

**Essential Skills for Biomedical  
Librarians Engaging in  
Cross-Disciplinary, Multi-Institutional  
Team Projects:  
Experiences from the VIVO Collaboration**

Rolando Garcia-Milian, Hannah F. Norton,  
Beth Auten, Valrie Davis, Kristi Holmes,  
Margeaux Johnson, Michele R. Tennant  
University of Florida

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# Background



- Global challenges and complex questions require complex teams for research and implementation.
- Librarians, accustomed to working on teams within the library, are branching out to serve on interdisciplinary teams.
- Serving on interdisciplinary teams is part of being embedded with our patrons.

# Definitions



- *Team*: Interdependent collaborative group of two or more individuals that interact and share clearly articulated roles and responsibilities in order to complete a task
- *Cross-disciplinary Collaboration*: Any type of interaction between team members from different disciplines
- *Multidisciplinary Collaboration*: Team members from different disciplines work independently and coordinate, rather than integrate, efforts

(Fiore 2008, Stokols et al. 2006)

# Definitions



- *Interdisciplinary Collaboration*: Joint work among cross-disciplinary team members allows them to interact, integrating their strengths
- *Transdisciplinary Collaboration*: Team members from different disciplines work together over extended periods of time and develop shared understandings that transcend disciplines
- *Science of Team Science*: A combination of conceptual and methodological strategies aimed at understanding and enhancing the outcomes of large-scale collaborative research and training programs

(Fiore 2008, Stokols et al. 2006, Stokols et al. 2008)

# Case Study: VIVO Collaboration



VIVO

enabling national  
networking of scientists

VIVO is an open-source **semantic web application** that enables the discovery of research and scholarship across disciplines in an institution.

VIVO contains **detailed profiles** of researchers that display items such as publications, teaching, and grants. These profiles are **linked** to each other and to additional departmental information.

VIVO supports faceted searching for quick retrieval of data. This is a **powerful search functionality** for locating people and information within or across institutions.

# What is VIVO?



- **Some history:**

- VIVO originated at Cornell University in 2003 as an open source product.
- Through a \$12.2 million grant from the National Institutes of Health, 7 partner institutions, led by the University of Florida, are expanding VIVO for national use.

- **The Goal:**

Improve all of science by providing the means for sharing and using current, accurate, and precise information regarding scientists' interests, activities and accomplishments.



Cornell University



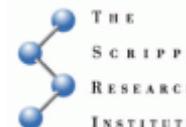
INDIANA UNIVERSITY



Weill Cornell Medical College

**UF** UNIVERSITY of FLORIDA

 Washington  
University in St. Louis  
SCHOOL OF MEDICINE



# Role of librarians



Developing core and local ontologies

Locating and selecting subject vocabularies

Providing local support and training on the system

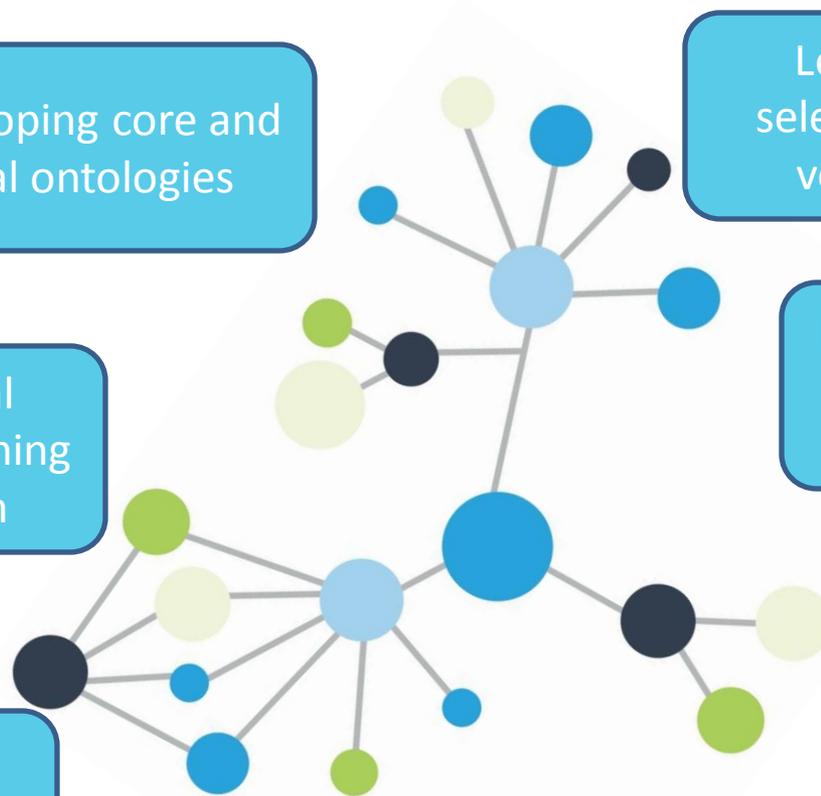
Performing usability studies and focus groups

Developing user-centered interface design

Engaging with local and external data providers

Engaging potential users

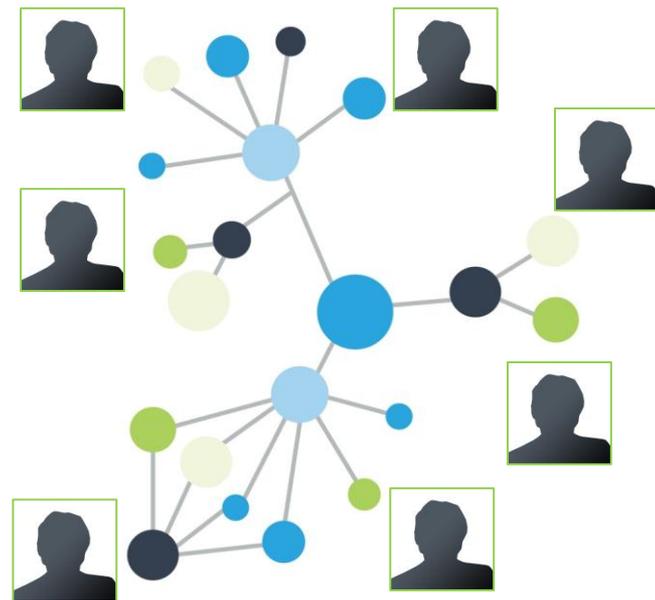
Providing project management and leadership



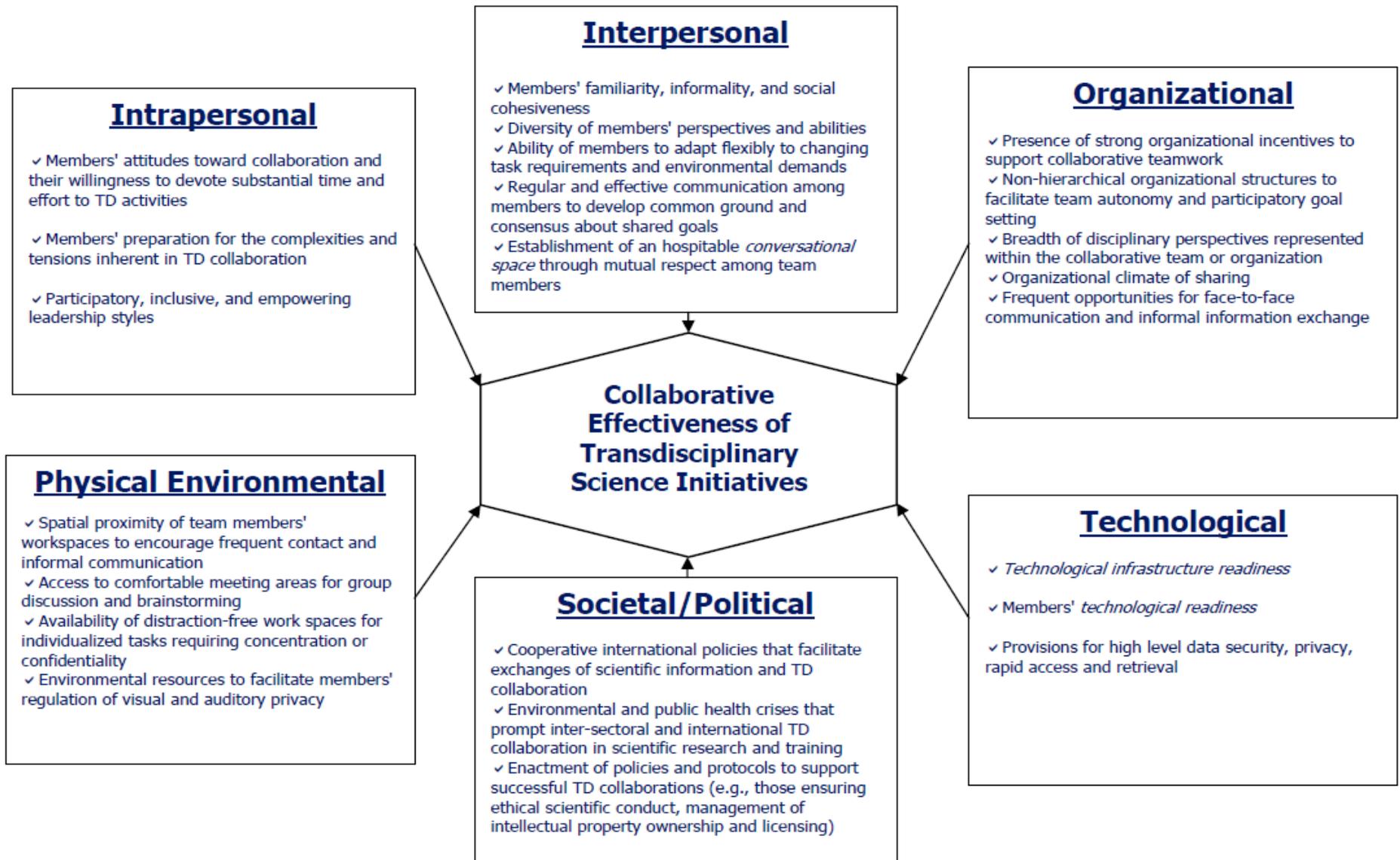
# Goals and methods



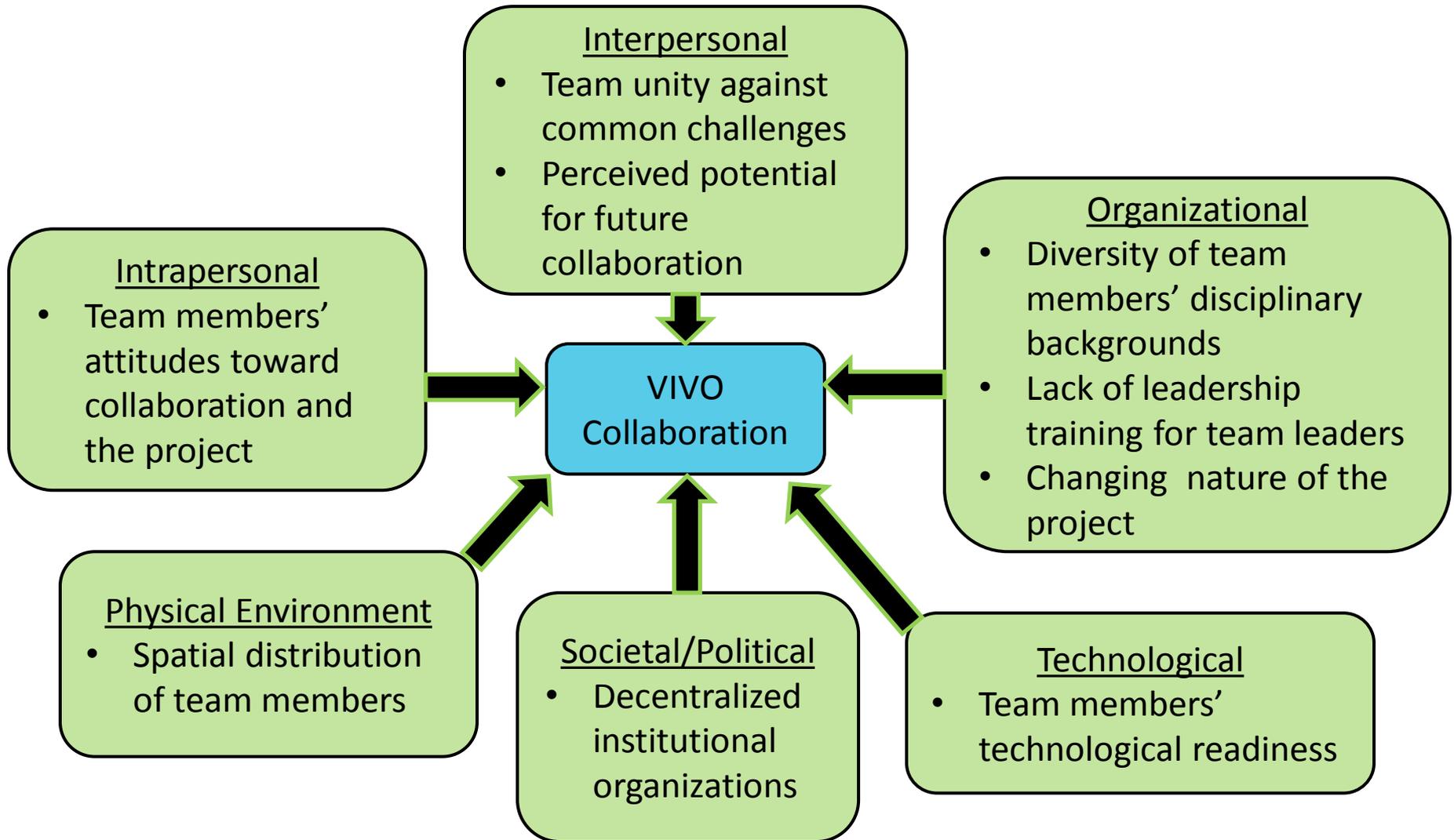
- Goals:
  - Analyze the challenges librarians have encountered during VIVO implementation and outreach
  - Investigate the impact of the VIVO project on librarian's professional development and skill sets
- Methods:
  - 9 librarians interviewed for 1– 1½ hours each
  - Open questions: challenges, skills gained, lessons learned



# Typology of Contextual Factors Influencing TD Scientific Collaboration at Each Level of Analysis



# Factors Impacting VIVO Collaborative Effectiveness



# Interpersonal Factors



Factors impacting team effectiveness:

- Team unity against common challenges
- Perceived potential for future collaboration

Required Skills:

- Communication
- Perseverance in overcoming obstacles

Lessons Learned/Skills Developed:

- Talk openly as a team
- Use every possible communication channel (from phone calls to teleconferencing)
- Empathy is important when navigating multidisciplinary conversations

# Organizational Factors



Factors impacting team effectiveness:

- Diversity of team members' disciplinary backgrounds
- Lack of leadership training for team leaders
- Changing nature of the project

Required Skills:

- Willingness and ability to adapt
- Leadership
- Communication

Lessons Learned/Skills Developed:

- Team leaders have learned to hire individuals with the right skill sets for each position
- More efficient decision making process
- More task-driven orientation, centered around an action plan

# Technological Factors



Factor impacting team effectiveness:

- Team members' technological readiness

Required Skills:

- High tolerance for change
- Willingness and ability to adapt

Lessons Learned/Skills Developed:

- Increased knowledge about technical aspects of the project and terminology
- Learned to interpret the progress of the project and translate for end users

# Physical/Environmental Factors



Factor impacting team effectiveness:

- Spatial distribution of team members

Required Skills:

- Communication

Lessons Learned/Skills Developed:

- Talk openly as a team
- Use every possible communication channel (from phone calls to teleconferencing)

# Intrapersonal Factors



Factor impacting team effectiveness:

- Team members' attitudes toward collaboration and the project as influenced by
  - Perceived enthusiasm toward the project from the outside community
  - Individual professional development
  - Opportunities to engage in the wider campus community

Required Skills:

- Inclusive thinking

Lessons Learned/Skills Developed:

- Learned more about institution's various cultures
- Increased level of comfort in talking to people across the scholarly spectrum

# Summary: Required Skills



- Strong communication and interpersonal skills
- Willingness and ability to adapt/High tolerance for change
- Perseverance in overcoming obstacles
- Leadership
- Inclusive thinking

# Moving Forward



Team members' new cross-disciplinary collaborations:

- Research data assessment and data management training with high performance computing experts
- Textbook chapter authorship with medical educators
- Providing patient education services in internal medicine clinics with health literacy and medical specialists

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