Collaboration and Team Science: The Good, The Bad and The Ugly

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Setting Scientific Teams Up For Success

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Collaboration and Team Science

- Interested in:
  - Understanding what makes great collaborations and teams successful
  - Sharing those elements that contribute to successful participation in and leadership of collaborations and multidisciplinary research teams
  - Conflict and how to resolve it
  - Implementing strategies for avoiding conflict

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The Science

- Clear Vision
- Power
- Trust
- Institutional Support
- Sharing Credit and Resources
- Funding
- Communication
Model of Team Development

- Forming
- Storming
- Norming
- Performing
- Adjourning and Transforming

Bruce Tuckman, 1965, 1977
Collaboration Introduces Threats

Group-Identity

Self-Identity

Independent

Interdependent

Status

Power

Autonomy

High Interaction and Integration

Multiple Interdependent Leaders
Managing the Threats

• Sharing Reagents, Data, Resources
• Sharing Credit (papers, media, presentations,...)
• Communicating (logistics, meetings, ....)
• Team Dynamics
• Recognition and Reward (esp. tenure track)
• Power (status, ego, ...)

Trust
Types of Trust

- *Calculus based trust* – built on calculations of the relative rewards for trusting or losses for not trusting
- *Competence based trust* – built on the confidence in people’s skills and abilities, allowing them to make decisions and train others
- *Identity based trust* – built on an assumption of perceived compatibility of values, common goals, emotional/intellectual connection
Building a Team

• Teams can be formed:
  – Top down
  – Bottom up

• Key to success?
  – Top-Down Support
Storming is Important

Adjourning and Transforming

Forming

Performing

Norming

Threats:
- Power
- Status
- Autonomy

Challenges:
- trust, personality styles, style under stress, style in conflict, competition for power, autonomy, status, language, culture, and poor listening

Bruce Tuckman, 1965, 1977
Shared Vision
Setting Expectations

Provides a scaffold for building deeper trust

There are no secrets or surprises and there is a strong platform for discussion
“Last year, this journal received an unusual request: could three authors have it indicated in a footnote that they were joint second authors on a paper? We refused...”

- Nature Editorial, Jan 2 2013
Getting and Sharing Credit

- What is the #1 issue that causes problems in a collaborative research effort?
Communicating

- Who is Leading? Co-Leading?
- When are we meeting? How frequently?
- Format of meetings and expectations
- Accountability – what if someone doesn’t deliver?
- Logistics – who is responsible?
- Decision making – how? Who is involved?
- Sharing information throughout the team
- Getting input from all team members
- Project management? Scientific Management?
Productive Collision

Contain Personal Conflict

Share Perspectives & Invite Disagreement
Conflict Management

What will happen if there is a disagreement?

There will be disagreements.....
Team Dynamics

“It’s not the science you need to worry about, it’s the team dynamics”
Prenuptials for Scientists: Collaborative Research Agreements

Some Categories to cover

• **Goals of Collaboration**
  o Including...when is the project “over”?  

• **Who Will Do What?**
  o Expectations, responsibility and accountability

• **Sharing/Storing Reagents and Data**
  o How? When? Where?

• **Authorship, Credit**
  o Criteria, attribution, public comment, media, IP

• **Contingencies and Communicating**
  o What if ...? and Rules of engagement

• **Conflict of Interest**
  o How will you ID conflicts? And resolve them?

(teamscience.nih.gov)
Participating Shouldn’t be Risky

Risk

High

Low

Career Status

Grad Student
Post-doc
Tenure Track
Early Career Tenured
Established
Participating Shouldn’t be Risky

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Can we make participating in team science safe?

Great first flight, Son!
Don’t worry, Fred will catch you if you fall...
Encourage Use of Explicit Agreements

• Include participating in or leading an IR project in the offer letter or a pre-tenure agreement
  – Roles, Responsibilities, Expectations
  – Review and Reward
    • Review criteria, sharing credit
  – Mentoring
    • For and by the scientist
  – Joint Appointments
    • What can everyone expect and how to make changes

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Preemptive Approach

• Develop scaffolds to establish trust
• Written agreements serve as scaffolds
  – Prenuptial agreements
  – TT offer letters or TT review agreements
• Develop policies that support collaboration
• Provide support (training, education, ADR, etc..)
• Institutional self-awareness
Thank-you