

# Developing and Leading a Team

**Douglas G. Merrill, MD MBA**  
**Chief Medical Officer**  
**Senior Associate Dean for Quality and Safety**  
**Professor, Anesthesiology**



**UC Irvine Urology**

## Team Development and Leadership: agenda

1. Teams in Science – why?
2. Leadership and Team Success
3. What factors impair a team's development and success?
4. What factors support a team's development and success?
5. How to assess your team's likelihood of success.
6. Dealing with Error
7. How to manage the problem member(s) of the team.
8. Conclusions

## Teams are now necessary in scientific research

Globally, team work has increased in all aspects of human endeavor. By 5% in the 1980s and 50% in the 1990s.

“...collaborations among scientists trained in different fields have become essential for exploring and tackling these problems.

“...specialization of research methods has made interdependence, joint ownership, and collective responsibility between and among scientists near requirements.

“These features of team science may not suit everyone, but given these current trends, **it is increasingly likely that most researchers will find themselves asked to participate on or lead a research team at some point in their careers.**”

Salas, E., et al. 2004. Modeling Team Performance: The Basic Ingredients and Research Needs. pp. 185-228.

Bennett ML, Gadlin H, Levine-Finley S. Collaboration and Team Science: A Field Guide. NIH, 2010. <http://teamscience.nih.gov>



## Why bother with teams?

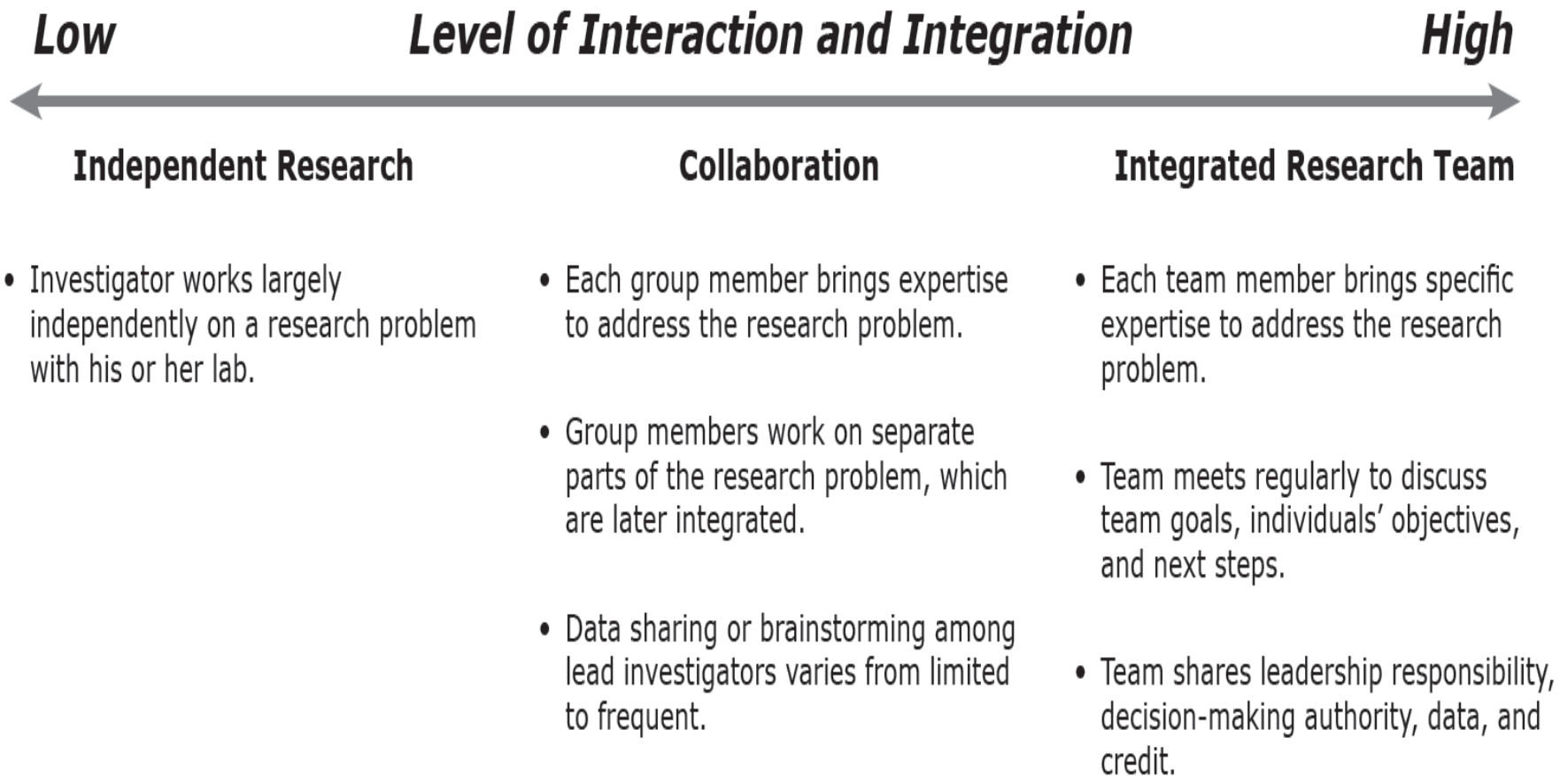
1. Teams deliver far better success in most research and care environments than does autonomous work.
  - a. Multiple perspectives of a problem leads more often to multiple potential solutions. Picking among possibilities generated by multiple team members improves outcomes over a single perspective. This is particularly true if the teams are of different disciplines (e.g., chemists vs. physiologists);
  - b. Modern experimentation is often gruelingly boring (“painstaking”), e.g., genome sequencing: a variety of workers doing such work can reduce error
  - c. Several different workers means salient talents can be focused on disparate tasks (e.g., grant writing vs. NMR)
2. It is the manner in which scientists are trained in modern academics: graduate students and post-docs work within principal investigators’ teams in apprenticeship.
3. Teams provides an easy transition in independence from undergrad to grad student to post-doc to principal investigator.

## What kind of “team” do you want? (there is no “right” answer...)

1. A relatively loose collection of individuals working in proximity who can discuss each others work but rarely become involved directly?
2. A collaboration of individuals or teams who critique each other’s work and “kibitz” on possible solutions to problems, intermittently coming together with additive ideas and techniques?
3. An integrated and systematic collective of interdependent groups or individuals focusing on a single problem, creating a solution that consists of the best options provided by multiple technologies and systems?

# What Is a Scientific Research Team?

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



Bennett ML, Gadlin H, Levine-Finley S. Collaboration and Team Science: A Field Guide. NIH, 2010. <http://teamscience.nih.gov>

## Leadership and Team Success: what makes a successful leader?

1. Self-awareness of one's own weaknesses and strengths
2. Strong communication skills
3. Integrity – in general and in regard to the scientific principles at the center of the team's goal
4. Aware of and deliberate in the support of the required success factors (see slide 7).
5. Consistent team evaluation and re-evaluation: does each member have a well-defined role and is it well matched to
  - A. his or her individual goals?
  - B. the team's overall mission?

# Metrics of Team Leadership

**Table 4**

Example of behavior markers.

Team skills	Detail behaviors	Behavior criteria
Leadership	Accountability	Clarifies roles and responsibilities for routine and abnormal situations
	Decisiveness	Takes decisive action when informed of a situation affecting safety
	Maintaining standards	Intervenes if team members do not apply appropriate rules or procedures
	Monitoring performance	Ensures others follow standard procedures and complete safety-related tasks correctly
	Promoting participation	Encourages team members to contribute to task planning and completion
	Situational leadership	Takes a leadership role if the situation requires
	Authority gradient	Fosters an optimal authority gradient within the team

Kim SS, Byun SN, Lee DH. Development and validation of a heuristic model for evaluation of the team performance in nuclear power plants. 2011; Ann Nuclear Energy 38(9): 2005–2016.



# What factors support a team's development and success?

1. Trust of each other is the primary characteristic of successful teams.
2. A shared vision
3. A leader with proven success and/or clear interest in the project and the well being of the group members
4. Strategic hiring of well-fitting team members
5. Clear definition of roles
6. Promoting disagreement while containing conflict
7. A leader's willingness to manage individual failures to meet deadlines or to communicate issues
8. Setting clear expectations for sharing credit and authorship

# What factors support a team's development and success?

1. Clarity of leadership is a large predictor of success
  - A. Clear team objectives
  - B. High levels of direct participation
  - C. Commitment to Excellence
  - D. Support for Innovation
  
2. Team Processes that predict success
  - A. Developing milestones
  - B. Encouraging participation by all members
  - C. Recurrent focus on quality of output
  - D. Repeated support for innovation

West MA, Borrill CS, Dawson JF et al Leadership clarity and team innovation in health care. The Leadership Quarterly, 2003; 14:393-410.

## What factors impair a team's development and success?

1. Unclear Mission
2. Individual uncertainty about the impact of this team's demands on his or her own career advancement (mistrust)
3. Unexplained expectations by either the team or the individuals or groups who are participating
4. Team members whose personalities are not compatible with their roles on the team, or with teams in general
5. A leader who is unwilling to confront poor behavior – particularly failure to meet expectations and deadlines upon which others are depending to do their own work
6. A leader who self-aggrandizes at the expense of the team's recognition

## Assess your team's performance by regular evaluation of these nine performance factors I:

1. Leadership – is it successful in influencing behavior toward the goals?
2. Adaptability – re-affirming goals and adjusting tactics to match environmental change
3. Cooperation – sharing information well, helping with task overloads
4. Communication – both transmission and reception of good and bad news, accurately and objectively
5. Risk Management – systematic processes to identify and analyze, correct and prevent hazardous conditions or events

(from Kim, et al.)

## Assess your team's performance by regular evaluation of these nine performance factors II:

1. Team Situational Awareness – management of and practice in preparing for task overload
2. Decision making – reviewing the processes and outcomes of encountering hazards or hurdles
3. Emergency Response – timely application of knowledge, skills and experience in a crisis to mitigate threats of harm or loss.
4. Self-management – how each team member insures his or her capacity to perform safely and effectively in both routine and exigent circumstances.

(from Kim, et al.)

## Errors in Team performance

1. 80% of all negative events in highly reliable industries (e.g., nuclear power) are due to human error.
  1. 70% of those human errors are due to latent organizational or system weaknesses
  2. 30% are due to individual mistakes
2. Errors are primarily of failure in situational awareness or in communication
3. Communication errors are due to social, cognitive or organizational factors
  1. Social errors involve language, delivery modes of information and receptivity by team members;
  2. Cognitive errors may represent individual deficits that may or may not be remedial
  3. Organizational factors should be evaluated and remediated by the entire team.

## How to manage the problem member(s) of the team.

1. Leadership must lead – don't leave the solutions to “work themselves out”
2. Don't be split: listen to each side once, then never listen again without both in the room.
3. Make your messages clear and follow up in writing:
  - A. No one team member's interests or feelings come before the team's goal or goals
  - B. All team members are responsible for making the team work effectively
  - C. Team members who cannot manage themselves in accordance with “A” AND “B” cannot stay on the team, no matter how smart or how much grant funding or patient care income they bring to the team.
  - D. You are always available to listen but you will never alter your stance on A, B and C.

## How to manage the problem member(s) of the team.

1. **LISTEN** first. Don't try to solve the problem first.
2. Listen *effectively*:
  - A. Listen “visibly” – make eye contact, sit, face the person and relax
  - B. *Focus only on the person speaking* and nothing or no one else
  - C. Paraphrase what you hear to ensure you understand and to portray that you consider it important.
  - D. Ask questions if you don't understand or something is left “unsaid” – don't let them “yadayadayada” through the difficult part. Make sure they say it and that you repeat it.



## How to manage the problem member(s) of the team.

1. **Understand the culture and the context of conflict** —seek out the meaning of the conflict for yourself and/or the other parties.
2. **Acknowledge emotions** —they will likely be part of the conflict, but expressing them and hearing them can help lift barriers to resolution.
3. **Look beneath the surface for hidden meaning** —hidden fears, needs, histories, or goals may be the underlying source of the problem.
4. **Separate what matters from what is in the way** —get away from discussing who is right or wrong and focus more on how to satisfy mutual needs.
5. **Learn from difficult behaviors** —let those experiences help you develop your skills in managing difficult situations and having empathy for and patience with others.❓
6. **Solve problems creatively and negotiate collaboratively** —this also means committing to action.
7. **Understand why others might be resistant to change** —the problem could be an unmet need (and an easy fix).



## Conclusions

1. Teams are the most efficient manner in which to manage patient care and research.
2. Successful teams don't just "happen" – their creation and ongoing success are due to emphatic, sustained attention by the leadership and ALL members.
3. Trust, a shared vision, and attentive leadership that values the goals of the individuals just a little bit less than the goals of the team are the keys to success.
4. Leadership that immediately addresses conflict in an investigative and objective manner, solving problems WITH the team rather than FOR the team.

## References

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