



Knowledge that will change your world

# Teams: The Secret Ingredient for Innovation in the Sciences

## UAB Health Services, Outcomes, and Effectiveness Research (HSOER) Training Program

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@anthonyhood #teamscience #SciTs



Objectives: At the conclusion of this workshop, participants will be able to identify and describe:

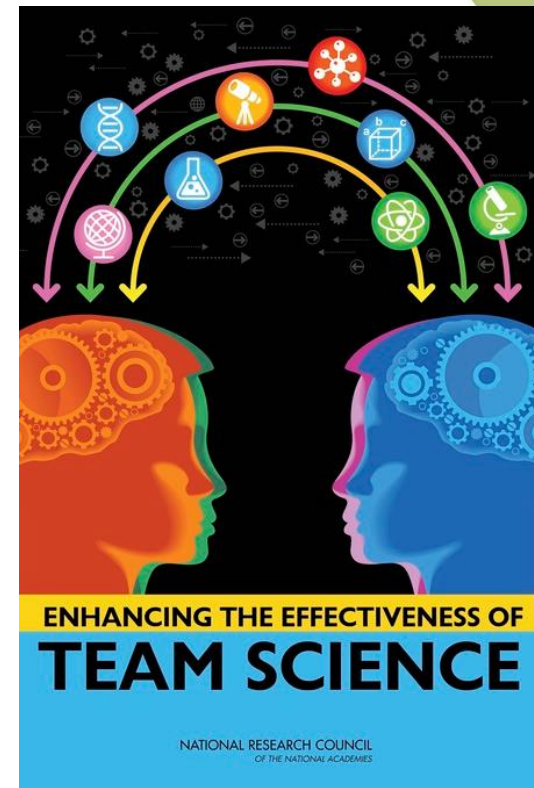
- Differences between
  - Teams and Groups
  - Creativity
  - Innovation
  - Entrepreneurship
  - Strategy
- Primary types of conflict in teams
  - Task
  - Relationship
  - Process

# What is a team?



# What is a team?

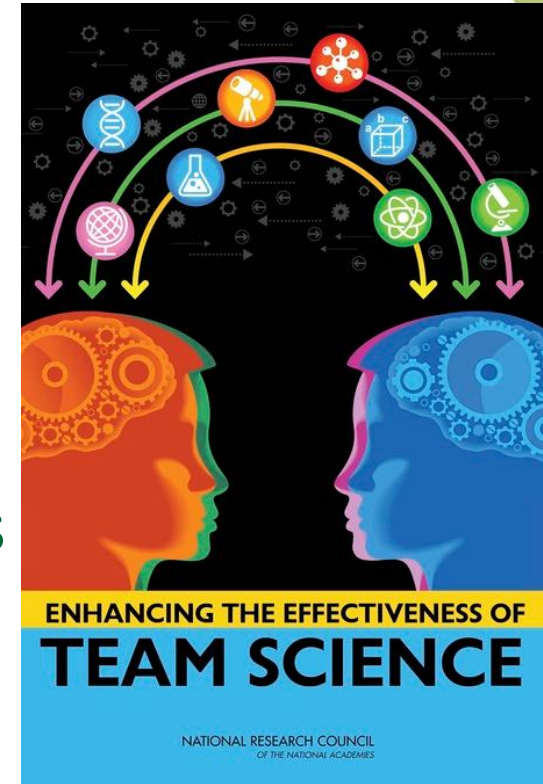
- **“Two or more individuals with different roles and responsibilities, who interact socially and interdependently within an organizational system to perform tasks and accomplish common goals”** (NAP report, p. Sum-1).



Committee on the Science of Team Science, Cooke, N., Hilton, M., Editors.  
[Enhancing the Effectiveness of Team Science](#). Washington, DC: The National Academies Press; 2015 Apr 24.

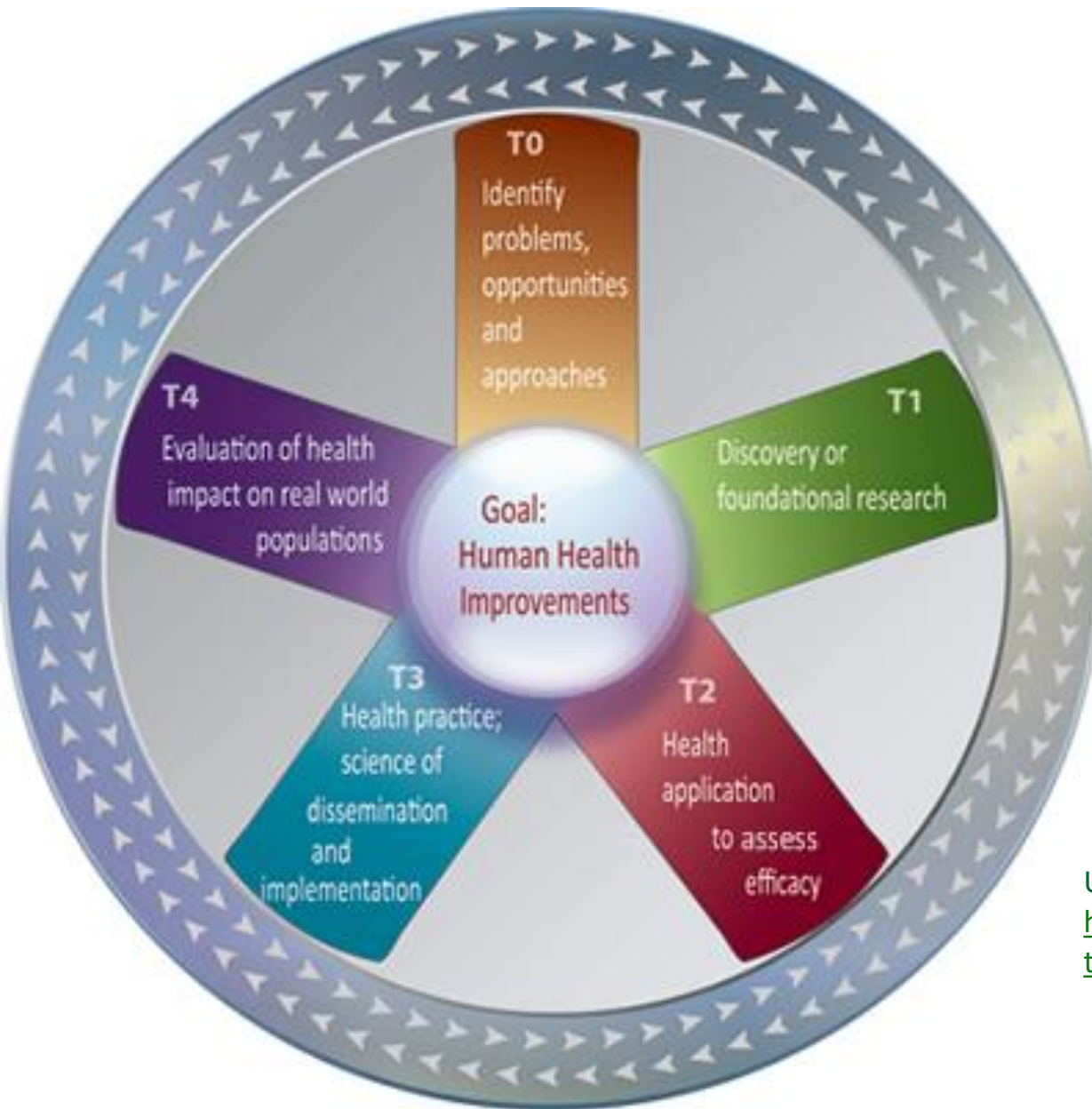
# Current trends in scientific research

- 90% of all science and engineering pubs are by 2 or more authors
- Most pubs authored by 6-10 researchers across multiple institutions
- Researchers are not always academics
- Team size continues to increase



Committee on the Science of Team Science, Cooke, N., Hilton, M., Editors.  
[Enhancing the Effectiveness of Team Science](#). Washington, DC: The  
National Academies Press; 2015 Apr 24.

# Translational Science Paradigm



U. Of Washington, T-Phases  
<https://www.iths.org/investigators/definitions/translational-research>

# Patient Centered Outcomes Research Institute (PCORI )



<http://www.theamericannurse.org/index.php/2012/04/02/supporting-research-with-patient-centered-outcomes/>

# Community-Based Participatory Research

Source: <https://ui.uncc.edu/story/geographers-doctors-and-community-members>

CBPR  
Framework



Source: <http://cssr.gmu.edu/cssr-capabilities/community-based-participatory-research>



# The Business of Teamwork

## Team-Based Creativity

- The *exchange* and *combination* of *divergent* yet *complementary* bits of information between 2 or more team members that produces something that is both *novel* and *potentially useful* (Amabile, 1983; Amabile et al., 1996; Gino et al., 2010; Nahapiet & Ghoshal, 1998)

## Team-Based Innovation

- Implementation of a novel or useful discovery or product (Hulsheger et al., 2009)
- Translation (taking action to move and transform the idea from one phase to another)

# The Business of Teamwork

## Team-Based Entrepreneurship

- Opportunity-seeking behavior.
- Commercialization. Tech transfer. Start-up activity. University spin-offs. Intellectual property. Licensing. Patent protection. Business incubation.
- Income generation. Profit maximization. Wealth creation.

## Team-Based Strategy

- Advantage-seeking behavior.
- How to out-perform and out-compete others. (e.g. Ireland, Hitt and Simon, 2003)
- Sustainability. Long-range planning.

# What is conflict?



# 3 Primary Sources of Conflict

## Task conflict

- Ideas, viewpoints and opinions (Jehn, 1995)

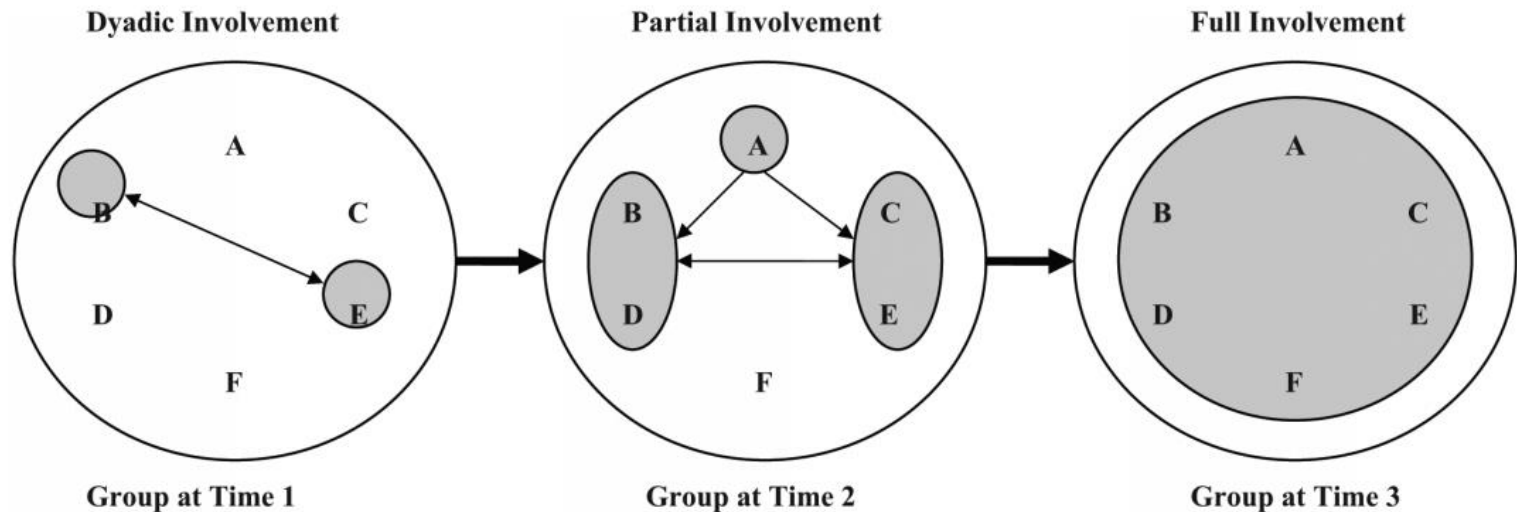
## Relationship conflict

- Interpersonal incompatibilities, annoyance, frustration (Jehn, 1995)

## Process conflict

- Task delegation, resource allocation, workload sharing (Jehn & Bendersky, 2003)

# Conflict can be *Contagious*



## Mechanisms for Conflict Contagion

### Conflict Dynamics

Resolution Potential	High
Competitive Tactics	Moderate

### Outcomes

Performance	High
Efficiency	High
Creativity	High
Turnover	Low
Satisfaction	Moderate

Coalition Formation  
Emotional Contagion  
Threats to Outcomes

Low  
High

Moderate  
Low  
Moderate  
Moderate  
Low

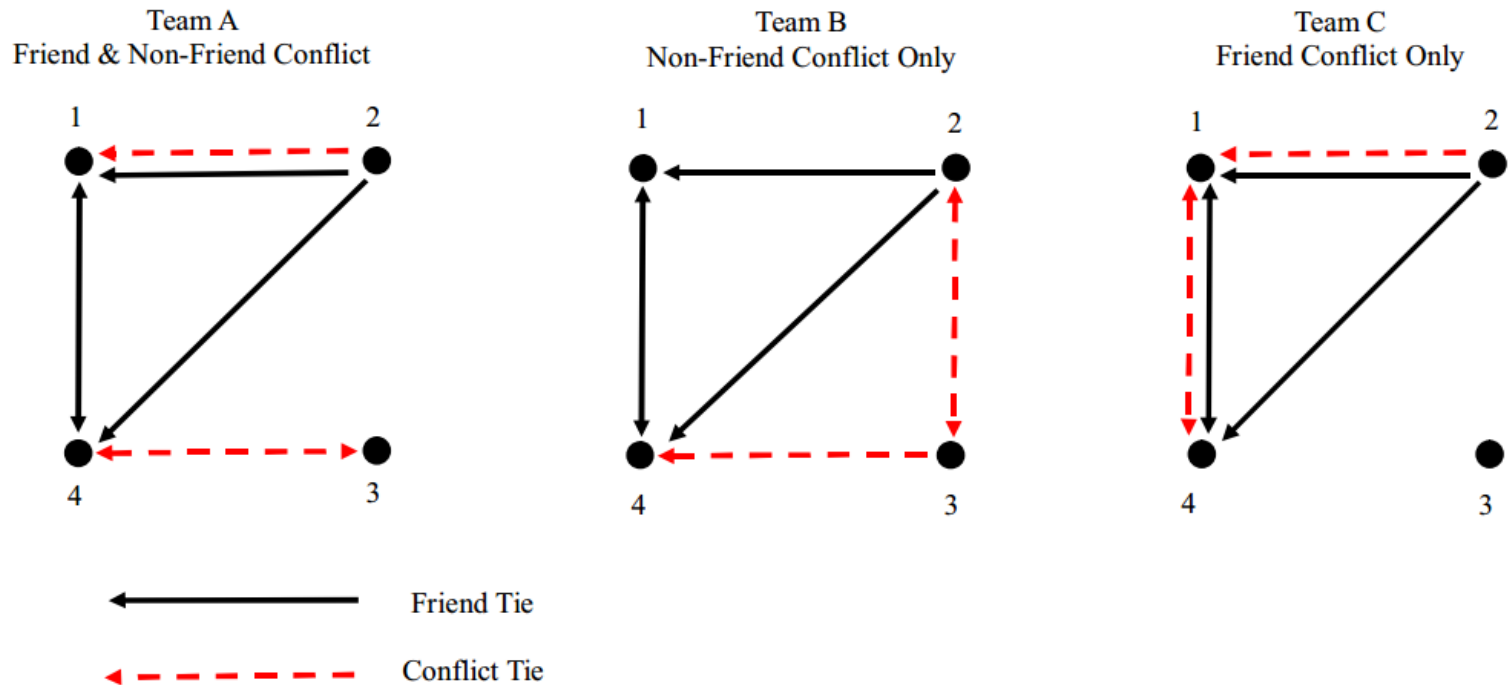
Coalition Formation  
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Low  
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Low

Jehn, K., Rispens, S., Jonsen, K., & Greer, L. (2013). Conflict contagion: a temporal perspective on the development of conflict within teams. *International Journal of Conflict Management*, 24(4), 352-373.

# Conflict can be *Multiplex*



**Fig. 1** Illustration of the multiplex view of friendship and conflict in teams

Hood, A. C., Cruz, K., & Bachrach, D. G. (2016). Conflicts with friends: A multiplex view of friendship and conflict and its association with performance in teams. *Journal of Business and Psychology*. doi:10.1007/s10869-016-9436-y

# Psychological Safety in Teams

- “In the context of teams, psychological safety (PS) refers to team members’ assessment that the team’s environment is safe for interpersonal risk-taking (Edmondson, 1999).”
- “PS influences willingness to engage in potentially threatening behaviors, such as many of those associated with creativity and learning in groups.”

Hood, A. C., Bachrach, D. G., Zivnuska, S. and Bendoly, E. (2015) Mediating effects of psychological safety in the relationship between team affectivity and transactive memory systems. *Journal of Organizational Behavior*.  
<http://dx.doi.org/10.1002/job.2050>.

# Psychological Safety (Edmondson, 1999; Edmondson & Lei, 2013)

Do team members feel comfortable engaging in potentially risky interpersonal behaviors such as:

- Admitting errors
- Asking for help
- Speaking up
- Challenging/Questioning/Vetting

Without concern for:

- Devaluation, distortion or discounting of expertise
- Rejection



# Transactive Memory Systems (TMS)- Mental Model of Tasks, Expertise and People

Tasks	Expertise	People

Brandon, D. P., & Hollingshead, A. B. (2004). Transactive Memory Systems in Organizations: Matching Tasks, Expertise, and People. *Organization Science*, 15(6), 633-644.  
doi:10.1287/orsc.1040.0069

# Transactive Memory Systems (TMS)- Mental Model of Tasks, Expertise and People

Tasks	Expertise	People
Grantsmanship	??	Susan
Data analysis	Biostats	??
Comm Organizing	Church Leader	??
??	Health Disparities	Karen
Publish	??	John
Health Screenings	Clinician	Chris
Qualitative Surveys	CBPR	??

Brandon, D. P., & Hollingshead, A. B. (2004). Transactive Memory Systems in Organizations: Matching Tasks, Expertise, and People. *Organization Science*, 15(6), 633-644. doi:10.1287/orsc.1040.0069

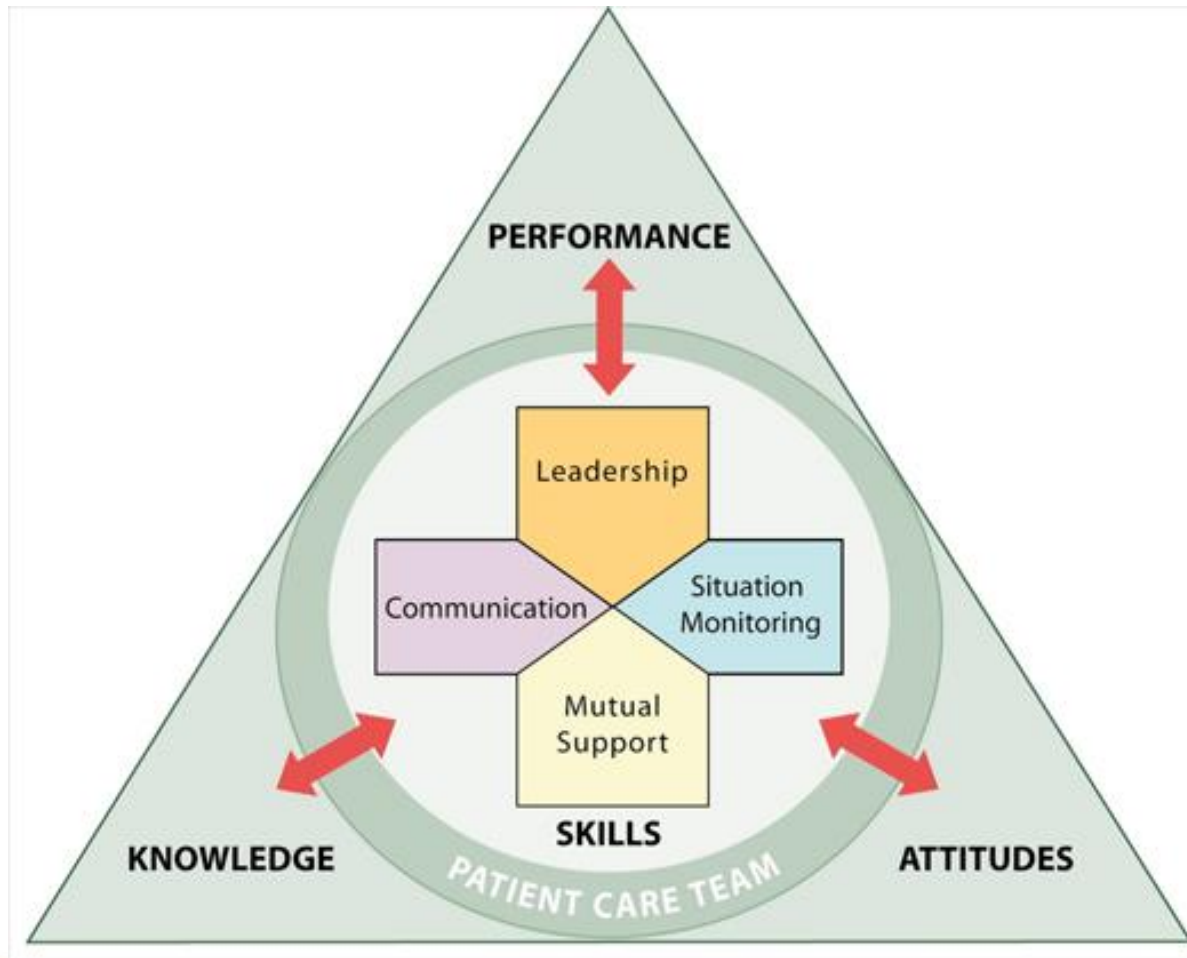
## For Discussion/Next Steps

- What are you going to do differently as a result of this information?
- Can conflict be avoided?
- How can you create a psychologically safe team environment?

# Questions?



# Agency for Healthcare Research and Quality (AHRQ) TeamSTEPPS®: Strategies and Tools to Enhance Performance and Patient Safety



# UAB Office of Interprofessional Simulation for Innovative Clinical Practice



**UAB** INTERPROFESSIONAL SIMULATION  
FOR INNOVATIVE CLINICAL PRACTICE

# UAB Office of Interprofessional Simulation for Innovative Clinical Practice

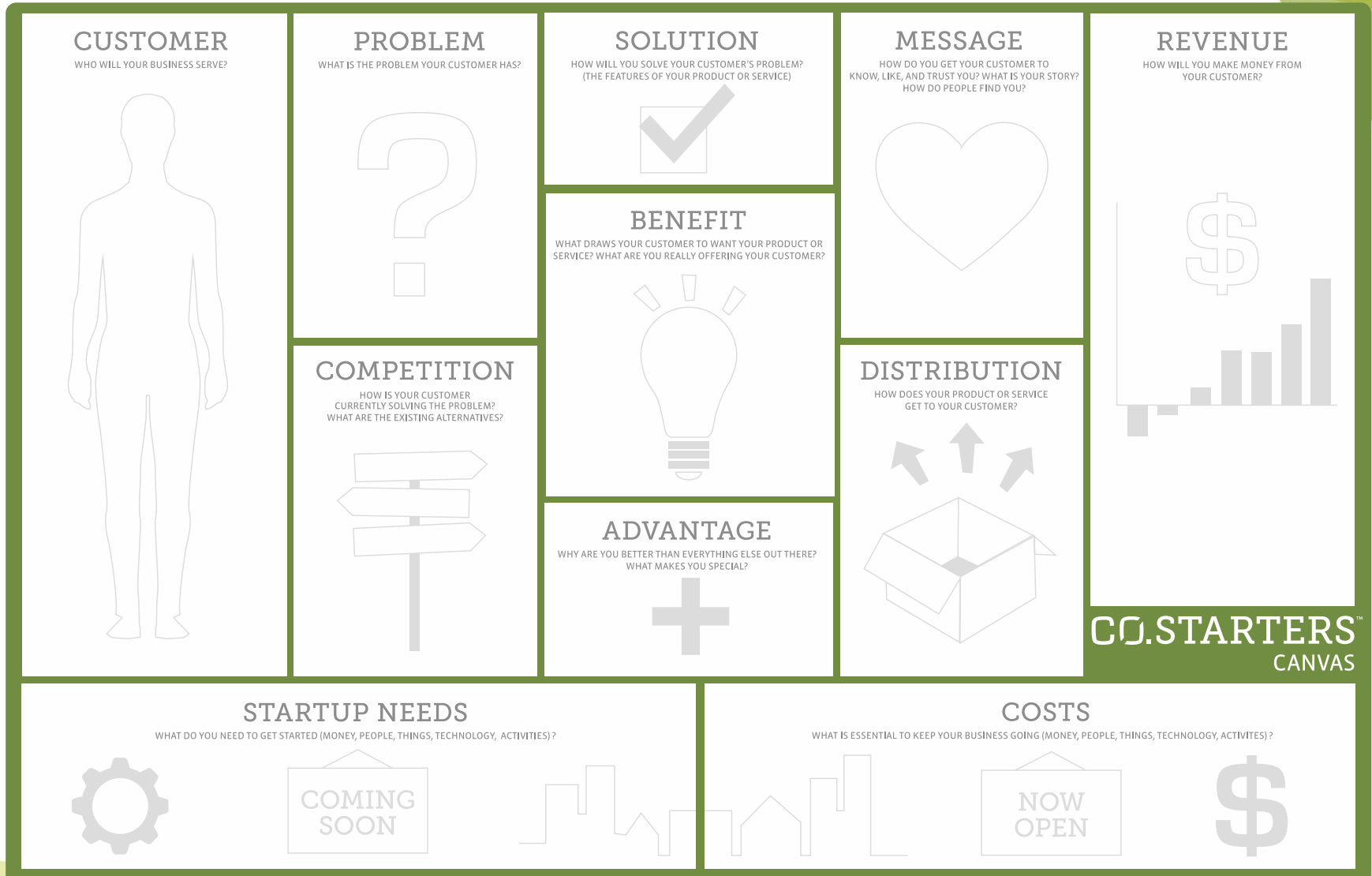


# NSF Innovation Corps and I-Corps™ at NIH

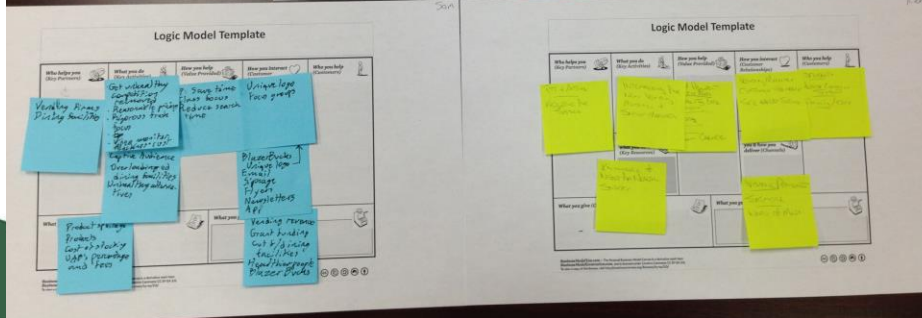
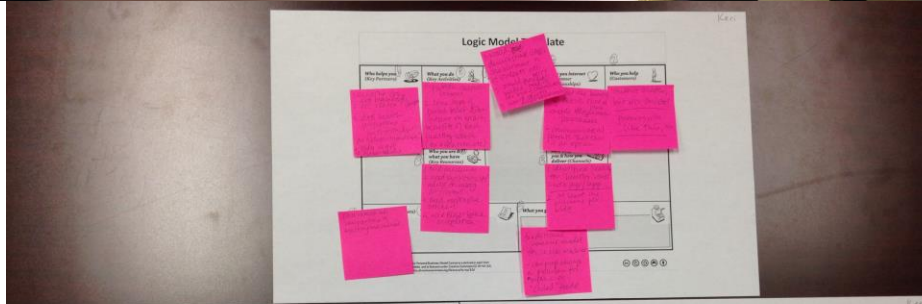




# Business Model Canvas: A Tool for Teams



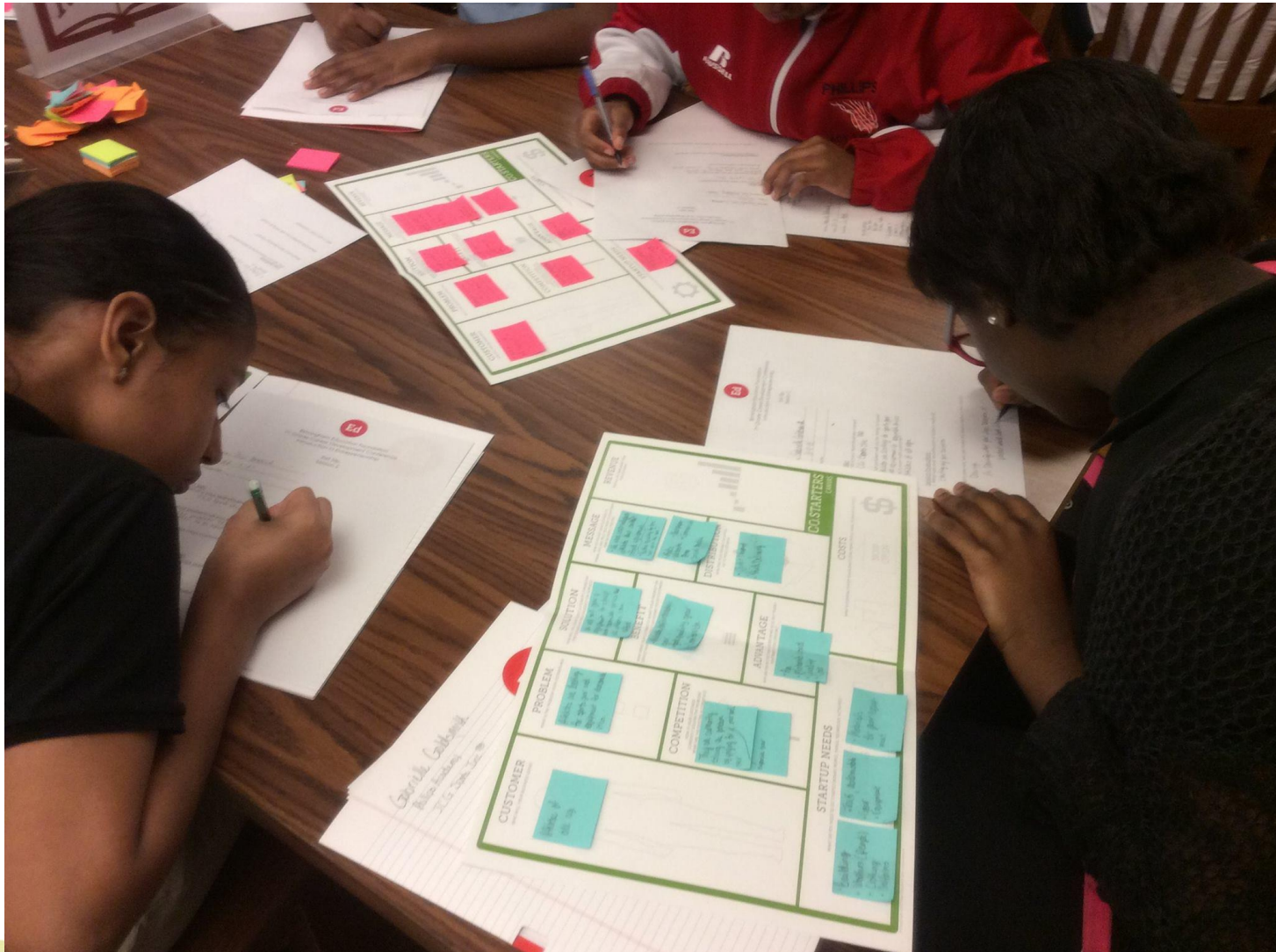
# Business School Faculty



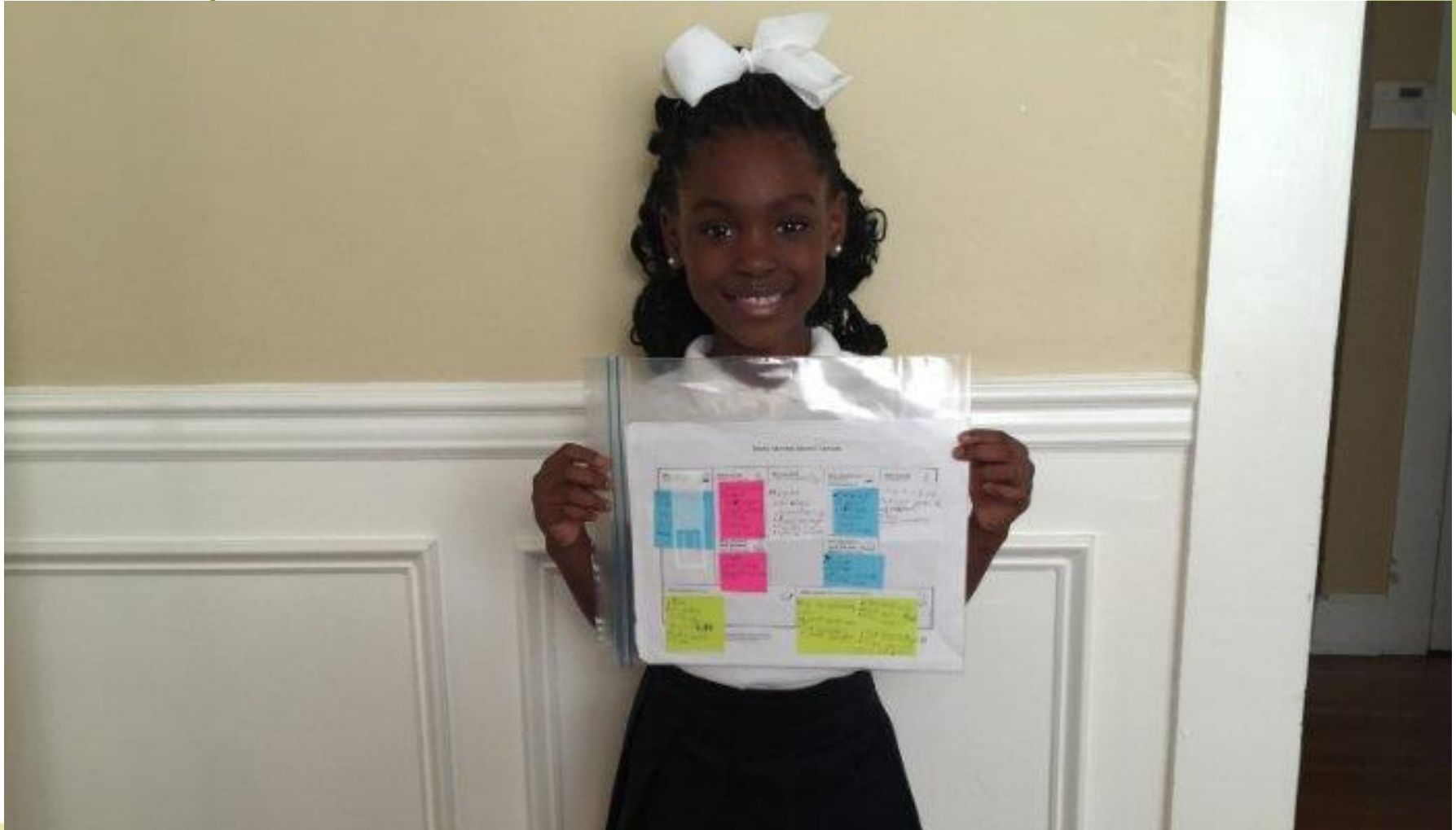
# Research Coordinator Training



# 8<sup>th</sup> Graders Innovating at Phillips Academy



# Daddy's Pooh Pooh (Web-Based Morning Show for Kids)



<https://www.linkedin.com/pulse/what-my-7-year-old-taught-me-entrepreneurship-anthony-c-hood-ph-d?trk=prof-post>