# **REWARD AND RECOGNITION FOR TEAM-BASED & CROSS-DISCIPLINARY** RESEARCH





INSCITS Building the knowledge base for effective team science

International Network for the Science of Team Science

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#### Presenters

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### **Recognition & Reward for Team Science**

- "We will need to find better ways to do team science and reward it if we are to solve large overarching problems.
   Everybody on the team needs to get the same big gaudy championship ring..."
  - AG Gilman. Silver Spoons and Other Personal Reflections. Annu. Rev. Pharmacol. Toxicol, 2012



### **Redefining Success**

- "...there is good evidence that counting publications" is not sufficient ... The challenge is to get the community to identify what data form the basis for decisions made by these [tenure] committees. In the past we relied on personal judgments and close networks of people in a certain field that knew each other and each other's work... with the boost in international collaborations and team science as well as the interdisciplinary nature of science, these types of personal evaluations are no longer sustainable."
  - Quote by Julia Lane, PhD, Senior Managing Economist American Institutes for Research from "Scientific Evaluation and Metrics – an Interview with Julia Lane." Research Trends 27: 15-16. March, 2012

### **Considering IDR and Collaboration**

- NAS Facilitating Interdisciplinary Research Report, 2004
  - Academic survey respondents indicated that P&T criteria were the greatest impediment to interdisciplinary research in their campus
- Council of Environmental Deans and Directors Report, 2005
  - "Lured into the collaborative research needed for progress in an interdisciplinary field, scholars are later held to the standards of specific disciplines"
  - Need to develop new [recruitment, retention, promotion & tenure] procedures for handling interdisciplinary scholars
- University of Chicago Academic Medical Center Study, 2008
  - "Recognize all forms of scholarship as equally legitimate bases of academic tenure"
  - Subsequent change of P&T policy language that specifically addresses collaboration scholarship
- Creating interdisciplinary campus cultures: A model for strength and sustainability, J. T. Klein, 2010
  - Interdisciplinary career life cycle
  - Hiring, P&T

5

Ongoing faculty development

## **Team Science R&R Literature Library**

- Science of Team Science (SciTS) Mendeley Group
  - "Reward &
     Recognition for
     Team Science"
     folder

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Authorship, contributorship, Publishing Issues							☆	•	<b>P</b>	Klein, Julie Thompson; Falk- Krzesinski, Holly J.	Interdisciplinary and collaborative work: Framing pro and tenure practices and policies
Bibliometrics, Scientometrics, Informetrics & SNA CAUS Team Science Study							삸	•		Choucri, Nazli; Weck, Olivier de; Moavenzadeh, Fred	Promotion and Tenure for Interdisciplinary Junior Fa
CAHS Learn Science Study     Cognition and Learning in Collaborations							☆	•	P	Klein, Julie Thompson; Falk- Krzesinski, Holly J.	Interdisciplinary and collaborative work: Framing pro and tenure practices and policies
Collaboration Literature Collaboration Readiness and Integrity in Collaboration							☆	•		Canadian Academy of Health	Academic Recognition of Team Science: How to Opt
Communication & Knowledge Exchange_Integration							☆	•	•	Klein, Julie Thompson; Banacki,	Promotion and Tenure in Interdisciplinary Team Scie
Community Research & Team Science Conflict Management, Resolution, and Team Intervention							4	•		Rikakis, Thanassis	Innovative faculty evaluation criteria for incentivizing
Convergence									-	Disis, Mary L: Slattery, John T	Impact Interdisciplinary collaboration The Road We Must Take: Multidisciplinary Team Sc
CTSA Developing Measures for Assessing and Improving							Ŵ	•	1		······································
Distributed Collaboration_Virtual Teams_ICTs							\$	•		Pfirman, Stephanie; Martin, Paula: Berry, Leonard: Eletch	Interdisciplinary Hiring, Tenure and Promotion: Guid
Economics of Collaboration										National Research Council	Enhancing the Effectiveness of Team Science
Educationa	Educational Aspects/ Leaching Interdisciplinarity						Ŵ	·	•		5
Ethics/RCR	Evaluating IDR_Collaboration_Team Science						샀	•		Antes, A.L.; Mart, Adelina; DuBois, J.M.	Are Leadership and Management Essential for Good An Interview Study of Genetic Researchers
🎩 Funding an	Funding and Grants						☆	•	<b>~</b>	Cassuto, Leonard	The Changing Face of Scientific Collaboration
Gender & E	Gender & Diversity Issues in Collaboration and TS     Global Health						2			McGlynn, Terry	The Credit System in Science is Outdated
Innovation Creativity & Entrepreneurshin in Team Science							M	Ť	-11		
Interdiscipl	Interdisciplinarity (list collated March 2016)						☆	•		Paul-Hus, Adèle; Desrochers, Nadine; Rijcke, Sarah de; Rus	The Reward System of Science: Special Issue
Interdisciplinary Research, TS and SciTS						-	1	•		Derrick, Edward G; Falk-	Facilitating Interdisciplinary Research and Education
🐌 Internation	International_Global Collaboration								-	Krzesinski, Holly J; Roberts, M	Practical Guide
]] Joint Appoi	Joint Appoitments						$\dot{\alpha}$	•	<b>P</b>	Sujay S; Tockner, Klement	Diversitying Skills and Promoting Teamwork in Scien
Leadership	Leadership, Coaching and Team Composition						☆	•		University of Virginia School of	Promotion and Tenure Policy
Multilevel A	Multilevel Analysis						Ι.			University of Southern	Guidelines for Assigning Authorship and for Attributi
Must Read	Must Read						Ŵ	•		California, Joint Provost-Acad	Contributions to Research Products and Creative Wo
📗 Organizatio	Drganizational & Institutional Issues						☆	•	<b>B</b>	Nora, L M; Pomeroy, C; Curry, T F: Hill N S: Tibbs P a: Wils	Revising appointment, promotion, and tenure procee
Physical Infrastructure to Support Team Science										Texas A&M Health Science	Guideline: Faculty Appointment, Promotion, and Ten
Productivity	Productivity							•		Center	,, .
Research Centere							☆	•		Duke University	Interdisciplinary Studies at Duke
Reward & Recognition_Promotion and Tenure										Harvard University Medical	Authorship Guidelines
Sociotechnical coordination of Learns							Ŵ	•		School	
Team Assembly and Dynamics							☆	•		George Washington University	Faculty Guide for Appointments, Promotions, and Te
Team Proc	Team Processes									The Academy of Medical	Improving recognition of team science contributions

https://www.mendeley.com/community/science-of-team-science-(scits)

### **Initial Team Science APT Survey 2012**

- "I am interested to know if your institution's current APT policies or guidelines include any specific language regarding collaborations/collaborative activity, multi/interdisciplinary research and scholarship, and/or team science."
- Use the policy information to guide the development of a publishable analysis aimed at understanding the relationship between codified policy relevant to collaboration, multi/interdisciplinary research and teaching, and team science and the implementation and realization of policy through processes, practices, and perceptions

## **Initial Findings**

- Qualitative document analysis of the 33 policy excerpts received
  - Grounded theory approach, data marked with codes (open coding)
  - Codes were compared, contrasted, and sorted into larger themes (axial coding)
- Overarching Emergent Themes
  - Recognition of Team Science
  - Criteria for Evaluating Team Science
  - Process of Evaluating Team Science

## NIH CTSA Requirements, 2014



- CTSA hubs should advance team science and develop academic promotion criteria that help create a viable career path for translational scientists.
- Applicants should plan for ways to identify best practices in team science, and to disseminate successful models
  - This should include consideration on how team scientists will be evaluated in the academic promotion context.

### NIH CTSA Requirements, 2018

- CTSA Program hubs must advance team science and develop academic promotion criteria that help create a viable career path for translational scientists.
- The [CTSA] program focuses on widely appreciated systematic barriers including but not limited to:
  - Incentives/credit for team science
- Applicants should devise ways to identify best practices in team science, and to implement successful models.
  - A major obstacle to team science in academic health centers is the traditional promotion and tenure process, which is focused on individual accomplishment.
  - Therefore, applicants should describe how team scientists will be evaluated in the academic promotion process, as well as consideration of how such individuals will be professionally recognized and thus incentivized to engage in collaborations.

#### **National Team Science Report Recommendations**



#### UK AMS Report 2016

http://www.acmedsci.ac.uk/policy/ policy-projects/team-science/

11

http://www.cahs-acss.ca/academic-recognition-of-teamscience-how-to-optimize-the-canadian-academic-

system/

### **P&T Policy Recommendations**

#### AMS Report 2016 Recommendation 8

12

- Researchers should drive change through their crucial roles as team members, peer reviewers and participants on recruitment, promotion and funding panels.
- Ensure that credit is allocated fairly and transparently.
- Define clear areas of responsibility for all individuals involved at the outset in team science projects, and review these throughout.

# CAHS Recommendations ~ Help Review Committees Measure Team Science Contributions

- 7. Ensure that advancement, promotion, and tenure (APT) and funding criteria include explicit recognition of contributions to team science and collaborative activities.
- 8. Compose review committees that can knowledgeably and fairly assess team science contributions.
- 9. Train reviewers in the evaluation of individual contributions to research teams.

## **Contributorship Recommendations**

#### AMS Report 2016 Recommendation 1

- All research outputs and grants should include open, transparent, standardised and structured contribution information.
- Publishers should work with relevant initiatives, such as Project CRediT, and the research community to develop, pilot and evolve a standardised contribution information framework for publications.
- Funders should phase out any requirement for a 'lead' or 'principal' investigator, and list all applicants as 'co-applicants'.
- Researchers should be required to provide a statement describing the contribution of each coapplicant to the grant.

#### Project CRediT

- A high-level classification of the diverse roles performed in the work leading to a published research output in the sciences.
- 14 unique Contributor roles
- Purpose to provide transparency in contributions to scholarly published work, to enable improved systems of attribution, credit, and accountability, especially for team science

#### **Team Science Careers Recommendations**

#### NIH CTSA Requirement, 2014

 Consideration of enhancing the professional experience for all members of a multidisciplinary translational team, not only the lead researcher.

#### AMS Report Recommendation 10

 Clear career paths and development opportunities should be provided for researchers outside of the 'PI track' who play key roles in (and provide key competencies to) team science, such as skills specialists.

#### CAHS Report Recommendations ~ Adapt Culture and Behaviour to Team Science

- Promote a broader concept of scholarship and a more inclusive understanding of the complexity of team science.
- Acknowledge the critical contributions of "skills specialists" to team science and establish career paths for specialists to facilitate their advancement.