH funding.

On Thursday afternoon, the first ever SciTS Recognition Award will be presented to Dr. Daniel Stokols of the University of California, Irvine. His talk will focus on “Educational Strategies for Cultivating a Transdisciplinary Orientation among Students and Scholars.”

Welcome Letter

This year marks the return of the SciTS conference to NIH, nearly a decade after the initial 2006 conference, “The Science of Team Science: Assessing the Value of Transdisciplinary Research.” It is an exciting opportunity to bring together the SciTS community with new stakeholders and agency representatives to share the latest work in the developing SciTS field. We anticipate that the dialogue fostered by this year’s conference—among representatives who set science policy, researchers who engage in team-based research, and scholars who study team science—will enrich the quality of the scientific enterprise.

After your exciting days with colleagues at the SciTS 2015 Conference, we hope you have the opportunity to enjoy the wonderful cuisine in Bethesda and the greater metro DC area, and have a chance to experience the city’s rich history, arts, and culture.

Enjoy the SciTS 2015 Conference!



A handwritten signature in black ink, appearing to read 'Kara L. Hall'.

Kara L. Hall, PhD
National Cancer Institute
SciTS 2015 Conference Chair



A handwritten signature in black ink, appearing to read 'Brooke A. Stipelman'.

Brooke A. Stipelman, PhD
National Cancer Institute
SciTS 2015 Conference Program Co-chair



A handwritten signature in black ink, appearing to read 'Amanda L. Vogel'.

Amanda L. Vogel, PhD MPH
Leidos Biomedical Research
SciTS 2015 Conference Program Co-chair

Travel to NIH Main Campus

Walk: The NIH Visitor Gateway Center is a 10-15 minute walk from the DoubleTree Bethesda Hotel.

Metro: The NIH campus is conveniently located at the Medical Center stop on the Red line. The NIH Visitor Gateway Center is adjacent to the Medical Center stop.

Hotel Shuttle: A complimentary hotel shuttle service to the NIH Visitor Gateway Center is available each hour from the DoubleTree Bethesda Hotel.

Drive: Visitor parking at NIH is extremely limited, so we strongly encourage participants to use alternative transportation options. Short-term metered parking and long term attendant-controlled parking are available to visitors at a cost of \$2 per hour for the first three hours, or \$12 per day.

Driving directions and additional information about entering the NIH campus, parking, and shuttles is available on the NIH Visitor Information webpage at: www.nih.gov/about/visitor.

NIH Security Process

All visitors to the NIH main campus (where the Natcher Conference Center is located) must enter through the NIH Visitor Gateway Center for security screening, regardless of mode of transportation. You will be asked to submit to a vehicle or personal inspection.

Domestic participants will need to present a form of government-issued ID, such as a driver's license. International participants will need to present a valid passport.

Please allow at least 30-60 minutes for this process, which will vary in duration based on the number of visitors to the NIH Campus each morning.

The Natcher Conference Center is about a 5 minute walk from the NIH Visitor Gateway Center.

Pre-ordered Boxed Lunch Program—Highly Recommended

We highly recommend that you take advantage of our boxed lunch program, and pre-order boxed lunches for your time at the conference. Dining options convenient to the Natcher Conference Center are very limited, and due to the large number of conference attendees, we anticipate extremely long lines in the conference center cafeteria.

Boxed lunches will be available for pick up during lunch time in the Natcher Center lower level foyer, just outside the Auditorium.

There are multiple locations available to eat boxed lunches—Room D (everyday), Room C (Thursday only), the cafeteria, and outdoor picnic tables.

Important notes:

Your lunch order must be received by 5 pm EDT at least 2 days in advance of the day it is to be delivered.

Lunch must be prepaid at the time the order is placed. We CANNOT accept cash at the meeting.

To order: Please follow the instructions on the conference website: www.scienceofteams-science.org

Options to Purchase Food Onsite

There are three options available to purchase food onsite at the Natcher Conference Center:

Dining Center—Conference Center Cafeteria

Location: Building 45 Main Floor

Breakfast: 6:30 am–9:30 am

Lite Fare: 9:30 am–11:00 am

Lunch: 11:00 am–2:30 pm

Concession Stand

Location: Building 45/1AA-02

Hours of Operation: 7:00 am–3:30 pm

Items for Purchase: Coffee, juice, sodas, muffins, chips, candy etc.

Vending Machines

Soda and snack vending machines are located on the entry level of the Natcher Conference Center.

Moderators and SciTS Recognition Award

We would like to extend special thanks to our moderators for facilitating discussion at the conference:

L. Michelle Bennett
Jennifer Couch
Kevin Crowston
Holly Falk-Krzesinski
Rosemarie Filart
Steve Fiore
Howard Gadlin
Paul Gaist
Kenneth Gibbs
Amanda Greene
Kara Hall
Suzanne Heurtin-Roberts
Margaret Hilton
James King
Julie Thompson Klein
George Mensah
Janet Okamoto
Susannah Paletz
William Riley
Bonnie Spring
Brooke Stipelman
Dan Stokols
Katrina Theisz

SciTS Recognition Award

Inaugural Recipient: Dr. Daniel Stokols, PhD

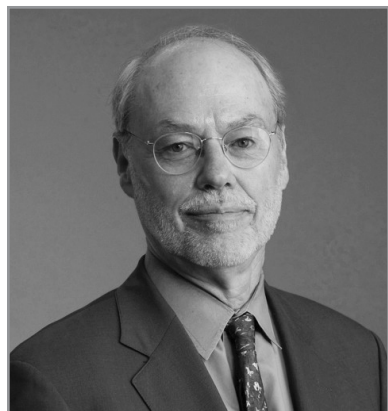
To recognize his vision, dedication, and leadership in helping to establish and continue to advance the Science of Team Science field.



Dr. Stokols is Research Professor and Chancellor's Professor Emeritus in Psychology and Social Behavior and Planning, Policy, and Design at the University of California, Irvine. He holds courtesy appointments in Public Health, Epidemiology, and Nursing Sciences at UCI. Dr. Stokols served as Director and founding Dean of the School of Social

Ecology at UC Irvine from 1988 to 1998. He is co-author of *Behavior, Health, and Environmental Stress* (1986) and co-editor of the *Handbook of Environmental Psychology* (1987), *Environmental Simulation* (1993), and *Promoting Human Wellness* (2002). Dr. Stokols served as scientific consultant to the National Cancer Institute, Division of Cancer Control and Population Sciences and as a member of NCI's Science of Team Science (SciTS) team from 2005 to 2011. He is currently a team science consultant for the National Academies Keck Futures Initiative (NAKFI) and a member of the National Research Council Committee on the Science of Team Science. Stokols' research interests include: (1) the science of team science (SciTS) and factors that influence the success of transdisciplinary research and training programs; (2) the environmental psychology of the Internet, especially the ways in which qualities of virtual life affect people's behavior and well-being; (3) the health and behavioral impacts of environmental stressors such as traffic congestion, crowding, and information overload; (4) the application of environmental design research to urban planning and facilities design; and (5) the design and evaluation of community health promotion programs.

Keynote Speaker



Phillip A. Sharp, PhD

Institute Professor

Koch Institute for Integrative Cancer Research

Massachusetts Institute of Technology

Dr. Sharp is a world leader in molecular biology and biochemistry. His research interests have centered on the molecular biology of gene expression relevant to cancer and the mechanisms of RNA splicing. His landmark achievement was the discovery of RNA splicing in 1977, which fundamentally changed scientists' understanding of the structure of genes, and earned Dr. Sharp the 1993 Nobel Prize in Physiology or Medicine. His

lab focuses on understanding how RNA molecules act as switches to turn genes on and off and the potential for generating a new class of therapeutics.

Places and Spaces Collection

We are pleased that the SciTS 2015 Conference is host to a selection of images of the Places and Spaces collection.

Places and Spaces is a collection of 100 images that showcase innovative approaches to data visualization that are critical for making sense of large data sets, and provide examples that delight the eyes, engage the viewer, and impart large amounts of information in a focused, digestible format.

The selection of images showcased at SciTS 2015 depict connections among scientific disciplines, the birth of new areas of science, and the diffusion of ideas across the landscape of science. View them on Wednesday at the Scientific Poster Session—Posters 24 and 25.

Featured Speakers



Christopher P. Austin, MD

*Director, National Center for Advancing Translational Sciences (NCATS)
National Institutes of Health*

Dr. Austin leads NCATS in its mission to catalyze the generation of innovative methods and technologies to enhance the development, testing, and implementation of diagnostics and therapeutics across a range of human diseases and conditions. Dr. Austin is applying his experience across the spectrum of translational research to implement a system-wide approach to accelerating the translational science process, thus speeding the delivery of interventions that improve human health.



L. Michelle Bennett, PhD

*Chief Science Officer
National Institute of Biomedical Imaging and Bioengineering*

Dr. Bennett supports the NIBIB mission to improve human health by leading the development and accelerating the application of advanced biomedical technologies to advance discovery research and its application to the clinical setting. She has extensive background in promoting collaboration and team-based approaches by bringing together research scientists with diverse backgrounds and expertise to solve complex scientific problems. She co-led an initiative to understand fundamental characteristics that contribute to successful scientific team functioning, which resulted in the development of a publicly available publication: *Collaboration and Team Science: A Field Guide*. Dr. Bennett earned her PhD in oncology, is a certified executive coach, and supports individuals and teams in the attainment of their goals.



Nancy J. Cooke, PhD

Professor and Program Chair, Human Systems Engineering

Arizona State University

Science Director, Cognitive Engineering Research Institute

Dr. Cooke is currently the chair of the National Research Council's Board on Human Systems Integration and chair of a study panel at the National Academies of Science on the Science of Team Science. Dr. Cooke served as a member of the USAF Scientific Advisory Board from 2008 to 2012. Dr. Cooke's research interests include the study of individual and team cognition and its application to the development of cognitive and knowledge engineering methodologies, cognitive task analysis, sensor operator threat detection, homeland security systems, remotely operated vehicles, human-robot interaction, healthcare systems, and emergency response systems. In particular, Dr. Cooke specializes in the development, application, and evaluation of methodologies to elicit and assess individual and team cognition.



Robert T. Croyle, PhD

Director, Division of Cancer Control and Population Studies

National Cancer Institute

National Institutes of Health

Dr. Croyle has directed the Division of Cancer Control and Population Sciences (DCCPS) at the National Cancer Institute (NCI) since 2003. In this role, he oversees a research portfolio and operating budget of nearly a half billion dollars and serves on NCI's Scientific Program Leaders governance group covering a wide range of scientific domains and disciplines, including epidemiology, behavioral science, surveillance, cancer survivorship, and health services research.

**Jonathon Cummings, PhD**

*Associate Professor of Management
Fuqua School of Business
Duke University*

Dr. Cummings received an NSF Early Career Award for his research on innovation in geographically dispersed teams and networks. His subsequent research has focused on virtual teams in corporations as well as collaboration in science, and his publications have appeared in outlets across a number of fields, including *Organizational Behavior* (e.g., *Management Science*, *Academy of Management Journal*, *Academy of Management Review*), *Information Systems* (e.g., *MIS Quarterly*, *Information Systems Research*), *Human-Computer Interaction* (e.g., *CHI*, *CSCW*, *CACM*), and *Science Policy* (e.g., *Social Studies of Science*, *Research Policy*).

**Howard Gadlin, PhD**

*Ombudsman and Director, Center for Cooperative Resolution
National Institutes of Health*

Dr. Gadlin is studying the dynamics of scientific teams and collaborations and developing new approaches to addressing conflicts among scientists. With Dr. Bennett, he co-authored *Collaboration and Team Science: A Field Guide*. He is often called in as a consultant or mediator in cases of “intractable” disputes. Dr. Gadlin has designed and conducted training programs internationally in dispute resolution, sexual harassment, and multicultural conflict. Dr. Gadlin is past President of the University and College Ombuds Association, and of The Ombudsman Association. He was formerly Chair of the Ethics Committee of the Society of Professionals in Dispute Resolution, Chair of the Coalition of Federal Ombudsmen, and Chair of the Federal Inter-Agency Alternative Dispute Resolution Working Group steering committee.

Featured Speakers



Patricia D. Hurn, PhD

*Vice Chancellor for Research and Innovation
The University of Texas System*

Dr. Hurn leads the effort to support an ecosystem across all 15 University of Texas System campuses, connecting research to industry through commercialization. As the chief research officer in the Office of Health Affairs she also focuses on building collaborative models of bio-health research, creating innovative science education programs, and constructing technological systems and infrastructure for the mission of discovery.



James S. Jackson, PhD

*Director, Institute for Social Research
University of Michigan, Ann Arbor*

Dr. Jackson's research focuses on issues of racial and ethnic influences on life course development, attitude change, reciprocity, social support, and coping and health among African Americans. He is a founding member of the "Aging Society Research Network" of the MacArthur Foundation, and is currently directing the most extensive social, political behavior, and mental and physical health surveys on the African American and Black Caribbean populations ever conducted. He is the Co-Director of the NIH-supported University of Michigan's "Center for Integrative Approaches to Health Disparities" and the "Michigan Center for Urban African American Aging Research."



Aparna Joshi, PhD

*Associate Professor of Management and Organization
Smeal College of Business
Pennsylvania State University*

Dr. Joshi's work focuses on multilevel issues in workplace diversity, gender issues in science and engineering, collaboration in global and distributed teams, generational issues in the workplace, and international and cross-cultural management. She has current NSF support to study gender dynamics in engineering work groups as well as status-based dynamics in multidisciplinary science and engineering groups.



Steve W. Kozlowski, PhD

*Professor of Organizational Psychology
Michigan State University*

Dr. Kozlowski is an expert on team development, team leadership, and team effectiveness. Dr. Kozlowski is the Editor of the Oxford Organizational Psychology Book Series, Editor of the Oxford Handbook of Organizational Psychology, and previous Editor of the Journal of Applied Psychology. His research is directed by a meta-theoretical perspective that views organizations as dynamic systems of cross-level and emergent multilevel processes unfolding over time. His primary research interests focus on the processes by which individuals, teams, and organizations learn, develop, and adapt. Recent work has centered on developing theory and conducting research to integrate learning processes across the individual, team, and organizational levels.



Michael Lauer, MD

*Director, Division of Cardiovascular Sciences
National Heart, Lung, and Blood Institute*

In his current position, Dr. Lauer provides leadership for NHLBI's national program for research (basic, clinical, population, and health sciences) on the causes, prevention, and treatment of cardiovascular diseases. For seven years, Dr. Lauer was a contributing editor for the Journal of the American Medical Association. Prior to joining NHLBI, Dr. Lauer served as the director of the Cleveland Clinic Foundation Exercise Laboratory and vice chair of the clinic's Institutional Review Board. He also served as co-director of the Coronary Intensive Care Unit and director of clinical research in the Department of Cardiology. Dr. Lauer has won numerous awards for his research, teaching, and government service, including the Arthur S. Flemming Award for his exceptional leadership at the NHLBI.

Featured Speakers



Richard Nakamura, PhD

*Director, Center for Scientific Review
National Institutes of Health*

Dr. Nakamura has directed the NIH Center for Scientific Review (CSR) since 2011. The CSR's mission is to see that NIH grant applications receive fair, independent, expert, and timely reviews—free from inappropriate influences—so NIH can fund the most promising research. Prior to directing the CSR, Dr. Nakamura had a distinguished 32-year career at the National Institute of Mental Health. He is the recipient of many awards, including the Presidential Rank Award, NIH-Asian/Pacific American Organization (APAO) Outstanding Achievement Award for Administrative Work, and leadership awards from the Federation of Behavioral Psychological and Cognitive Sciences and the International Society for Behavioral Neuroscience. He is a Fellow of the American Association for the Advancement of Science.



Scott E. Page, PhD

*Professor of Complex Systems, Political Science, and Economics
University of Michigan, Ann Arbor*

Dr. Page's research focuses on the myriad roles that diversity plays in complex systems. For example, how does diversity arise? Does diversity make a system more productive? How does diversity impact robustness? Does it make a system prone to large events? Dr. Page has written three books, published papers in a variety of disciplines, and has had many opportunities to engage with community groups, corporations, government agencies, NGOs, and university audiences on the topic of diversity.



Jean R. Slutsky, PA, MSPH

*Chief Engagement & Dissemination Officer
Patient-Centered Outcomes Research Institute (PCORI)*

Ms. Slutsky leads PCORI's Engagement Program and also serves as Director of PCORI's Communication and Dissemination Research Program. Before joining PCORI, Ms. Slutsky directed the Center for Outcomes and Evidence at the Agency for Healthcare Research and Quality, where she conceived and implemented the Effective Health Care program, an integrated program of research, stakeholder engagement, research training, and dissemination and implementation of comparative effectiveness research. Slutsky is particularly interested in pragmatic user-driven research and its implementation into healthcare decision making.

Featured Speakers



Hannah Valentine, MD

*Chief Officer for Scientific Workforce Diversity
National Institutes of Health*

Dr. Valentine leads NIH's effort to diversify the biomedical research workforce by developing a vision and comprehensive strategy to expand recruitment and retention, and promote inclusiveness and equity throughout the biomedical research enterprise. Dr. Valentine is a past recipient of the NIH Director's Pathfinder Award for Diversity in the Scientific Workforce and has a proven record on implementing diversity initiatives in academic medicine. Prior to joining the NIH, Dr. Valentine served as Senior Associate Dean for Diversity and Leadership at Stanford School of Medicine, and Professor of Cardiovascular Medicine at Stanford University Medical Center.



Griffin M. Weber, MD, PhD

*Head, Knowledge Discovery & Management Group
Harvard Medical School*

Dr. Weber's team science research focuses on expertise mining and social network analysis. He invented the Profiles Research Networking Software, which contains research profiles for 20,000 faculty. Dr. Weber is also an investigator on Informatics for Integrating Biology and the Bedside (i2b2), for which he helped develop a web-based open source platform that enables a variety of functions, including queries of large clinical repositories for hypothesis testing and identification of patients for clinical trials. He also has an interest in public input on scientific proposals.

Wednesday, June 3, 2015

8:00 am–8:45 am

Registration

Lower Level Foyer

8:45 am–9:15 am

Welcome and Introduction

Auditorium

Kara Hall, PhD

Director, Science of Team Science (SciTS) Team, National Cancer Institute

Amanda Vogel, PhD, MPH

Senior Behavioral Scientist, Leidos Biomedical Research, Inc.

Brooke Stipelman, PhD

Scientific Program Manager, Science of Research and Technology Branch, National Cancer Institute

9:15 am–10:45 am

Featured Panel: National Academy of Sciences (NAS) Report – Enhancing the Effectiveness of Team Science

Auditorium

Nancy Cooke, PhD

Chair, National Academies of Sciences SciTS Committee

Professor, Human Systems Engineering
Arizona State University

Jonathon Cummings, PhD

Associate Professor, Management and Organizations
Fuqua School of Business
Duke University

Stephen M. Fiore, PhD

Associate Professor, Cognitive Sciences
University of Central Florida

Kara L. Hall, PhD

Director, Science of Team Science (SciTS) Team
Science of Research and Technology Branch
National Cancer Institute

James Jackson, PhD

Daniel Katz Distinguished University Professor of Psychology

Professor, Health Behavior and Health Education
Director, Institute for Social Research
University of Michigan, Ann Arbor

Steve Kozlowski, PhD

Professor, Organizational Psychology
Michigan State University

Judith Olson, PhD

Bren Professor of Information and Computer Sciences
University of California, Irvine

Daniel Stokols, PhD

Research Professor and Chancellor's Professor
Emeritus
School of Social Ecology
University of California, Irvine

Moderator: Margaret Hilton
Senior Program Officer
Board on Science Education
Board on Testing and Assessment
National Research Council

Scientists have increasingly joined with colleagues in collaborative research efforts referred to as “team science” to address increasingly complex scientific and societal challenges. While team science can promote research innovation and extend the impact of research findings, it can also introduce challenges that slow or prevent teams and groups from achieving their scientific goals. This session will feature highlights from the recent National Research Council report, *Enhancing the Effectiveness of Team Science*. The panel will provide guidance on assembling the science team, leadership, education, and professional development for science teams and groups, as well as institutional structures and policies to support science teams. The panel will also identify areas where further research is needed to help science teams and groups achieve their scientific and translational goals.

11:00 am–12:00 pm

Keynote: Conversation with Phillip Sharp

Auditorium

Phillip Sharp, PhD
Nobel Laureate
Institute Professor
Koch Institute for Integrative Cancer Research
Massachusetts Institute of Technology

Moderator: Kara Hall, PhD
Director, Science of Team Science (SciTS) Team
Science of Research and Technology Branch
National Cancer Institute

During this hour, Nobel Laureate Phillip Sharp, co-discoverer of RNA splicing, and Conference Chair Dr. Kara Hall, will discuss a range of topics related to Dr. Sharp’s experiences conducting, leading, supporting, and facilitating team-based research. Discussions will include insights and perspectives from Dr. Sharp’s (1) decades of experience as a geneticist and molecular biologist—conducting and leading groundbreaking team-based science; (2) leadership in organizations like Stand-up-to-Cancer—developing and evaluating innovative strategies for funding and assembling interdisciplinary research teams; and (3) vision for championing a new “revolution” in science—the convergence of the life sciences, physical sciences, and engineering. Discussions will also include Dr. Sharp’s views on the influence of team-based research on the culture and structure of the scientific enterprise. Dr. Sharp will reflect on the relevance of team science and implications of the science of team science for advancing the mission of NIH and other scientific organizations.

1:15 pm–3:00 pm

Thematic Paper Sessions (submitted)

Thematic Paper Session: Engaging Community Stakeholders in Team Science

Balcony A

Moderator: Suzanne Heurtin-Roberts

Paper 1–Community Engaged Scholars Program: Advancing Team Science Through Academic and Community Partnerships to Overcome Health Challenges

Authors: Dana Burshell, Dayan Ranwala, Jeanette Andrews, Susan Newman, Cathy Melvin, and Carolyn Jenkins

Paper 2–Operational Model for Effective Integration of Translational Science Stakeholders

Authors: Laurie Hassell, Kelly Edwards, Andrea Lazarus, and Laura-Mae Baldwin

Paper 3–Carpe Oppunitatem: Developing Disciplinary Diversity for Petcoke

Authors: Donnie Sackey, Judith Moldenhauer, and Joseph Caruso

Paper 4–Assessing Stakeholder Engagement in Infrastructure Development: A Logic Model and Longitudinal Results

Authors: Sarah Daugherty, Consuelo Wilkins, Madeleine Shalowitz, and Laura Forsythe

Thematic Paper Session: Maximizing the Effectiveness of Interdisciplinary Team Interactions

Balcony B

Moderator: Stephen Fiore

Paper 1–The Mars Exploration Rover Mission: Findings from a Large Multidisciplinary Team

Authors: Susannah Paletz, Joel Chan, and Christian Schunn

Paper 2–Building Effective Transdisciplinary Research Teams

Authors: Candace Gibson and Dag von Lubitz

Paper 3–Building Community in a Transdisciplinary Setting: The Forced Migration Group as a Developmental Project

Author: Larry Hirschhorn

Paper 4–The Anatomy of Teams: Division of Labor in Collaborative Knowledge Production

Authors: Carolin Haeussler and Henry Sauermann

Paper 5–Innovative Approaches to Researching Transdisciplinary Teamwork for Effective Science-Policy Action in the Americas

Authors: Gabriela Alonso-Yanez, Lily House-Peters, Sebastian Bonelli, Martin Garcia Cartagena, Michelle Farfan, Ignacio Lorenzo, and Jeremy Pitman

Thematic Paper Session: Training for Interdisciplinary Research and Team Science

Balcony C

Moderator: Daniel Stokols

Paper 1—Training the Next Generation of Transdisciplinary Cancer Researchers

Authors: Sarah Hohl and Beti Thompson

Paper 2—Population Health Science: A Model for Interdisciplinary Training

Authors: Yonette Thomas, Christine Bachrach, Jo Ivey Boufford, Gerard P. Lebeda, and Stephanie Robert

Paper 3—Development of a “Team Science in Clinical Research” Course for Clinical Investigator Trainees

Authors: Damayanthi Ranwala, Marc I. Chimowitz, Perry V. Halushka, Patrick D. Mauldin, Jihad S. Obeid, Joann F. Sullivan, and Daniel T. Lackland

Paper 4—Developing a Skills-Based Workshop Series for Early Career Clinical and Translational Health Scientists

Authors: Elizabeth W. Anderson, Nancy Calvin-Naylor, and Laura Denton

Paper 5—Core Competencies in Team Science

Authors: Sawsan Khuri and Stefan Wuchty

Thematic Paper Session: Using Bibliometrics to Understand the Impact of Team Science

Room A

Moderator: Katrina Theisz

Paper 1—Connections: STEM Educational Research Communities, Knowledge Transfer, and Contributions to Innovation Pathways

Authors: Jan Youtie, Alan L. Porter, Gregg Solomon, and Stephen Carley

Paper 2—Cross-Disciplinary Research Knowledge Flows: How Multidisciplinary are Articles in Multidisciplinary Journals?

Authors: Gregg Solomon, Alan Porter, and Stephen Carley

Paper 3—Subject Diversity by Researcher Role, and Its Effects on Research Performance for Three University Medical Centers

Authors: Charisse Madlock-Brown and David Eichmann

Paper 4—Research Productivity Over the Life Cycle in the Era of High Skill Immigration

Author: Wei Huang

Paper 5—Sizes of Research Teams and the Growth of Knowledge

Author: Stasa Milojevic

3:15 pm–4:45 pm

Thematic Paper Sessions and Panels (submitted)

Panel: Decade of Review of Team Health Science Initiatives at the University of Saskatchewan – Lessons Learned from a Magnificent Start to Current Reality

Balcony A

Authors: Jim Thornhill, Rachel Nelan, Hugh Townsend, and Brad Steeves

Panel: Developing and Disseminating Research-to-Practice Tools and Products – Findings from the SCTC Research Initiative

Balcony B

Authors: Elizabeth Ginexi, Grace Huang, Sophia Tsakraklides, and Keith MacAllum

Panel: Disciplinary Diversity in a Multi-Stakeholder Governance Structure – Facilitating Engagement and Enhancing Relevance of Policies and Resources for Patient-Centered Research Networks

Balcony C

Authors: Sarah Daugherty, Katherine Kim, W. Benjamin Nowell, Darrel Drobnich, Jaye Bea Smalley, and Hugo Campos

Thematic Paper Session: Cross Institutional Collaboration – Strategies for Success

Room A

Moderator: Holly Falk-Krzesinski

Paper 1–Defining the Work of Coordinating Centers

Author: Betsy Rolland

Paper 2–A Practical Application of the Science of Team Science Tenets = An Integrated Research Team

Authors: Nancy L Dianis and Tracy Wolbach

Paper 3–A Framework for Assessing Strategy Management in Collaborative Clinical Research Networks

Authors: Jonathan Kagan, David Boan, Ellen Cull, Judith Zuckerman, Jerry Lassa, Beth Grace, and Laura McNay

4:45 pm–5:30 pm

Scientific Poster Session #1

Thematic Group 1: Bibliometrics

Poster 1–Dissecting Scholarly Patterns in Biology and Computer Science

Authors: Majeti Dinesh, Kyeongan Kwon, Panagiotis Tsiamartzis, and Ioannis Pavlidis

Poster 2–Quantifying Interdisciplinarity with Jensen-Shannon Divergence and Entropy

Authors: Harish S. Bhat, Sebastian Rodriguez, Rick Dale, and Evan Heit

Poster 3–Effect of Collaboration Modeling Approach on Collaboration Success Prediction

Authors: Fahimeh Ghasemian, Kamran Zamanifar, Nasser Ghasem-Aghaee, Anup Satish Sawant, and Noshir Contractor

Poster 4–Using Research Networking Data to Assess the Impact of Translational Research Funding on Collaborative Publications

Authors: Jihad S. Obeid, Dayan Ranwala, Randal Davis, Daniel T. Lackland, Perry V. Halushka, and Kathleen T. Brady

Poster 5–Assessing the Impact of Team, Multidisciplinary, and Collaboration in Neuroscience Research Publications

Authors: Norman Azoulay and Griffin Weber

Poster 6–A New Methodology for Measuring Interdisciplinary Research

Authors: Lei Pan, Sophia Katrenko, Jereon Baas, Holly J. Falk-Krzesinski, and Judith Kamalski

Thematic Group 2: NIH Activities Around Team Science

Poster 7–Coordinating Transdisciplinary Research Across Multiple Centers

Authors: Sarah Hohl, Beti Thompson, and Sarah Knerr

Poster 8–Comparison and Trends in Research Collaboration: Transdisciplinary Tobacco Use Research Centers Co-Authorship Network Properties, 1999–2015

Authors: Janet Okamoto, Brooke Stipelman, Grace Huang, and Kara Hall

Poster 9–An Analysis to Examine the Productivity and Impact of Training in the Transdisciplinary Research on Energetics and Cancer (TREC) Initiative

Authors: Amitpal Vohra, Brooke Stipelman, and Kara Hall

Poster 10–Assessing the Effectiveness of the NCI's Alliance Initiative in Generating Multidisciplinary Scientific Outputs and Enabling Clinical Translation of Nanotechnologies Developed in Academia

Authors: Natalie Fedorova-Abrams, Christopher Belter, James Corrigan, Elizabeth Hsu, Ya-Ling Lu, Alan Porter, and Piotr Grodzinski

Poster 11–SPOREs: Pioneering Translational Team Science

Authors: Peter Ujhazy, Steve Nothwehr, Rajeev Agarwal, Julia Arnold, Andrew Hruszkewycz, Leah Hubbard, Igor Kuzmin, Tamara Walton, and Toby Hecht

Poster 12–Two Unique Programs, One Mission: Partnering for Success!

Authors: Hana Smith, Cheryl Fisher, Pat Piringer, Jennifer Simmons, Jemelle Banks, Julie Orlando, Eugene Hyunga, and Frederick Ognibene

Poster 13–Developing a Systems Map of Team Science: A Spotlight on Methods and Preliminary Results

Authors: Marina Dathe, Grace C. Huang, Brooke A. Stipelman, Kenneth D. Gibbs, Katrina J. Serrano, Amanda L. Vogel, Nina Larsen, Christopher Williams, Sophia P. Tsakralides, Ross Hammond, and Kara L. Hall

Thematic Group 3: Innovative Online Tools to Facilitate Team Science

Poster 14–CIELHO: A Platform for Enabling Reproducible Research

Authors: Omkar Lele, Erin Holve, and Philip Payne

Poster 15–Website for Large-Scale Automated Reviewer Assignment and Manuscript Scoring

Authors: Daniel Acuna, Titipat Achakulvisut, and Konrad Kording

Poster 16–HHS Profiles Pilot Project, Enterprise Expertise Mining & Collaboration Exploration

Authors: James King, Kara Hall, and Tisha Wiley

Poster 17–Mixed Methods Research as Simulated Environment for Team Development

Authors: Alexander Libin, Ellen Danford, Manon Schladen, Samantha Cichon, Dwan Bruner, and Joel Scholten

Poster 18–The Team Science Toolkit: A One-Stop-Shop for Team Science Strategies and Resources

Authors: Amanda L. Vogel, Kara L. Hall, Brooke A. Stipelman, Sophia P. Tsakraklides, David Garner, Elliot T. Grant, and the Team Science Toolkit Editorial Board

Poster 19–Building on a Meta-Study Team: Social Networking Through Case Similarity

Authors: Alyson Young and Wayne Lutters

Poster 20–Open Science and Collaboration for Enhancing Neuroimaging Genetics through Meta-Analysis (ENIGMA) through the Organic Data Science Framework

Authors: Neda Jahanshad, Sarah Madsen, Yervand Azatian, Derrek Hibar, Paul Thompson, and Yolanda Gil

Thematic Group 4: Stakeholder Engagement in Science Teams

Poster 21–Inside Looking Out: Assembly of an Interdisciplinary Environmental Health Research Team from the Perspective of a Molecular Biologist

Author: Joseph Caruso

Poster 22–Exploring Power and Legitimacy in Technical Communication in U.S. Environmental Protection Agency Work Related to Environmental Justice

Author: Sheryl Mebane

Poster 23–Bringing Voice to Policy Building: A Cross-Population Multi-Stakeholder Conceptual Model for Management of Acute Unscheduled Care in the U.S. Using Group Concept Mapping

Authors: Gaetano R. Lotrecchiano, Mark Zocchi, Mary Kane, Danielle Lazar, and Jesse Pines

Thematic Group 5: Places and Spaces: 100 Maps of Science (selected images)

Posters 24 and 25–Selected images from the Places and Spaces exhibit, showcasing innovative and engaging approaches to visualization and synthesize, of large datasets, that depict connections among scientific disciplines, the birth of new areas of science, and the diffusion of ideas across the landscape of science.

Thursday, June 4, 2015

8:15 am–8:45 am

Registration

Lower Level Foyer

8:45 am–9:00 am

Welcome Back—Introduction of Key Topics for the Day

Auditorium

Kara Hall, PhD

Director, Science of Team Science (SciTS) Team, National Cancer Institute

9:00 am–10:30 am

Invited Panel: Organizational & Institutional Strategies to Support Team Science

Auditorium

James Jackson, PhD

Daniel Katz Distinguished University Professor
of Psychology

Professor, Health Behavior and Health Education

Director, Institute for Social Research

University of Michigan, Ann Arbor

Patricia D. Hurn, PhD

Vice Chancellor for Research and Innovation

The University of Texas System

Christopher Austin, MD

Director, National Center for Advancing
Translational Sciences (NCATS)

Moderator: Bonnie Spring, PhD

Professor, Preventive Medicine, Psychology, & Psychiatry

Director, Center for Behavior and Health

Northwestern University

Solutions to complex scientific and practical health problems benefit from the efforts of specialists from diverse backgrounds working collaboratively across disciplinary silos. Interdisciplinary science teams do not, however, operate in a vacuum. Instead, they function within an organizational and institutional context that can either facilitate or stifle cross-sector innovation. The panelists will provide a multi-level perspective on how organizational structure and processes influence team science. They will provide three vantage points: a center within an academic institution, multiple academic institutions within a state university system, and multiple university institutes operating under the guidance of a federal agency. Universities wishing to foster productive team science increasingly approach design of the built environment with an awareness that

collaboration is facilitated by features that encourage spontaneous face-to-face interaction. Vigorous ongoing efforts aim to optimize university policies governing the allocation of rewards such as promotion, tenure, and funding, since these contingencies shape faculty behavior most directly. A desire to form partnerships with for-profit entities is now educating universities about a new conundrum: how members of cross-sectoral teams can resolve their differing norms about transparency and collaboration. The need to balance organizational coherence with the divergence needed to spur innovation is the core challenge faced in managing a system like the University of Texas, comprised of 14 separate campuses. Panelists will describe how organizations can invest in collaborative research infrastructure and develop leaders with a cultural orientation that advances innovation. They will illustrate how emerging opportunities in “rich” data, precision medicine, and entrepreneurship training can advance team science and translational research. Convening of the network of National Centers for Advancing Translational Sciences (NCATS) illustrates the role that federal leadership can play in supporting translational team science. NCATS studies translation on a system-wide level as a scientific and operational problem, developing and supporting innovative collaborations across traditionally separate scientific disciplines and organizations, including government agencies, academia, industry, and patient organizations. Each NCATS center catalyzes translational science by convening teams with diverse expertise who work to reduce, remove, or bypass significant bottlenecks across the entire continuum of translation. By developing new approaches, technologies, and models, demonstrating their usefulness, and disseminating results to the larger scientific and human communities, the NCATS program illustrates a federal agency at work trying to speed the journey from basic science discovery to demonstrated public health benefit.

10:45 am–11:15 am

Featured Talk: Griffin Weber

Auditorium

Speaker: Griffin M. Weber, MD, PhD
Head, Knowledge Discovery & Management Group
Harvard Medical School

Moderator: James King, MLS, FSLA
Chief, Information Resources and Services Branch
Division of Library Services
National Institutes of Health Library

Profiles Research Networking Software (RNS) is an open source website used by institutions across the country to generate searchable online profiles of their investigators (<http://profiles.catalyst.harvard.edu>). Interactive network visualizations enable users to explore the different ways people are connected, such as through co-authorship, having similar research interests, or working in physically nearby offices. Although Profiles RNS was originally created to help users find experts in particular subject areas, it also provides a rich source of data for studying collaboration within an organization. This presentation will show how Profiles RNS has been used to analyze (1) collaboration patterns across different disciplines, (2) gender and race differences in scientific networks, (3) attributes of teams that predict whether they will be awarded funding, and (4) the role of interdisciplinary teams on translational science.

11:15 am–12:15 pm

Ask the Experts

Auditorium

L. Michelle Bennett, PhD
Chief Science Officer
National Institute of Biomedical Imaging
and Bioengineering

Howard Gadlin, PhD
Ombudsman
Director, Center for Cooperative Resolution
National Institutes of Health

Moderator: Brooke Stipelman, PhD
Scientific Program Manager
Science of Research and Technology Branch
National Cancer Institute

Drs. Gadlin and Bennett will lead a panel of nationally recognized SciTS scholars to discuss frequently asked questions around how to effectively form and facilitate team-based collaborations. Topics for this session were generated using questions submitted by conference participants as well as examples drawn from the work of the panelists reflecting common questions, concerns, and issues that emerge during collaborations. A diverse range of topics will be covered including interpersonal team dynamics, team processes, organizational policies, and institutional barriers. This session will offer practical real-world consultation and guidance to help those involved in team-based research more effectively lead, support, and participate in collaborative work. Ample time will be allocated for questions and discussion with the audience.

1:30 pm–3:00pm

Thematic Paper Sessions and Panels (submitted)

Panel: Team Science Coaches – Career Paths for Fostering Successful Team Science

Balcony A

Authors: Holly Falk-Krzesinski, Amy Davis, and Christine Hendren

Thematic Paper Session: Knowledge Networks and Shared Mental Models

Balcony B

Moderator: Janet Okamoto

Paper 1–Boundary Spanning Patent Applications, Teams, and the Patent Examination Process

Authors: Ryan Whalen and Noshir Contractor

Paper 2–Collaboration and Advice Networks Among Dissemination and Implementation Researchers: Implications for Strategic Initiatives to Advance the Science

Authors: Alina Lungeanu, Wynne Norton, and Noshir Contractor

Paper 3–How Facilitation and Rules of Interaction Shape Knowledge Network Structures and Outcomes

Author: Jeni Cross

Paper 4–Shared Knowledge Networks in Teams: Current and Future Applications to Engineering Design, System Safety, and Chronic Healthcare

Author: Mark Avnet

Panel: Team Science in Learning Health Systems – Lessons from the American Recovery and Reinvestment Act Infrastructure Investments for CER

Balcony C

Authors: Eric Holve, Gurbaneet Randhawa, John Steiner, Michael Kahn, and Adam Wilcox

Thematic Paper Session: Cross Disciplinary Boundary Spanning

Room A

Moderator: Susannah Paletz

Paper 1–How Methodology Reflects Disciplinarity in Education Research Funded by NSF

Authors: Gregg Solomon, Carolina Milesi, Kevin Brown, Barbara Schneider, Mike Steketee, and Alan Porter

Paper 2–Specialization and Diversity in Teams, When Teams are Self-Generated

Authors: Katharine Anderson and Seth Richards-Shubik

Paper 3–Boundary Spanning in Academia: Antecedents and Near-Term Consequences of Academic Entrepreneurialism

Authors: Kevin Kniffin and Andrew S. Hanks

Paper 4–A Dyadic Perspective on Prior Experience and Productivity in Distributed, Interdisciplinary Science Teams

Authors: Jonathon Cummings and Sara Kiesler

3:15 pm–4:00 pm

SciTS Recognition Award

Auditorium

Introduction: Robert Croyle, PhD

Director, Division of Cancer Control and Population Sciences
National Cancer Institute

Dr. Robert Croyle will introduce Dr. Daniel Stokols, recipient of the first inaugural Science of Team Science (SciTS) Recognition Award. Dr. Croyle will highlight Dr. Stokols' involvement in early efforts to evaluate NCI's large transdisciplinary team science center initiatives, his leadership in bringing key stakeholders together to launch the SciTS field, and his central scholarly contributions that have helped to advance the field. Dr. Croyle will also share his perspectives on the development and importance of the SciTS field, and its implications for advancing the missions of NCI and NIH.

Awardee Remarks: Daniel Stokols, PhD

Research Professor and Chancellor's Professor Emeritus
School of Social Ecology
University of California, Irvine

Educational Strategies for Cultivating a Transdisciplinary Orientation Among Students and Scholars: A Social Ecological Approach

Over the past four decades, Dr. Stokols has worked with colleagues in the School of Social Ecology at UC Irvine to develop a set of curricular and mentorship strategies designed to nurture a transdisciplinary orientation among graduate students and postdoctoral researchers—especially their capacity for creative transdisciplinary (TD) theorizing. These strategies are rooted in certain core principles of social ecological inquiry, systems theory, and contextual analysis. In this presentation, Dr. Stokols will describe these overarching analytic principles, as well as how they are emphasized in a Core Seminar on Social Ecology for all first-year PhD students in the school, and an elective graduate seminar on Strategies of Theory Development. Hypothesis-generating skills for developing novel questions and fundamentally new theoretical insights are essential for the creation of novel TD conceptual and methodological frameworks that extend the existing landscape of research in particular disciplines and fields and reveal previously uncharted horizons. Dr. Stokols will focus on ecologically oriented approaches to identifying the effective context of target phenomena, and matching the contextual scope of a theoretical analysis to the characteristics of the particular problem/s under investigation. These contextual-framing strategies can enable broader analyses of complex phenomena that yield novel TD understandings of societal problems and translational strategies for ameliorating them.

Presentation of Award: Julie Thompson Klein, PhD

Professor of Humanities and Faculty Fellow for Interdisciplinary Development
Wayne State University

4:00 pm–4:45 pm

Thematic Paper Sessions (submitted)

Thematic Paper Session: Virtual Collaboration and Distributed Teams

Balcony A

Moderator: Kevin Crowston

Paper 1–Email as Telescope in Distributed Scientific Collaborations

Authors: Matt Willis, Sarika Sharma, Jaime Snyder, Carsten Østerlund, and Steve Sawyer

Paper 3–Mapping the Network of Scientific Software

Authors: Christopher Bogart, James Howison, and James Herbsleb

Paper 2–Do International Collaborations

Necessarily Produce More Innovative or Impactful Biomedical Research?

Author: Vanessa Pena

Thematic Paper Session: Open Science – Sharing Data and Analytic Approaches

Balcony B

Moderator: William Riley

Paper 1–Breaking Down the Barriers to Team Science for Cancer Imaging Research

Authors: Justin Kirby, Brenda Fevrier-Sullivan, and John Freymann

Paper 3–Collaborative Informatics Environment for Learning on Health Outcomes (CIELO): An App Store Model to Advance Team Science, Drive Innovation, and Support Discovery

Authors: Erin Holve, Philip Payne, Xiaoqian Jiang, and Indra Neil Sarkar

Paper 2–Framing the Community Data System Interface

Authors: Kristian Garza, Carole Goble, John Brooke, and Caroline Jay

Thematic Paper Session: Leading Teams – Theory- and Data Driven- Approaches

Balcony C

Moderator: Howard Gadlin

Paper 1–Knowledge Integration, Goal Commitment and Innovation in Interdisciplinary Medical Research Teams: The Role of Leaders

Authors: Maritza Salazar and Theresa Lant

Paper 3–Toward a Potential Model of Scientific Team Leadership: Proposed Grounded Theory Approaches to Study Leader Practices for Team Science

Authors: Kevin Wooten and Allan Brasier

Paper 2–The Leadership of Teams: A Review and Integration

Author: Sheila Webber

4:45 pm–5:30 pm

Scientific Poster Session #2

Atrium

Thematic Group 1: Training and Professional Development in Team Science

Poster 1–Scaling UPP the Integration Between Research and Education: Lessons from the Undergraduate PIRE Program (UPP) Down Under
Authors: Janet Rowe, Mariana Schmalstig, Jessica Martone, Sunny Jiang, Jean-Daniel Saphores, Richard Ambrose, Lisa Levin, David Feldman, Peter Bowler, Amir Aghakouchak, Brett Sanders, Megan Rippey, Brandon Winfrey, Andrew Mehring, Eric Huang, Jian Peng, Yiping Cao, Keah-Ying Lim, Ashmita Sengupta, Lindsey Stuvick, Andrew Hamilton, Lisa Khone, and Stanley Grant

Poster 2–Science Diplomats: Educating the Next Generation of Scientists and Engineers Working Across Boundaries to Tackle Global Challenges
Authors: Marga Gual Soler and Thomas P Seager

Poster 3–Team Science Training Intervention: Pilot Study and Proof of Concept
Authors: Deborah Diazgranados, Kevin Wooten, and Bonnie Spring

Poster 4–Delivering the Right Education, Training and Resources at the Right Time to Support the Development and Progress of Multidisciplinary Translational Research Teams in an Academic Health Center.
Authors: Heather Billings, Glenn Smith, Karen Weavers, Janet Okamoto, and David Warner

Poster 5–Achieving Superior Results with Cross-Functional Scientific Teams Using the Creative Teams Approach
Authors: Carol Manahan, Robert Myers, Danielle Imbeault, and Diane Silva

Poster 6–Core Competencies for Team Science- Proceedings from the Team Science Competency Domain Work Group of the Enhancing Clinical Research Professionals’ Training & Qualification Supplement Award
Authors: Jonelle Wright, Jan Fertig, and Kay Wilson

Poster 7–Engineering Empathy
Authors: Kaitlin Vortherms, Thomas Seager, and Sarah Tracy

Poster 8–The Arterial Stiffness Affinity Research Collaborative (ARC): A Successful Example of Team Science
Authors: Francesca Seta, Kathleen Morgan, Richard Cohen, David Coleman, Barbara Corkey, and Katya Ravid

Thematic Group 2: Team Dynamics

Poster 9–Eating Together at the Firehouse: How Workplace Commensality Relates to the Performance of Firefighters
Authors: Kevin Kniffin, Brian Wansink, Carol M. Devine, and Jeffery Sobal

Poster 19–A Transdisciplinary Study of Affect Influence and Contagion in a Closed Social Network
Authors: Patricia Schmidt, Thomas Moore, and Patrick Finley

Poster 11–Teleconference & Face-to-Face Grant
Peer Review: An Investigation of Score and
Discussion Time

*Authors: Afton Carpenter, Joanne Sullivan, Arati
Deshmukh, Scott Glisson, and Stephen Gallo*

Poster 12–Pathway: Guiding Complex Efforts from
Inception to Achievement

Authors: Barbara Heath and Catherine Freeman

Poster 13–1000(+) people, 4 years, 1 report:
Producing the Third National Climate Assessment
*Authors: Ilya Fischhoff, Emily Cloyd, and
Glynis Lough*

Poster 14–Collaboration Planning: A Stepwise
Process to Plan for Success in Team Science

*Authors: Kara L. Hall, Amanda L. Vogel, and
Kevin Crowston*

Poster 15–Computer Science Team

Authors: Katie Seely-Gant and Lisa Frehill

Thematic Group 3: Teaming to Enhance Healthcare Delivery

Poster 16–Perceptions in Transitions of Care Across
Healthcare Settings Experienced by Healthcare
Providers for Adults 65 Years of Age and Older
Author: Donna Volpe

Poster 17–Implementing Innovations into Community
Practice: A Tool to Incorporate End-User Perspectives
Into Decision-Making

*Authors: Karin Johnson, Anne Renz, Laura-Mae
Baldwin, and Michael Parchman*

Poster 18–Evaluation and Implementation of
Interprofessional Collaboration and Practice in
a Community Hospital Setting: Science of Team
Science Applied

*Authors: Terry Eggenberger, Bernardo Obeso,
and Kathryn Keller*

Poster 19–The Loud Surgeon Behind the Console:
Feasibility Study in Understanding Team

Communication During Robot-Assisted Surgery
*Authors: Judith Tiferes, Ann. M. Bisantz,
Mohamed A. Sharif, Nathalie M. Winder, and
Khurshid A. Guru*

Poster 20–PACE Continuous Innovation
Indicators™—A Team-Based Approach for
Evaluating Progress in Cancer Care
*Authors: Silvia Paddock, Lauren Brum, Kathleen
Sorrow, Samuel Thomas, Susan Spence,
Catharina Maulbecker-Armstrong,
Clifford Goodman, Michael Peake,
David Grainger, and Rose Li*

Poster 21–Design and Implementation of the
Enhanced Recovery Program

*Authors: Bhavesh Amin, Ali Sabbagh, Nida Aftab,
and Vinay Pallekonda*

Poster 22–Surgical Mentorship During Robot-Assisted
Surgery: Is the Surgeon Really With the Program?

*Authors: Khurshid Guru, Somayeh B Shafiei,
Mohamed Sharif, and Ehsan Esfahani*

Poster 23–Engineering Solutions to Health Problems:
A Workshop to Develop and Sustain Clinician-
Engineer Collaborations.

*Authors: Karen Demby, Shawn Gomez, and
David Peden*

Poster 24–Transdisciplinary Team Science in
the Advancement of a Patient Education Tablet
Application

*Authors: Vicki Shah, Carolyn Dickens, Adhir Shroff,
Vicki Groo, Diana Wilkie, and Andrew Boyd*

Friday, June 5, 2015

8:15 am–8:45 am

Registration

Lower Level Foyer

8:45 am–9:00 am

Welcome Back–Introduction of Key Topics for the Day

Auditorium

Kara Hall, PhD

Director, Science of Team Science (SciTS) Team, National Cancer Institute

9:00 am–10:30 am

Featured Panel: Diversity in Teams

Auditorium

Aparna Joshi, PhD

Associate Professor of Management and
Organization

Smeal College of Business

Pennsylvania State University

Hannah Valentine, MD

Chief Officer for Scientific Workforce Diversity

National Institutes of Health

Moderator: Kenneth Gibbs, Jr., PhD, MPH

Cancer Prevention Fellow

Science of Research and Technology Branch

National Cancer Institute

Scott Page, PhD

Professor of Complex Systems, Political Science, and
Economics

University of Michigan, Ann Arbor

Diversity in science, in many respects—including the participants in the scientific enterprise, and the perspectives needed to solve complex problems—continues to increase. Effectively managing and leveraging this increasing diversity is one of the most pressing challenges facing organizations and interdisciplinary science teams today. This panel will focus on the mechanisms through which diversity can produce better, more innovative, and more robust outcomes, as well as leadership strategies to effectively leverage diversity. Starting with an overview of research on diversity in teams, panelists will identify conditions under which diversity is likely to yield performance and innovation related benefits. In the context of science teams, the presentation will address the conditions under which gender diversity these teams can enhance innovation and scientific productivity. Next, the role that team leadership can play and its impact on team effectiveness and team outputs will be highlighted. Specifically, there will be a focus on the manners through which leadership can influence several team processes important for team effectiveness, particularly within diverse teams such as interdisciplinary or transdisciplinary science teams where team conflict may be inevitable.

Finally, an overarching “logic” for diversity will be presented, with a specific focus on four mechanisms through which diversity operates in problem solving: tool diversity, perspective diversity, combinatorics, and long tails. This session will provide an innovation-based rationale for diversity, and tools to effectively leverage diversity across various team contexts.

10:45 am–12:15 pm

Featured Panel: Innovations in Peer Review and Science Management

Auditorium

Richard Nakamura, PhD
Director, Center for Scientific Review
National Institutes of Health

Michael Lauer, M.D.
Director, Division of Cardiovascular Sciences
National Heart, Lung, and Blood
Institute

Jean Slutsky, PA, MSPH
Chief Engagement & Dissemination Officer
Patient-Centered Outcomes Research
Institute (PCORI)

Moderator: George Mensah, MD, FACC
Senior Advisor, Office of the Director
National Heart, Lung, and Blood Institute

Peer review and science management are crucial components of the biomedical research enterprise. They are designed to assure a fair, independent, expert, and timely review of research grant applications to enable the most promising and meritorious research applications to be identified and funded. Regardless of the type of research proposed, funding agencies and appropriators rely on the peer review process to maximize the return on investments made in funding research. During times of scarce resources and declining success rate of NIH grant applications, peer review’s ability to identify the most promising applications becomes even more critical and challenging. Many observers and editorialists, including NIH scientists, have recently questioned whether the current peer review at NIH meets that expectation. In this featured panel session, we begin with a brief overview of the role of scientific peer review at the National Institutes of Health (NIH), current record-low funding success rates, and a synopsis of the variety of approaches the Center for Scientific Review at NIH is exploring in order to improve application rating, application distribution, review format, review fairness and measurement of outcomes. Concrete examples are then presented from analyses of clinical trials, which by definition entail team science, demonstrating evidence of sub-optimal performance. For example, many clinical trials fail in execution, a substantial number are never published, some are inordinately expensive, and others have little impact on public health. A portfolio assessment of cardiovascular trials is then presented followed by examples of the different approaches to peer review, active program management, and innovative oversight that, taken collectively, could help turn the curve on the clinical research enterprise. Finally, an example of an innovative approach is presented from the Patient-Centered Outcomes Research Institute (PCORI). The PCORI approach to funding patient-centered comparative clinical effectiveness research, termed merit review, includes active engagement of patients as part of the

review team and the monitoring of funded projects' direct engagement of patients in the research process. Early experiences and data will be presented that will describe the impact to date on applicants, patients, and researchers. Ample time will be protected for active audience participation.

1:30 pm–3:00 pm

Thematic Paper Sessions (submitted)

Thematic Paper Session: Novel Face-to-Face Research Networking Approaches

Balcony A

Moderator: L. Michelle Bennett

Paper 1–Affinity Research Collaborative to Study Neurodegenerative Diseases

Authors: Gyungah Jun, David Coleman, Katya Ravid, and Lindsay Farrer

Paper 2–Temporary Colocation and Collaborative Discovery

Authors: Sen Chai and Richard Freeman

Paper 3–Scientific Retreats as Stimulators of Translational Interdisciplinary Team Building

Authors: Damayanthi Ranwala, Randal Davis, Anthony J. Alberg, Kathleen T. Brady, and Perry V. Halushka

Paper 4–A Field Experiment on Search Costs and the Formation of Scientific Collaborations

Author: Ina Ganguli

Thematic Paper Session: Citizen Science and Crowdsourcing

Balcony B

Moderator: Jennifer Couch

Paper 1–Making a Place at the Table: Crowdsourcing Design for Citizen Science

Authors: Carol Boston, Jennifer Preece, Mary Lou Maher, Kazjon Grace, and Tom Yeh

Paper 2–Participation Dynamics in Crowd-Based Knowledge Production: The Scope and Sustainability of Interest-Based Motivation

Authors: Henry Sauermann, and Chiara Franzoni

Paper 3–Biomedical Citizen Science: Barriers, and Opportunities for Success

Authors: Katrina Theisz, Jennifer Couch and Nih Citizen Science Working Group

Paper 4–Hackathons for Team Science: How and When Do They Work?

Authors: Erik Trainer, Chalalai Chaihirunkarn, Arun Kalyanasundaram, and James Herbsleb

Thematic Paper Session: Gender and Science Teams

Balcony C

Moderator: Rosemarie Filart

Paper 1–Gender and Team Science: Improving Collaborative Effectiveness of Research Teams

Author: Holly Falk-Krzesinski

Paper 2–Why do Articles Written by Women-Led Teams Receive Fewer Forward Citations Than Those Written by Men-Led Teams Evidence from MEDLINE.

Authors: Richard Freeman and Sifan Zhou

Paper 3–Team Science, Collaborations, and Mentorship: An International Approach

Authors: Lisa Frehill and Katie Seely-Gant

Paper 4–“Girls Rock, Yes We Do:” Improving Retention of Girls in Science Using a Diverse, Interdisciplinary Team Approach

Authors: Kathryn Clancy, Ayesha Tillman, Carla Hunter, and Jennifer Amos

Thematic Paper Session: Organizational Approaches and Design Strategies for Team Science

Room A

Moderator: Julie Klein

Paper 1–Towards Developing a Research Capability Framework

Authors: Airong Luo, Marcy Harris, and Barbara Mirel

Paper 2–Design Theory for Team Science

Author: Ben Shneiderman

Paper 3–A Proposed Framework for Evaluation of Scientists Collaborating in Team-Based Research

Authors: Madhu Mazumdar, Shari Messinger, Dianne M. Finkelstein, Judith D Goldberg, Christopher Lindsell, Sally C Morton, Brad H Pollock, Mohammad H Rahbar, Leah Welty, and Robert Parker

Paper 4–A Thermodynamics of Interdependence: Teams, Individuals, and Science

Author: William Lawless

3:15 pm–4:30 pm

Thematic Paper Sessions and Panels (submitted)

Panel: Our Scholarly Recognition System Still Doesn't Work

Balcony A

Authors: Daniel Katz, Amy Brand, Melissa Haendel, and Holly Falk-Krzesinski

Panel: Team Science and Federal Agency Experiences with Transformative Research

Balcony B

Authors: Avery Sen, Bhavya Lal, William Bonvillian, and William Valdez

Thematic Paper Session: Communicating Across Disciplines – Team and Organizational Level Perspectives

Balcony C

Moderator: Paul Gaist

Paper 1–The Communicative Constitution of Organizations: A Framework for Understanding and Troubleshooting Interdisciplinary Science

Author: Margaret Brooks

Paper 2–Perceived Discontinuities and Continuities in Transdisciplinary Scientific Groups

Authors: Kevin Crowston, Kathy Chudoba, Mary-Beth Watson-Manheim, Alison Specht, and Carol Hoover

Paper 3–Let's Talk About It – How Dialogue Supports Integration

Authors: Michael O'Rourke and Stephen Crowley

Paper 4–Diagnosing Differences Among Disciplinary Worldviews

Authors: Brian Robinson, Michael O'Rourke, Chad Gonnerman, and Stephen Crowley

Thematic Paper Session: New Measures to Assess Readiness for Team Science

Room A

Moderator: Amanda Greene

Paper 1–Calibrating and Validating the Motivation Assessment for Team Readiness, Integration, and Collaboration (MATRICx) Model and Instrument and Its Applicability for Self-Reflection and Intervention.

Authors: Gaetano R. Lotrecchiano, Trudy Mallinson, Tommy Leblanc-Beaudoin, Jeremy Furniss, Lisa Schwartz, and Holly Falk-Krzesinski

Paper 2–Measuring Integrative Capacity in Interdisciplinary Teams: Scale Development and Testing

Authors: Maritza Salazar, Theresa Lant, and Daniel Slyngstad

Paper 3–Transdisciplinary Orientation and Its Relation to the Quality of Scientific Products

Authors: Shalini Misra, Lulu Cheng, Daniel Stokols, Maritza Salazar, and Theresa Lant

4:30 pm–5:00 pm

The Future of Team Science: Setting a Course for Future SciTS Research and Practice

Auditorium

Moderator:

Kara L. Hall, PhD

Director, Science of Team

Science Team

Behavioral Research Program

National Cancer Institute

Speakers:

Kevin Crowston, PhD

Distinguished Professor of Information Science

School of Information Studies

Syracuse University

Holly J. Falk-Krzesinski, PhD

Vice President for Global Academics &

Research Relations

Elsevier

Stephen M. Fiore, PhD

Associate Professor and Director,

Cognitive Sciences Laboratory

University of Central Florida

Sarah Gehlert, PhD

E. Desmond Lee Professor of Racial and

Ethnic Diversity

George Warren Brown School of Social Work

Washington University in St. Louis

Julie Thompson Klein, PhD

Professor of Humanities and

Faculty Fellow for Interdisciplinary Development

Wayne State University

M. Mimi McClure, PhD

Associate Program Director

Division of Advanced Science Infrastructure

National Science Foundation

Thomas Seager, PhD

Associate Professor

School of Sustainable Engineering and

the Built Environment

Arizona State University

Daniel Stokols, PhD

Research Professor and Chancellor's

Professor Emeritus

University of California, Irvine

Team Science Toolkit

Discover. Contribute. Connect.



What Is The Team Science Toolkit?

The **Team Science Toolkit** is an interactive website that provides resources to help users manage, support, and conduct team-based research. It also provides resources for evaluating or studying team science.

The Toolkit includes:

- A user-generated collection of resources recommended by experts across disciplines
- Publically available resources such as practical tools to enhance research collaboration, measures for studying team-based research, and recommended readings
- A platform to connect with colleagues and stay up to date on news and events

How Can You Use The Toolkit?

You can use the **Team Science Toolkit** to:

- **Discover.** Learn from colleagues by exploring available resources to support your team science goals, and download them or link to them online.
- **Contribute.** Share your knowledge by uploading documents, links, information, or comments on resources that support the practice or study of team science.
- **Connect.** Join expert discussions on the blog, add your name to the expert directory, or stay up to date on news and events.

The Team Science Toolkit includes a wide variety of resources to help you conduct, manage, support, evaluate, or study team-based research. Use the Toolkit to find resources that support your goals.

www.teamsciencetoolkit.cancer.gov