Team Development

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Traditional Science

- Operated in silos
- Applied and basic research segregated
- Research questions driven primarily by PI interest
- Other investigators seen as competition
- Credit given primarily to PI only
- Disagreements settled by seniority
In biomedical research, astounding things happen when people from diverse disciplines work together in a coordinated way.

“Be an apple in a bowl of oranges,” said Frances Jensen, director of epilepsy research at Children’s Hospital. *(Photo by Jake Miller)*

### Why Develop Team Science?

- Demands of Translational Science
- Moving discoveries more effectively from Bench to Bedside
- Required collaboration by NIH and other funding agencies
- Complexity of important research questions demands multiple disciplines
- Integrate skills, technology and resources of large networks
- Combining knowledge in new ways that creates insight
- Increasing the number of potential solutions for conflicts or problems
- Facilitating emergence of new ideas
Identify Scientific Opportunities

- What are the most important and interesting questions
- What excites the interest and enthusiasm of the group?
- PI facilitates discussion and actively solicits input and suggestions from others

Build on common interests

- Team members learn about background, expertise of others
- All team members provided opportunity to present early in process
- What do members consider their most important achievements and contributions to their discipline
- What are the strengths and limitations of various methodologies
- Set appropriate tone for group meetings – sufficient time for asking questions, soliciting answers
Shared understanding of what is known and not known

- Consensus of what has been established and what is unclear
- May need to bring in outside speakers
- Discussion of potential advantages of adding additional members
- Who is missing
- Soliciting input from all members enhances team building

Defining Scope of Research

- Defining research problem in terms of interdisciplinary and collaborative perspectives
- Team needs to discuss how each member can contribute to the translational goals and how these interact and thus enhance the team’s agenda
  - How will basic mechanistic findings impact understanding of clinical phenomena and treatment and later impact models of care
- This understanding needs to be conceptualized by each member of the team, not just by the PI.
- Discuss what help is needed from key resources
Operational Management

**Team Meetings**

- Meeting attendance critical by all members
- Time and location consistent
- Agenda available
- Minutes taken
- Team members are present when decisions are made
- These all build the identity and sense of team
- Investigate utility of forming sub-teams

**Operational Management**

**Dealing with conflict**

- Discussions are candid, not hostile
- Discussions occur in group setting, not off-line/one on one
- Capacity of group to deal collectively with disagreements and not splitting into factions, is hallmark of effective teams
Expand horizon and scope of knowledge

- Schedule presentations from those not on the team
- Benefit of shared learning
  - First shared learning exemplified by initial presentations of team members
  - Exposure to other new perspectives enhances shared learning of team
  - Both experiences enhance capacity of members to reframe their explanatory models to include other perspectives

Monitoring progress

- Periodic review of research
  - Team members have opportunity to present findings, answer questions
  - PI encourages differing perspectives on interpretation of findings and thus models how to provide feedback that is both critical and supportive
  - Explicit discussions whether progress to date is close to expectations/milestones
  - Team comes to shared understanding on what factors have contributed to lack of progress
Monitoring progress

- Integration of team discussions with quarterly assessments
  
  - Seek comparability between conclusions arrived at in team meetings with quarterly reports submitted by team leaders. Assessments discussed in group.
  
  - How we score ourselves should be consistent with what we say to one another and how we really feel about our progress

Share Recognition and Credit

- Establish early what process and criteria will be used to determine authorship in group discussions
  
- Perceived fairness of these decisions relates in part to success of group in clarifying roles and responsibilities early in group development

- These discussions establish positive precedents for group to discuss concerns when potential problems emerge about credit

- Encourage team members to indentify contributions of others in presentations, abstracts, interviews with press, etc.