

# A Team Science Approach to Mentoring: Building Stronger Mentor-Mentee Relationships



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# Conflict of Interest

*I have nothing to disclose*





**SHARE**

What: TEAM Science



**EXPLORE**

TEAM Science VS. Mentoring



**DISCUSS**

Mentoring TEAM  
Mentoring Network



Think about the teams you have been on both successful and unsuccessful.

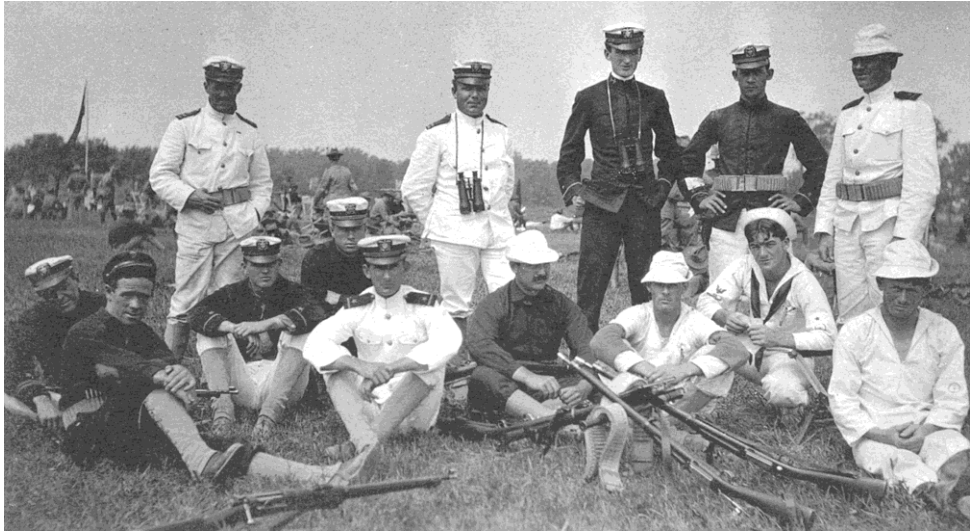
Describe in one word :

What made the team(s) successful?

What made the team(s) unsuccessful?



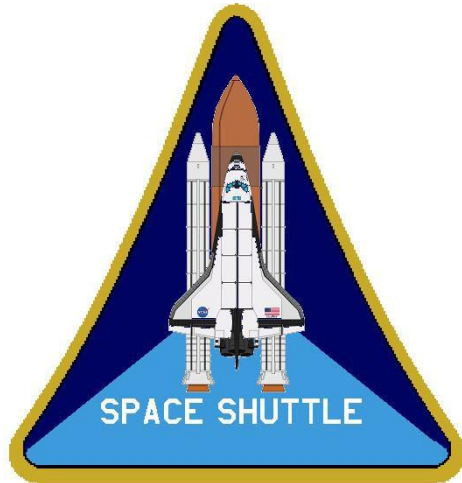
# TEAMS & TEAM EFFCETIVENESS



*Dalenberg et al. 2009*



*Hughes et al., 2016*



*Salas et al., 2015*



*McEwan & Beauchamp, 2014*



*Littlepage et al., 2016*



# What is Team Science?

Definition: **integration** of two or more scientific approaches to solve a **complex, multifaceted** problem

It is a **collaborative effort to** address a scientific challenge that leverages the strengths and expertise of professionals trained in different fields.

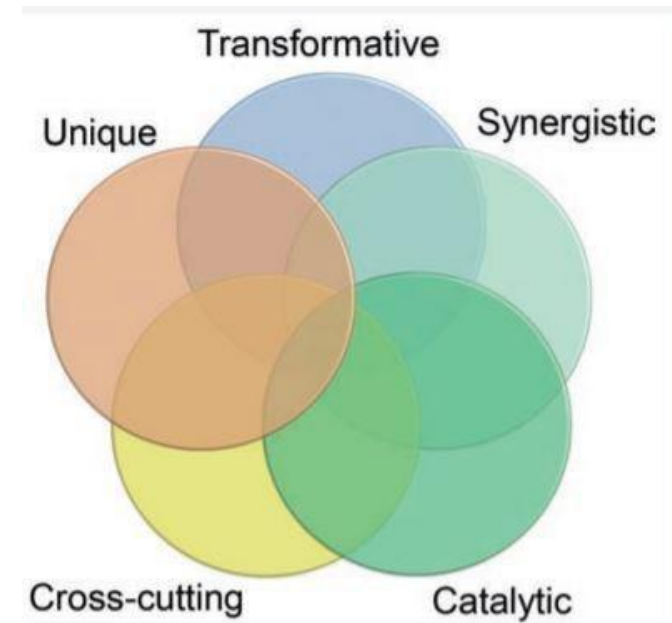


# *NIH Roadmap Initiative*

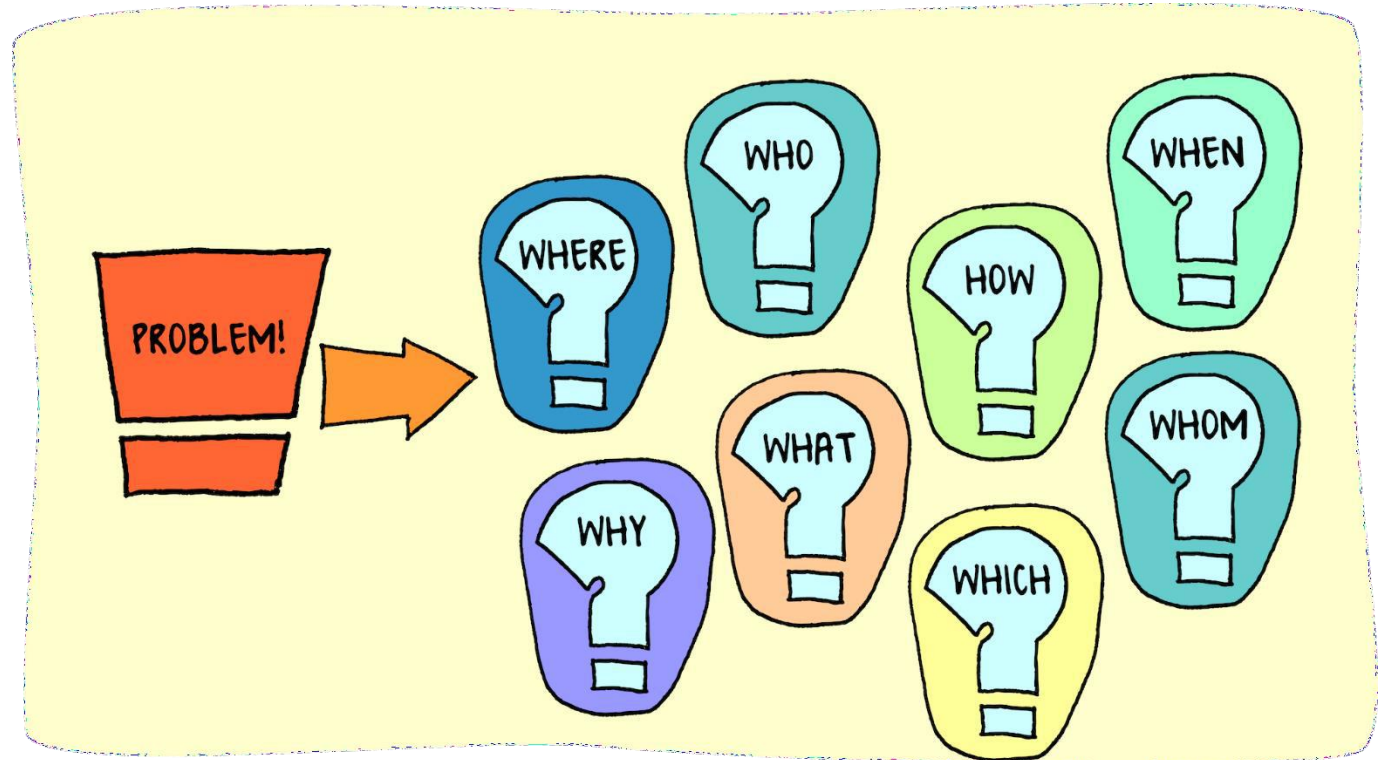
What novel approaches can be developed that have the potential to be truly transforming for human health?

*NIH Roadmap Initiative 2005*

- New Pathway of Discovery
- Research Teams of Future**
- Reengineering clinical Research enterprise

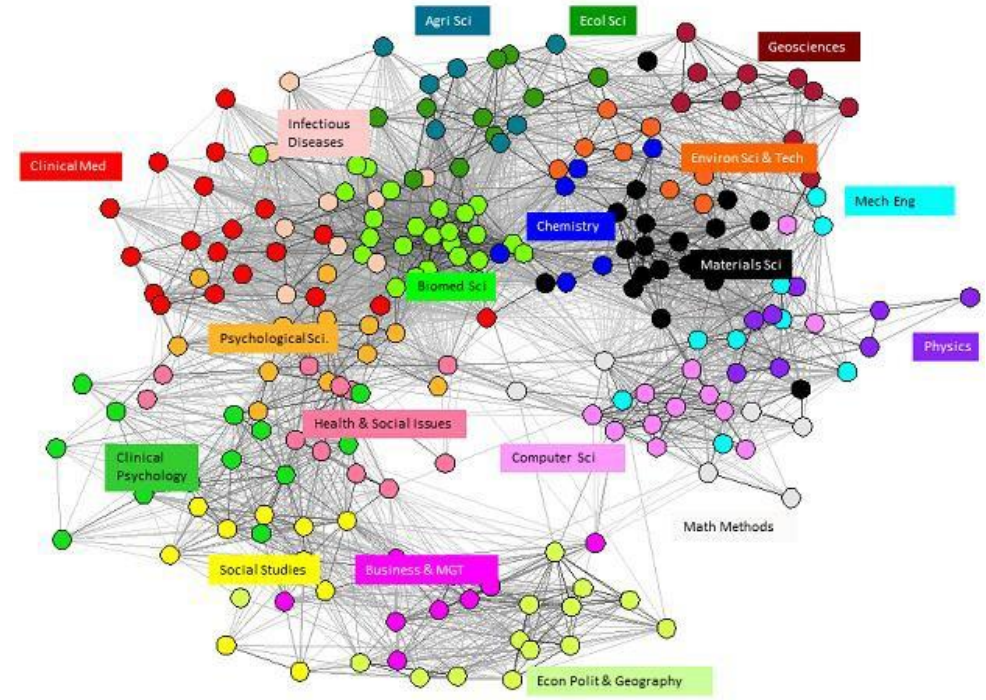
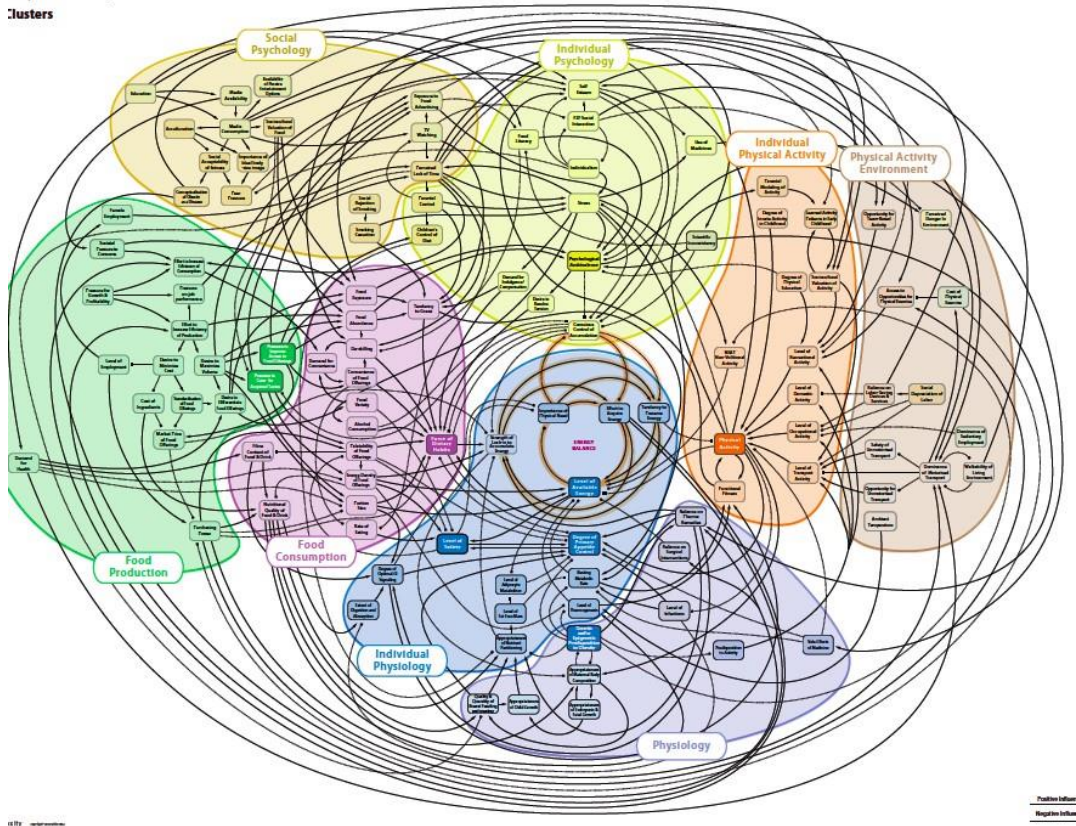


# Why Team Science ?





# Why Team Science ?



Know your Network !!!!

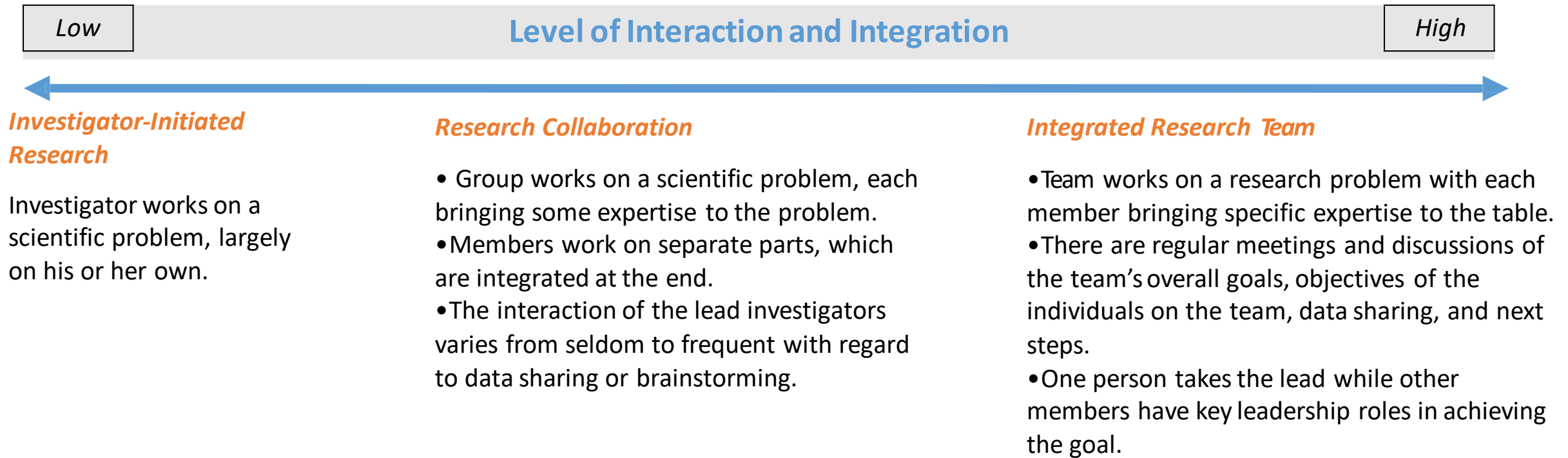
researchers; endocrinologists; pediatricians; internists; surgeons;  
exercise physiologists; nutritionists; behavioral researchers;  
psychologists economists—to name just a few types of specialists

[www.ScienceTranslationalMedicine.org](http://www.ScienceTranslationalMedicine.org) 10 March 2010 Vol 2 Issue 22 22cm9  
<https://www.teamsciencetoolkit.cancer.gov/public/expertBlog.aspx?tid=4&rid=1570>  
NIH Roadmap is available at: <http://nihroadmap.nih.gov/>.



# What is a Scientific Research Team?

.....think of it as a continuum.....



# Scientific Research Team

.....think of it as a continuum.....

Low

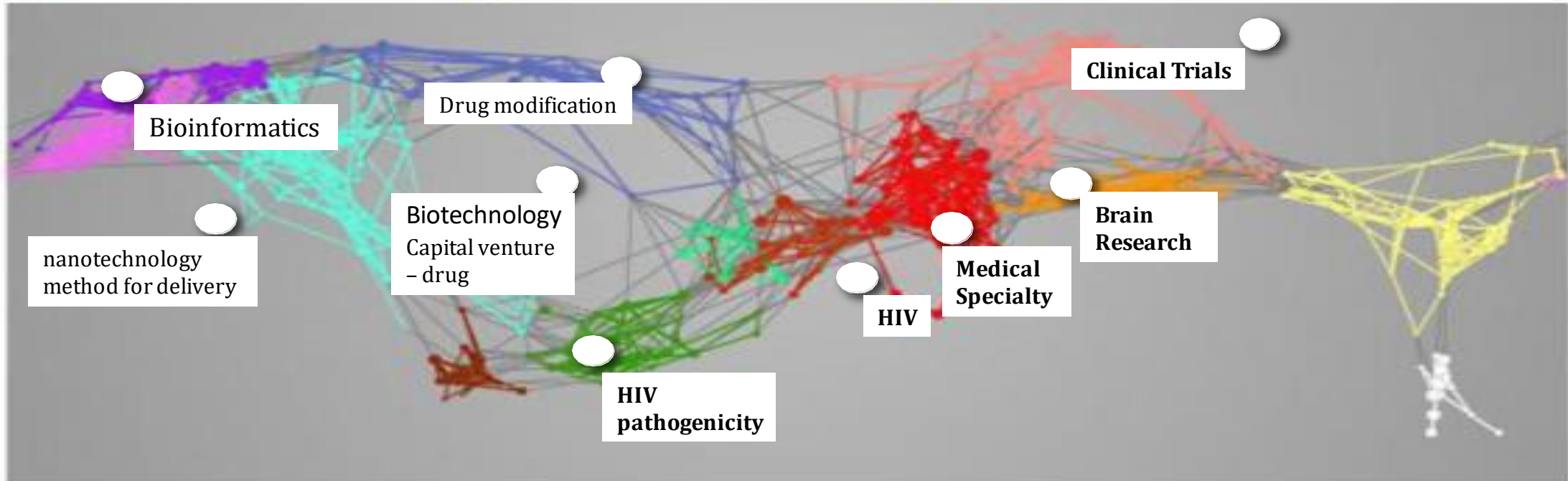
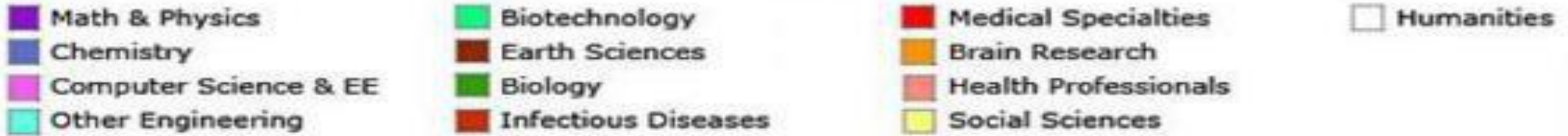
High

*Investigator-Initiated Research*

*Collaboration*

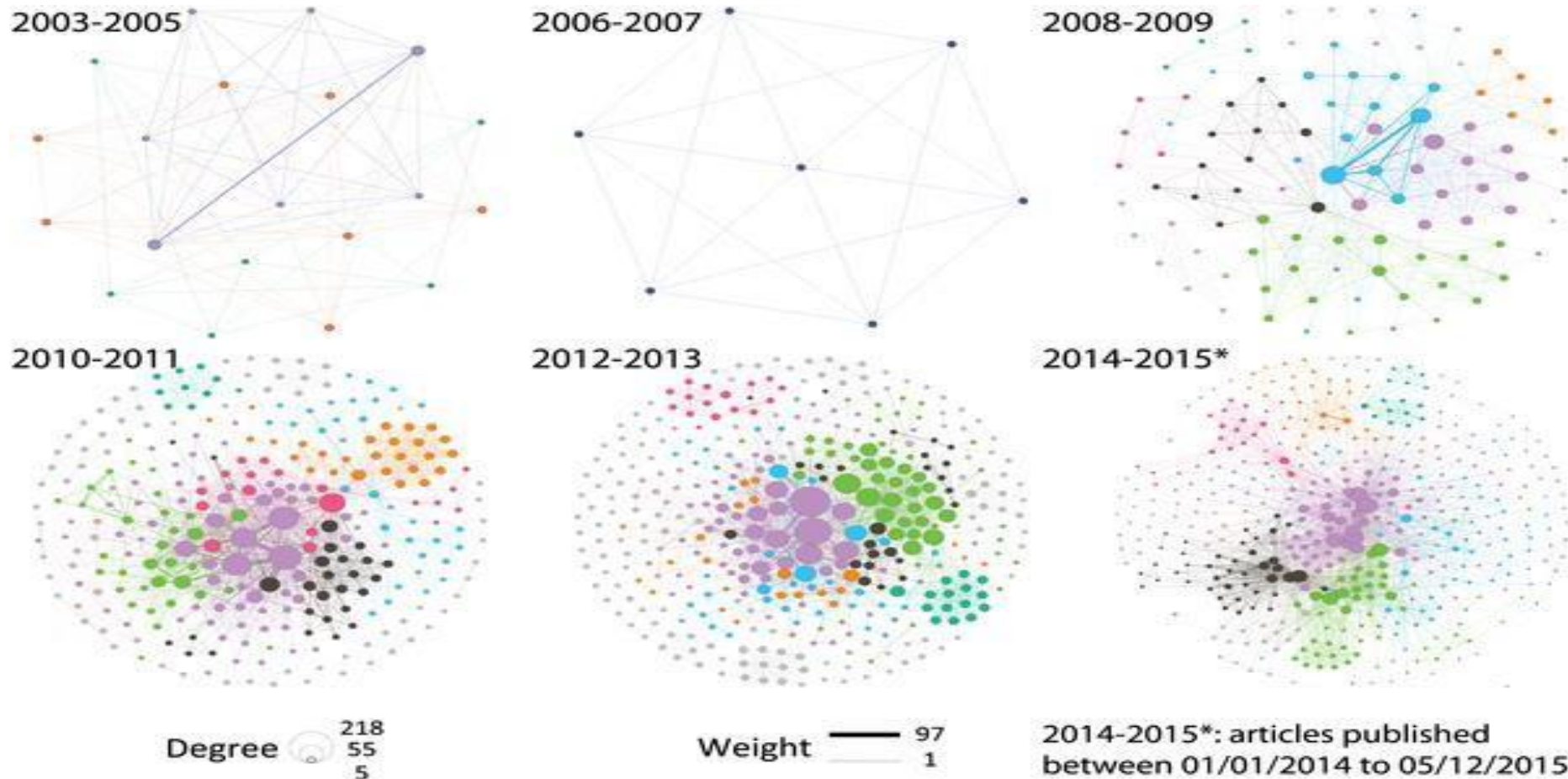
*Integrated Research Team*

The following color coding is used for the disciplinary map:



# Teams produce more highly cited research & patents than individuals.

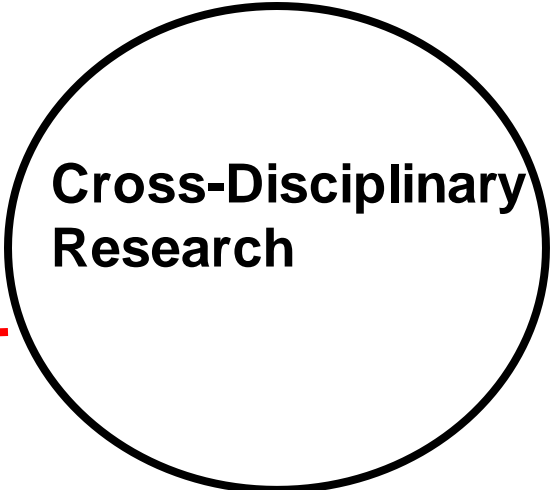
Mapping longitudinal scientific progress, collaboration, and impact of the Alzheimer's disease neuroimaging initiative growth of co-publication networks over time.



# Team Science

*What makes them work?*

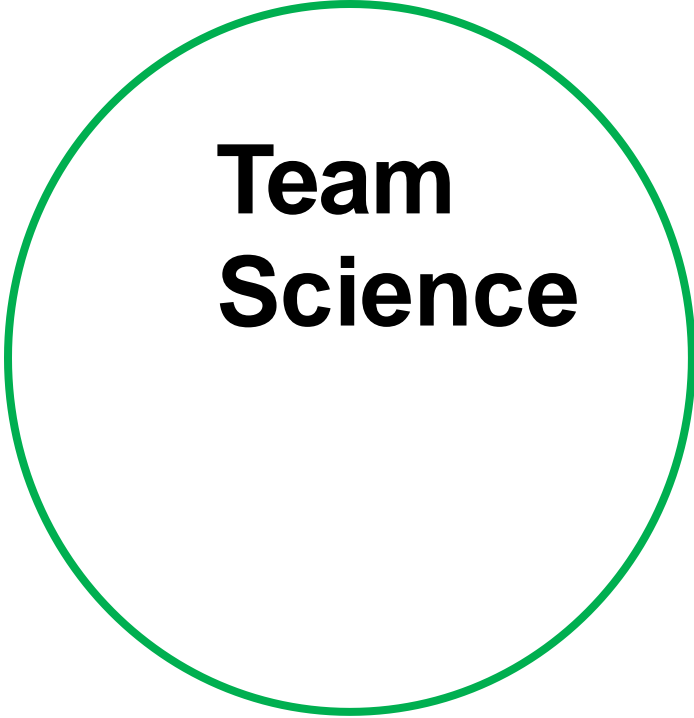
The study of collaborative processes grounded in scientific collaborations  
**The Science-of- Team-Science**



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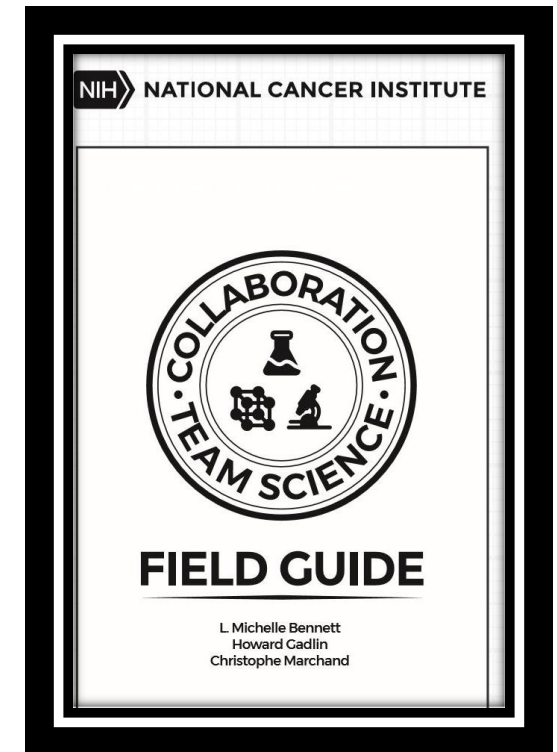
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# Characteristics of an Effective Team

- Self- and other-awareness
- Trust is established among team members
- Strategies developed for communicating openly
- Setting shared expectations and defining roles and responsibilities
- Creating, sharing, and revisiting a shared vision
- Making provisions for appropriate recognition and credit
- Promoting disagreement while containing conflict
- Learning each others' languages
- Enjoying the science and the work together





# *Key Team Science Concepts You Can Use Today*

- Bring together diverse backgrounds and experiences
- **Clarify** roles, responsibilities, and contributions
- Define milestones and success
- Develop an **environment of openness**
- Establish a schedule of meetings
- **Discuss** processes for sharing data and managing authorship
- **Prepare** for disagreements
- Have a policy for bringing on new members





# Definition of Mentoring

“Mentoring is a dynamic, \_\_\_\_\_ relationship in which a Mentor and Mentee agree to a partnership and work \_\_\_\_\_ to achieve mutually defined goals to facilitate a Mentee’s professional \_\_\_\_\_ and \_\_\_\_\_.”

*Zachary, Fischler & Healy<sup>1, 2</sup>*



# Mentoring

- A *mutually beneficial, collaborative learning relationship* that has the primary goal of helping mentees acquire the essential competencies needed for success in their chosen career. Using one's own experiences to guide another person through an experience that requires personal and intellectual growth and development

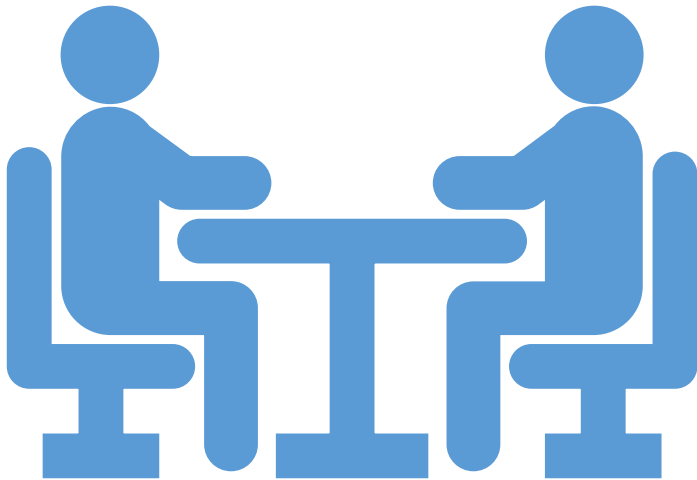
***(National Research Mentoring Network)***

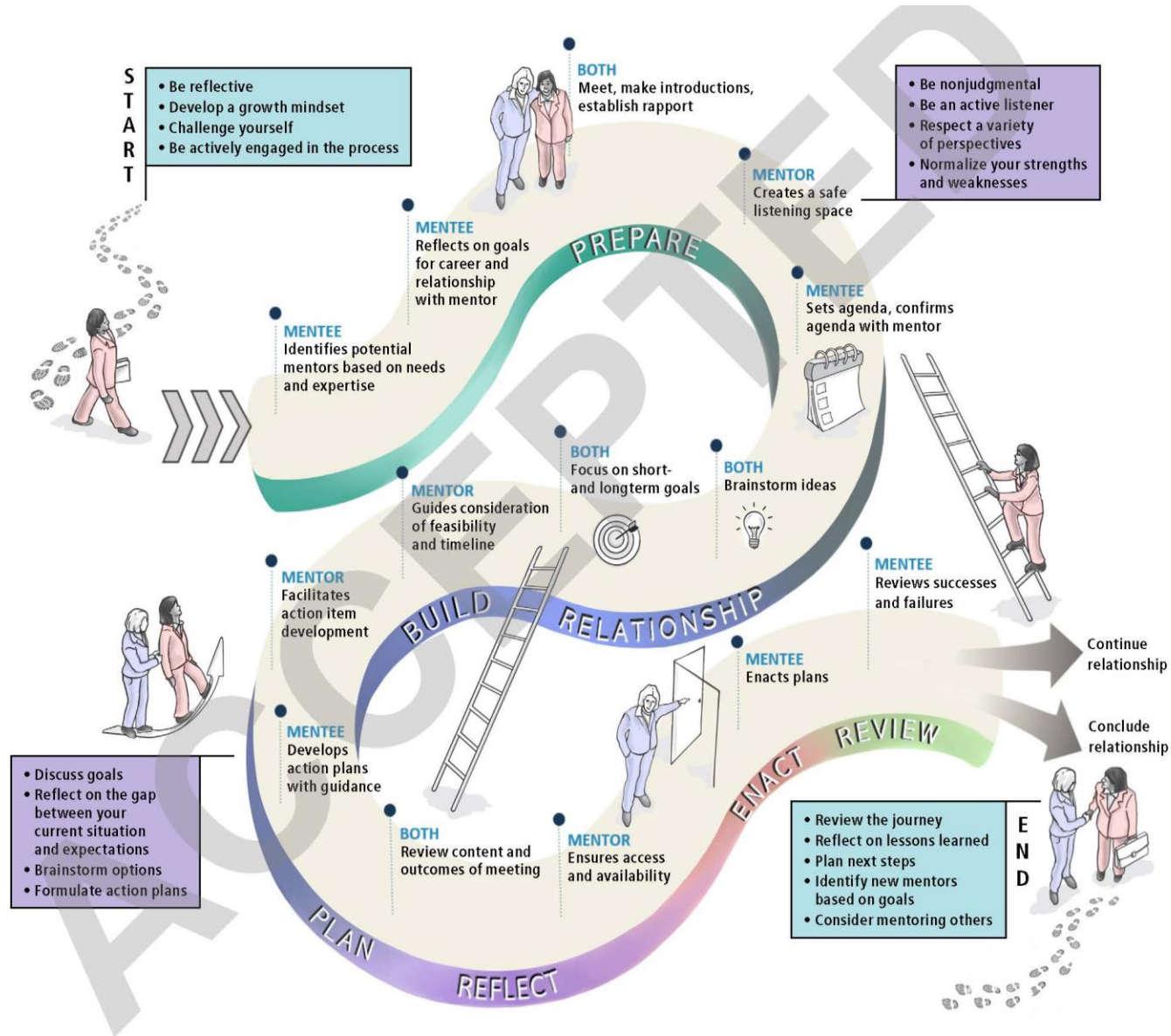


R

*Describe an effective mentoring relationship. What characteristics led to the success?*

Quick-Start Activity:  
Appreciative Inquiry in Pairs

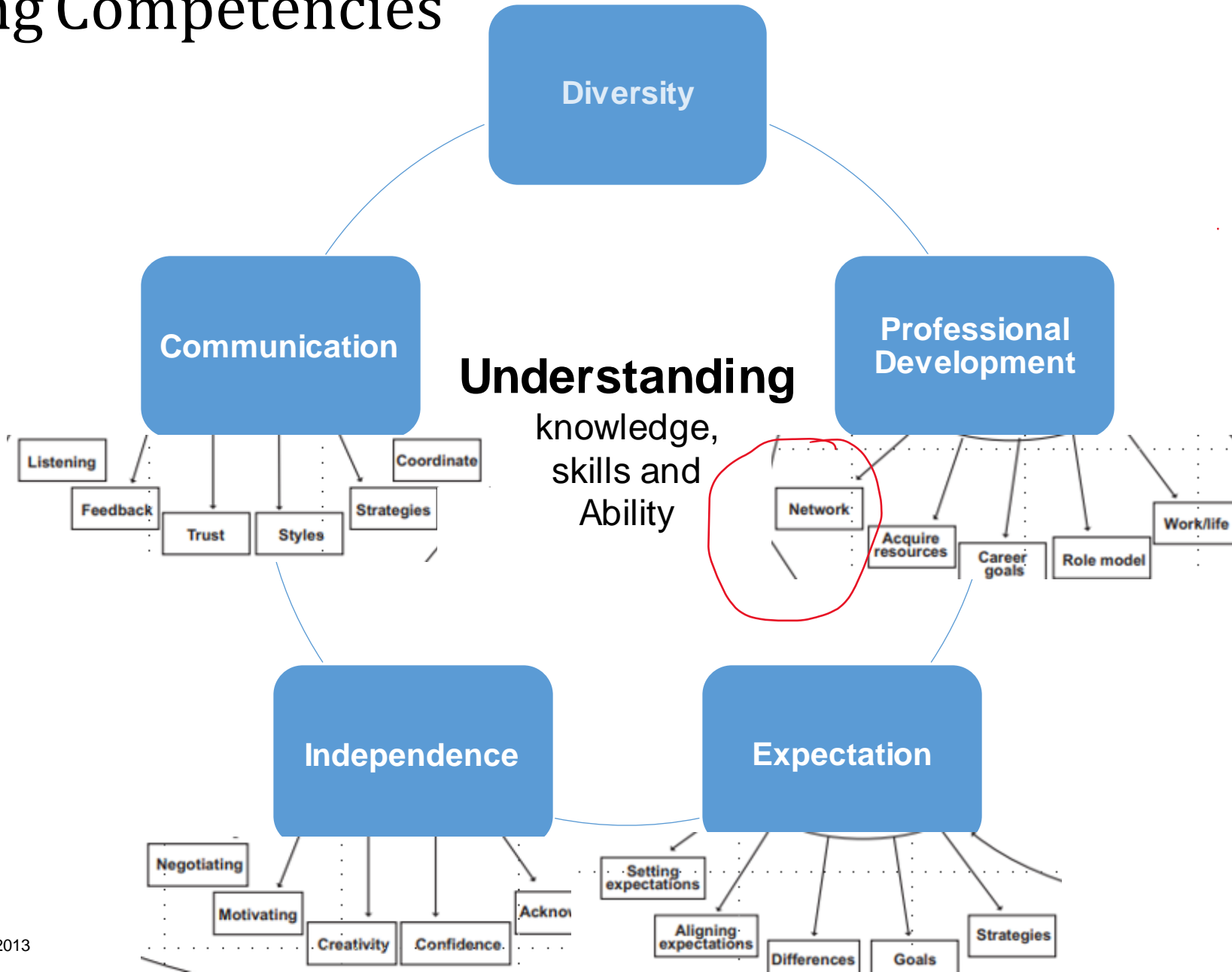




The stages and steps in the figure are suggestions and not rules; different dyads/groups may choose which steps are applicable to their mentoring relationships.



# Mentoring Competencies



# Developmental Mentoring Network

- Dyadic (Single Mentor-Mentee pair) and Hierarchical (Senior mentor to Mentee) Framework to Developmental Network (DN)
- DN emphasizes the importance of the relationship with people who help work done, and help advance one's career, and provide personal support
- DN may include traditional, scholarly research mentors, peer mentors, e-mentors, colleagues, junior mentees, and family Friends (Who provide knowledge, opportunities, and resources across institutions and cultures).
- 



# *Traditional mentoring Vs. Developmental mentoring network*

## **Beyond One-on-One**

How the network model of mentoring compares with the traditional model

	TRADITIONAL	DEVELOPMENTAL NETWORK
<b>Mentor</b>	Individual	Group
<b>Role of Mentor(s)</b>	Expert passing on knowledge	Co-learners sharing knowledge
<b>Relationship(s)</b>	Hierarchical Stable Within the organization	Hierarchical and peer Changing Inside and outside the organization
<b>Individual Outcomes</b>	Enhanced performance, career accomplishments and satisfaction; career advancement	Enhanced performance, learning, self-awareness, social skills and leadership capability
<b>Organizational Outcomes</b>	Enhanced performance and retention	Enhanced performance, retention, organizational learning, innovation and leadership capacity



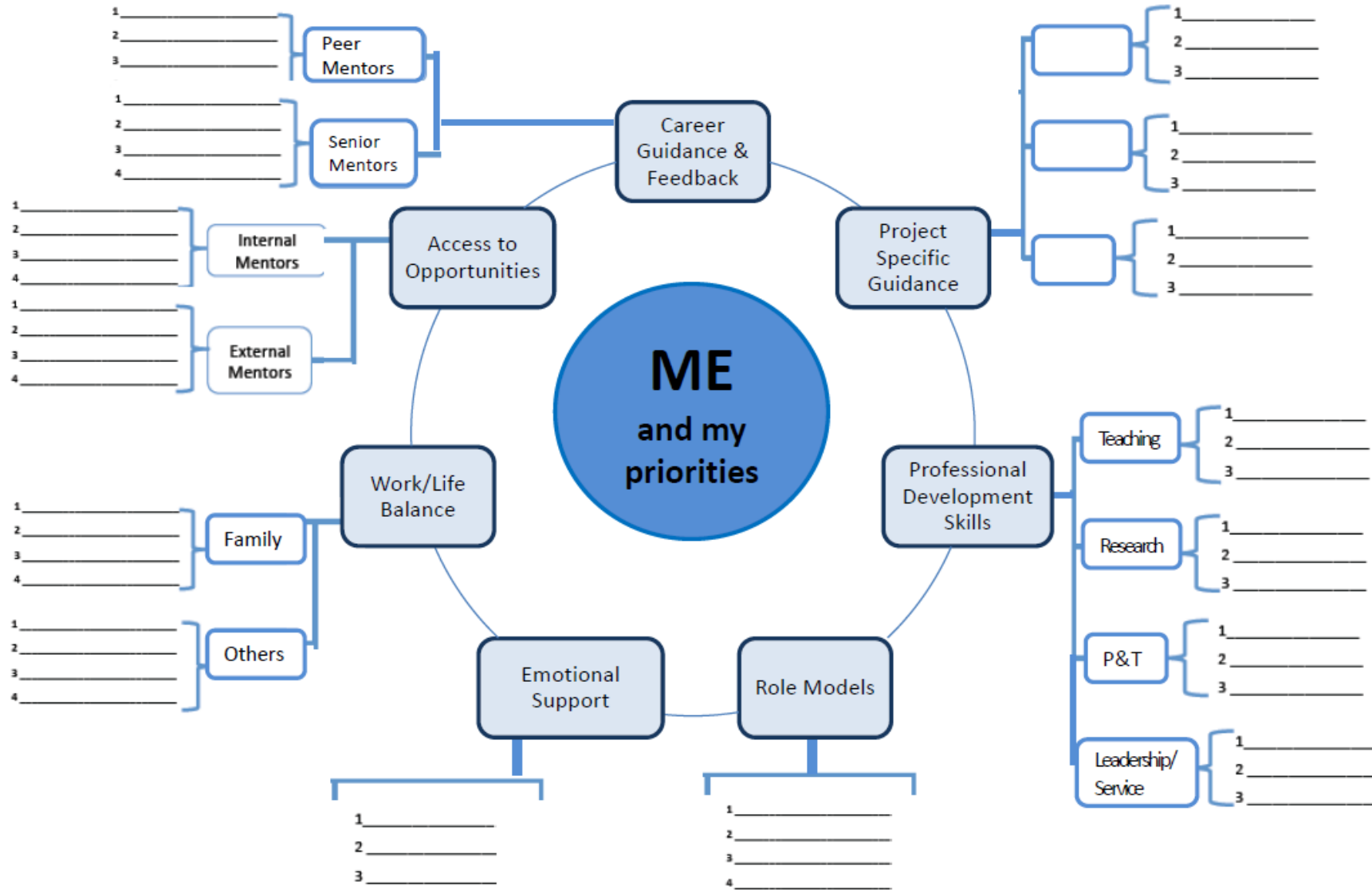
# Steps you need to take to develop your own developmental network

1. **Know Thyself**
2. **Know Your Context**
3. **Enlist Developer**
4. **Regularly Reassess**
5. **Develop Others**





# My Mentoring Network



Adapted 2012 from: <https://advance.cc.lehigh.edu/mentoring-network-map>

Date: \_\_\_\_\_

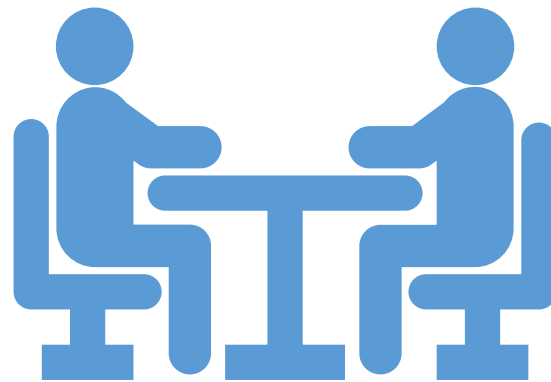


# Analyze Your Mentoring Network

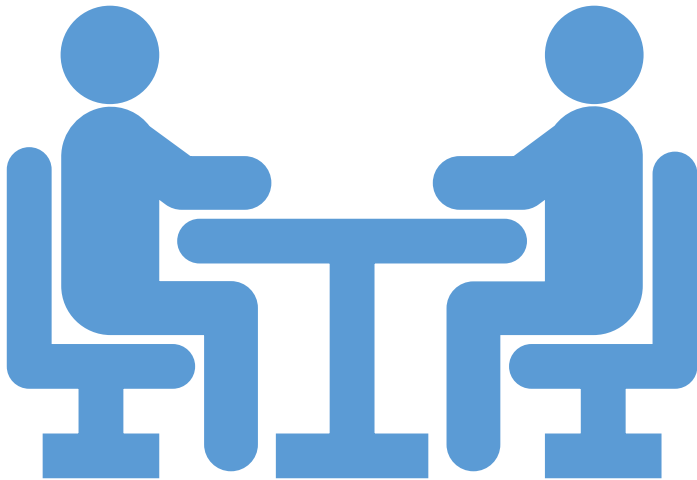


# Analyzing your Network

Research demonstrates that networks vary in structure, content, and quality of relationships. Answer the following questions in order to better understand the potential value and limitations of your current network and discuss the strengths, limitations and steps you can take to overcome the limitations of your network with your partner.



# Analyzing Your network



- Diversity.** How similar or different are these individuals (in terms of gender, race, function, geography, organizations) to each other and to me?
- Redundancy.** How much overlap is there?
- Interconnectivity.** How closed is the network in the sense that most of the people know each other?
- Strength of Connection.** What is the spread of people in terms of closeness and distance?
- Balance.** Is your network balanced or in danger of tipping?
- Connections to Power and Influence.** How many would you characterize as influential in the department or hospital or field?

# Mapping your Mentoring Network



# Mapping your Mentoring Network

1. Identify individuals in your developmental network, i.e., those who fall into one or more of the following three types of relationships. (Those who fall into more than one type should be listed more than once.)
  - People who help you finish the job (providing important information, introductions, scientific or technical advice, professional expertise, or other resources).
  - People who advance your career (through career guidance and direction, arranged exposure to critical people, political advice, helping you get important opportunities or assignments, advice on promotion criteria or funding opportunities, and/or advocating for you).
  - People who give you personal support, e.g., those to whom you go for your emotional well-being and psycho-social support and with whom you can be yourself.
2. Use your completed chart to create your developmental network map.



# Team science and Mentoring

1. **Collaboration and Interpersonal Dynamics:** Both settings require strong interpersonal skills and effective communication. Collaboration is central, This collaboration fosters an environment of mutual respect and shared learning.
2. **Knowledge Sharing and Learning:** Team science involves sharing diverse expertise among team members, while in mentor-mentee relationships, mentors share their knowledge and experience with the mentee. In both cases, all have opportunities to learn and grow
3. **Goal-Oriented Approach:** Both team science and mentor-mentee relationships are driven by specific goals. In team science, the goal is usually project-specific, aiming to solve a research question or develop a new product. In both cases, achieving these goals requires planning, commitment, and often, a structured approach.
4. **Feedback and Adaptation:** Continuous feedback is essential in both settings. In team science, feedback helps align team efforts and refine strategies. In mentor-mentee relationships, feedback from the mentor aids the mentee's growth and development. Both rely on an iterative process of receiving and acting on feedback.
5. **Networking and Relationship Building:** Both environments provide excellent opportunities for networking and building professional relationships. Team science often involves working with a diverse group of individuals, potentially leading to future collaborations. Similarly, mentor-mentee relationships can help mentees build their professional network through their mentor's connections.
6. **Focus on Personal and Professional Development:** While the focus in team science is more on collective achievement, individual members still experience personal and professional growth through the collaborative process. Similarly, while mentor-mentee relationships focus on the individual, they also contribute to the professional development of both the mentor and the mentee.
7. **Problem-Solving and Innovation:** Both settings are conducive to problem-solving and innovation. Team science, by bringing together diverse perspectives, fosters innovative solutions to complex problems. Similarly, the mentor-mentee dynamic can spark new ideas and approaches, as the mentee brings fresh perspectives and the mentor provides wisdom and experience.
8. **Adaptability and Flexibility:** Team members must be willing to adjust their approaches based on collective needs and changing project dynamics. Similarly, mentors and mentees must adapt their relationship as goals and needs evolve.



Any ??????

**Thank you!**

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