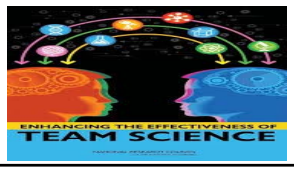
AAIM Third Consensus Conference on the Physician Investigator Workforce Team Science Break Out

The Pipeline for Physician – Investigators: Maintenance or Opportunities for Incremental Growth in 2015



Team Science - Definition

Understand and improve how scientists collaborate and integrate across disciplinary, professional and institutional boundaries to achieve objectives that individuals could not accomplish alone.

Successful teams must have good leadership, stress team building, have a shared vision, give credit and resolve conflict.

Team Science - Definition

- Multi-investigator team(s)
- Transdisciplinary effort
- High impact research
- Clinical and disease implications
- Cooperative group with respect to contributions
- Advancement as a group and individually including promotion and tenure process

Collaboration and Team Science: A Field Guide, August, 2010

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Team Science – Key Capabilities

- “Basic” discovery
- Clinical applications and samples
- Population impact
- “omics” – genomics, proteomics
- Novel imaging technology
- Bioinformatics and statistics, modeling
- Technology development, innovation, therapeutics

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Team Science – A Continuum

Level of Interaction and Integration

Low ⟷ High

Independent Research	Collaboration	Integrated Research
• Investigator largely works independently on a research problem	• Each group member brings expertise to address the research problem	• Each team member brings specific expertise to the research problem
	• Group members work on separate parts of the research which are integrated later	• Team meets regularly to discuss team goals, individuals' objectives, and next steps
	• Data sharing or brainstorming varies from limited to frequent	• Team shares leadership responsibility, decision-making authority, data, and credit

Pros and Cons of Team Science

- **Pros**
  - Exposure to broader range of ideas
  - Research overall may be better served by high levels of collaboration
  - If young investigators part of the process, may gain better access to mentors
  - Intellectually stimulating
  - Increasing importance in modern research methods and medicine provided by team members

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Pros and Cons of Team Science

- **Cons**
  - Less autonomy
  - Members need to accept the group's culture
  - Authorship position on manuscripts
  - Institutional recognition; compromising individual chances of advancement
  - Where to send applications within the NIH system (multiple-PI NIH applications endorsed)

Team Science – How to promote

- Developing teams
  - Making protocols publicly available; IRB keeps protocols confidential
  - Seed money, pilot grants that are contingent on multi-disciplinary team that target RFAs (PCORI), CTSAs, in Departments
- Enabling Resources
  - Templates for biorepositories, databases ("Big Data")
  - PR of databases, Cores, Patient Cohorts, RFAs
  - Encourage Pilot Proposals for CTSA Cores
  - NIH: co-PI applications

Team Science – How to Promote

- Sustaining momentum
  - Committee to identify broad areas, mine RFAs, develop teams, solicits applications
  - Research seminars that emphasize bringing junior and senior faculty together
- Promotion & Tenure
  - Mechanism for documenting contribution; charge leaders to promote the members
  - Different template for presenting team scientists
  - Charge external reviewers differently for team scientists

Changes in Promotion and Tenure - The Case Western Reserve University (CWRU) Process

- Charged by Dean of School of Medicine (SOM) to develop new guidelines
- Formation of multi-institutional and multi-disciplinary team as subcommittee of SOM By-laws Committee
- Reviewed available information including an extensive survey of the topic by AAMC (via Northwestern University) about how many institutions have developed this process and chose the “best-of-the-best ideas

Major Points of Guidelines Document for Promotion to Associate and Professor and Award of Tenure for Team or Hybrid Scientists

- Applies to tenured track, tenure and non-tenure track candidates whose primary area of excellence for promotion and tenure is **research**; further guidelines for educational teams forthcoming
- Candidates must identify as an independent scientist, a team scientist or both

Promotion to Associate and Professor and Award of Tenure for Team or Hybrid

- Team scientists represent those where the greater portion of research accomplishments, publications, grants and national reputation rest on original, creative, indispensable and unique contributions with a group or groups of other scientists

Major Points of Guidelines Document for Promotion to Associate and Professor and Award of Tenure

- Supplementary materials will be needed if applying as a team scientist or both independent and team scientist
  - Personal statements should reflect a detailed description of the type or types of contributions made to teams
  - The publications and grants should be carefully annotated to indicate the precise role and extent of contributions

Major Points of Guidelines Document for Promotion to Associate and Professor and Award of Tenure

  - At least 2 of the 4 collaborators/mentors/colleagues to write on behalf of the candidate should be identified as a team colleague and should explicitly describe the candidates contributions
  - External referees should be carefully chosen (often being team scientists themselves); the SOM will notify external referees of this new evaluation process

Team Science Guidelines – Further Steps

- Presentation and endorsement by the SOM Dean and Vice-Deans
- Presentation and endorsement to By-laws Committee, Faculty Council, Department and Center Chairs, and Department CAPT chairs and members
- Presentation and approval by the Provost

Review of Applications at CWRU 1 year after Implementation of new Guidelines

- 60 applications processed and reviewed during AY 2014-2015
- Only 2 faculty declared as Team Scientists and both were promoted with the new guidelines
- 40% declared as hybrid scientists; CAPT felt that the new guidelines and process enhanced the review of these candidates
- Continuous review of this process is planned with no major modifications at present
- CAPT has requested similar guidelines for evaluation of team collaboration in candidates coming forth for evaluation in the areas of education and service

Talking Points of Team Science Breakout

- Do you agree that increasing emphasis will be placed on Team Science as one approach to enhancing Physician Investigators in the future?
- Do you agree with the definition of Team Science as presented?
- If you agree that this pathway is critical, how can this be facilitated and enhanced by funders (NIH and beyond) and institutions (Schools of Medicine and Academic Medical Centers)?

Talking Points of Team Science Breakout

- What is the appropriate mentoring and recruitment strategies for young investigators invested or interested in team science?
- What are the most important metrics for evaluating success (especially for promotion and tenure) for Team Scientists or for those who are “hybrids” (Independent and Team Scientists)?
- Is it possible to apply new guidelines for the award of tenure?