Team Science Affinity Group
(an initiative of CTSA Strategic Goal Committee #3)

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Agenda

• Introduction of the Steering Committee Members
• Statement of the problem
• Discussion
• Next steps
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Team-based research is required for translational research enterprise that can truly span T1-T4.

Translational teams differ in fundamental ways from better-studied Sci & Tech Teams and Industry Teams.

There are a number of uncoordinated efforts across the consortium that would benefit significantly from greater cohesion, perspective and sharing of approaches.

Providing leadership in translational team building, its evaluation and use in education will require cross-CTSA collaboration with efforts in collaboration (SGC#3), Education (SGC#2), and Tracking and Evaluation Key Function Committee.
We propose a three-step process to “Move to Action” that might expedite the practice of team-based translational science. This involves:

1) Create a CTSA Team Science Practice Affinity Group to lead the effort
2) Affinity work groups in education, team development, and evaluation create definitions and taxonomies for initial implementation
3) Establishment of a “Big Picture” model to drive integration of translational team approaches across educational, developmental and evaluative domains
Many reviews of the literature* indicate a variety of issues, including:

1) Lack of definition of key terms
2) Few theoretical models, taxonomies, and frameworks
3) Insufficient training in Team Science
4) Underutilization from other disciplines
5) Requires multilevel evaluation approaches using mixed methods

*(Börner et al., 2010; Cummings & Kiesler, 2005; Fiore, 2008; Stokols, Hall, Taylor, & Moser, 2008; Spring, Moller, Falk-Krzesinski, & Hall, 2012)
Recommendations from Team Science Scholars

Recommendations by Team Science Scholars* clearly articulate the need for improved methods and models, inclusive of:

1) A more precise and integrated taxonomy of the disciplinarily and contextual factors
2) Identification, operationalization, and acceleration of readiness for collaboration
3) Investment in teams prior to collaboration and use prior experience
4) Models and curriculum to train scientists

*Hall, et al. (2008), and Stokols, Misra, Moser, Hall, & Taylor (2008)
Where to Begin?

• For short term, assemble “CTSA Team Science Practice Affinity Group”
  1) Focus on the basics – a start
  2) Cogeneration by Team Science scholars and CTSA practitioners
  3) Use current CTSA Strategic Goal Number 3 (Committee on Collaboration) initiative
• Purpose of the “Affinity Group” would be to “To create a community of learning (Cox, 2005; Wenger, 1998) among the CTSA institutions that promotes, studies, and facilitates team science, resulting in resource sharing and dissemination of effective methodologies”
Team Science Practice Affinity Group: Organizing the SG3 Effort

1. Identify Idea Champions
2. Identify Key CTSA Practitioners in Education, Development, and Evaluation
3. Establish Steering Committee and Work Groups in Education, Development, and Evaluation
Team Science Practice Affinity Group: Tasks

Define Key Areas and Create Initial Taxonomies

Create and Operationalize Initial “Big Picture” Model

Identify and Help Implement Best Practices in Education, Development, and Evaluation
The Primary Components of Team Science Practice

- Team Education
- Team Science Practice
- Team Assessment & Evaluation
- Team Development
The Known “Known's”: Primary Factors and Programmatic Activities

- We have now useful knowledge to apply to assist the CTSA in education, development, and the evaluation of translational tams
- Affinity work groups in education, development, and evaluation should consider “knowledge mining’ as a starting point in the efforts to generate relevant taxonomies and practice frameworks
Team Science Education: Primary Factors

- **Competency Models**: CTSA Core Competencies for Clinical and Translational Research CTSA (2011); Gebbie, et al. (2008); Cannon-Bower, Tannenbaum, Salas, & Volpe, (1995)

- **Team Effectiveness & Adaptation Models**: Ilgen, Hollenbeck, Johnson, & Jundt (2007); Mathieu, Maynard, Rapp & Gilson (2001); Kozlowski & Ilgen (2006); Burke, Stagal, Salas, Pierce, & Kendall (2006); Hall, Vogel, Brooke, Stipelman, Stokols, Morgan & Gehlert (2012); Morgan, Salas, & Glickman (1994)

- **Basic Interpersonal & Team Skills**: Loughry, Ohland, & Moore (2007); Moregenson, Reider, & Carrigan (2005); Rousseau, Aubé, & Savoie (2006)
Team Science Education: Programmatic Activities

- **Graduate & Post Doctoral Courses**: Rubio, et al. (2012); Borrego & Newswander (2010); Miltrany & Stokols (2005); Nash (2008)
- **Seminars & Workshops**: Begg et al. (2013); Weaver, Rosen, Salas, Baum, & King (2012); Reeves (2009)
- **Mentoring**: Fleming, Burnham, & Huskins (2012); Meagher, Taylor, Probsfield, & Fleming (2011); Anderson, Silet, & Fleming (2012)
Team Science Development: Primary Factors

- **Team Assembly & Structure**: Calhoun, Wooten, Bhavanni, Anderson, Freeman, & Brasier (2013); Guimera, Uzzi, Spiro, & Nunes Amaral (2005); Henttonen (2001)
- **Team Processes**: LePine, Piccolo, Jackson, Mathieu, & Saul, (2008); Marks, Mathieu, & Zaccaro, (2001); Hall, Vogel, Stipelman, Stokols, Morgan, & Gehlert, (2012)
- **Team Leadership & Followership**: Bennett, Gadlin, & Levine-Finley (2012); Zaccarro, Rittman, & Marks (2001); Kozlowski, Gully, Salas, & Cannon-Bowers (1996)
Team Science Development: Programmatic Activities

- **Team Training & Coaching**: Fiore (2008); Bedwell, Ramsay, & Salas (2012); Hirshfeld, Jordon, Field, Giles, & Armenakis (2006)

- **Team Building**: Klein, et al. (2009), Salas, Rozell, Mullen, & Driskell, (1999); Gilley, Morris, Waite, Coates, & Veliquette, (2010)

- **Process & Innovation Interventions**: Bedwell, Ramsay, & Salas (2012); Salazar, Lant, Fiore, & Salas (2012)
Team Assessment and Evaluation: 
Primary Factors

- **Outcome Evaluation**: Trochim, Marcus, Masse, Moser, & Weld (2008); Hoggarth & Comfort (2010); Stokols et al. (2003)
- **Developmental Evaluation**: Masse et. al. (2008); Wooten, Rose, Ostir, Calhoun, Ameredes, & Brasier (2013); Saunders, Evans, & Joshi (2005)
• **Quantitative Methods**: Stokols et al. (2003), Masse et al. (2008)

• **Qualitative Methods**: Kotarba, Wooten, Freeman & Brasier (2013); Aboelela, Merrill, Carley, & Larson, (2007)

• **Mixed Methods**: Trochim, Marcus, Masse, Moser & Weld (2008); Wooten, Rose, Ostir, Calhoun, Ameredes, & Brasier (2013)
Steps of Integrating the Practice of Team Science Components

- Education, Development, and Evaluation Affinity Work Groups Define and Create Taxonomies for Use
- Creation Of “Big Picture” Model
- Implement Model and Refine
The Big Picture for Team Science Practice

Team Education → Team Competencies → Team Processes → Team Development → Team Evaluation → Team Effectiveness
Why a “Big Picture”

- To create a legitimate thread between education, development, and evaluation
- To provide for a quicker generation of best practices and comparative effectiveness efforts
Deliverables to the Consortium and Community

- Make a repository of resources for translational team science available to CTSA institutions, integrated with other team science initiatives (NCI Toolkit, SciTS).

- Establish a research agenda involving team science pedagogy, developmental interventions, team processes, and team effectiveness, that stimulates evidence-based publications and facilitates partnerships with social, behavioral, and management scholars.

- To collaborate and build a comprehensive model of team science such that educative, developmental, and evaluative processes become integrated to maximize resources and stimulate the development of team science.
Expectations of Advisory Committee

- Provide high level advice on how to source and utilize Known “Known’s” for each work group
- Provide advice and expertise in creation of “Big Picture”
- Provide expertise to specific workgroups
- Provide insights and assistance to dissemination of products coming from the effort
Discussion/Process Questions

- How best to organize and facilitate the three work groups?
- Are we missing important areas of emphasis?
- How do we ensure coordination between the three working groups?
- What should be the relationship between the advisory committee and the three work groups?
- What should be our next steps as a committee and generally? Action steps and timetable?


