The Science and Practice of Team Science

A 'Bring Your Own Idea' Proposal

Proposed by:
Douglas Luke – Professor and Director, Center for Public Health Systems Science, Brown School
Andrew Knight – Associate Professor, Olin School
Bradley Evanoff - Richard and Elizabeth Henby Sutter Professor of Occupational and Environmental Medicine, School of Medicine

Description of topic:
Teams are now the primary drivers of scientific discovery and progress (Wuchty, et al., 2007), and scientific collaboration has supplanted the solitary scientist in her laboratory or behind her computer screen as the hallmark of scientific activity. The science of team science (SoTS) is a newly emerging discipline focusing on understanding and enhancing the conditions, collaborative processes, and outcomes associated with team science initiatives and successful scientific collaborations (Stokols, et al., 2008). Advancement in this field is important if we want to better understand how to turn society's investment in the research enterprise into new scientific discoveries, and in turn translate those discoveries into new practices, procedures, and policies that benefit communities and populations.

The proposed development workshop will bring together faculty and staff from across the campus who have interest and expertise in team science. The goal of the workshop discussions will be to design a training program on team science principles and practices that can be delivered to WU faculty, doctoral students, post-doctoral fellows, and research administrative staff.

Why this is important for WU:
WU medical, health, and behavioral science scholars have been at the forefront of the study of scientific collaboration, team development, mentoring and other team science research challenges (Dhand, et al., 2016; Joshi & Knight, 2015). Despite this scholarly work, current WU faculty, staff, and students do not have ready access to this knowledge, and no comprehensive training program exists focusing on team science. Furthermore, the Institute of Clinical and Translational Science at WU (Brad Evanoff, Co-PI) has a new Function focused on enhancing team science for the WU community (being led by Luke and Knight). A team science training program would be of interest to research faculty who are developing new research teams; to younger faculty and pre- or post-doctoral scholars who are learning how to develop effective research collaborations; and to WU research administrators who support and evaluate large-scale research initiatives. The accompanying table lists faculty and staff who we think have relevant skills and interest in team science, and who we would like to invite to help us develop the team science training program. Along with their names we list the team science domains that we think they would be particularly suited to lead discussion on.

Team Science Training Program Domains and Potential Participants

Domain	Participant
Science of Team Science as a discipline	Bradley Evanoff – School of Medicine, Director of ICTS
Transdisciplinary Science	Sarah Gehlert, Brown School
Team Diversity	Andrew Knight, Olin School
Communication	Matt Kreuter, Health Communication Research Laboratory, Brown School
Mentoring	Ross Brownson, Brown School
Teambuilding	Steve Miller, CMO of Express Scripts
Proprietary Rights	Nichole Mercier, Director of Office of Technology Management
Multidisciplinary Teams and Innovation	Emre Toker, Director of Skandalaris Center
Dissemination	Enola Proctor, Center for Dissemination and Implementation Research, Brown School
Evaluation of Collaboration	Douglas Luke, Center for Public Health Systems Science, Brown School
Careers	Bill Powderly, Institute of Public Health
Supporting and Rewarding Team Science	Aaron Bobeck, Dean of School of Engineering

References

Dhand, A., Luke, D. A., Carothers, B. J., & Evanoff, B. A. (2016). Academic cross-pollination: the role of disciplinary affiliation in research collaboration. *PloS one*, *11*(1), e0145916.

Joshi, A., & Knight, A. P. (2015). Who defers to whom and why? Implications of demographic differences and dyadic deference for team effectiveness. *Academy of Management Journal*, 58, 59-84.

Stokols, D., Hall, K. L., Taylor, B. K., & Moser, R. P. (2008). The science of team science: overview of the field and introduction to the supplement. *American journal of preventive medicine*, *35*(2), S77-S89.

Wuchty, S., Jones, B.F., & Uzzi B. (2007). The increasing dominance of teams in production of knowledge. *Science, 316,* 1036-1039.