Barriers in Academics to Multidisciplinary Team Science

David A. Bennett, M.D.
Director, Rush Alzheimer's Disease Center
Robert C. Borwell Professor of Neurological Sciences
Rush University Medical Center
Chicago, IL

RCCN Workshop:
Multidisciplinary Research in Aging & Team Science
Bethesda, MD
May 21, 2026

Objectives

- Barriers to team science
- Facilitators of team science
- Clinical Care Teams
- Rush Alzheimer's Disease Center

Barriers to team science

- Human
  - Characteristics of researchers
  - Teaming skills
  - Time
- Organizational
  - Institutional policies
    - Appointment and promotion
  - Team science integration
  - Funding
- Technology
  - Complexity of techniques
  - Privacy

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Facilitators of team science

- Human
  - Characteristics of researchers
  - Rolls
  - Goals
  - Communication
  - Trust
  - Conflict
- Organizational
  - Institutional policies
  - Skills
  - Evaluation
- Technology
  - Virtual readiness
  - Data management

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Principles of Team-Based Health Care

- Shared goals
- Clear roles
- Mutual trust
- Effective communication
- Measurable processes and outcomes

- Institutions have no problem recognizing, appointing, and promoting members of large clinical teams across medicine and surgery

Institute of Medicine. 2012

Rush Alzheimer's Disease Center

- Organization
  - Independent administrative entity
  - Its own space
  - Director reports to the Medical College dean
  - Director signs faculty contracts
  - Open science environment

- 250+ people in USA and Brazil

Rush Alzheimer's Disease Center

- Inter-disciplinary team include
  - 40+ Faculty
    - Neurologists, neuropsychologists, neuropathologists, epidemiologists, medical physicists, biomedical engineers, health policy, geneticists, statisticians, computational scientists,, human cell modeling
    - On site and remote
      - Boston, Irvine, New York, San Diego
      - Brazil, Canada, Germany, Israel
  - Post-docs and student
    - On site and remote
    - Brazil, Israel
  - Strategic Partners
    - USA
    - Canada
    - Israel

Rush Alzheimer's Disease Center

- Types of Studies
  - Epidemiologic studies
    - Five harmonized community-based cohort studies
      - National
      - Regional
  - Patient oriented research
    - Community-based
    - Clinic-based
  - International studies
    - Brazil
    - Mexico
  - Many areas of research with parallel streams of clinical and pathologic data collection

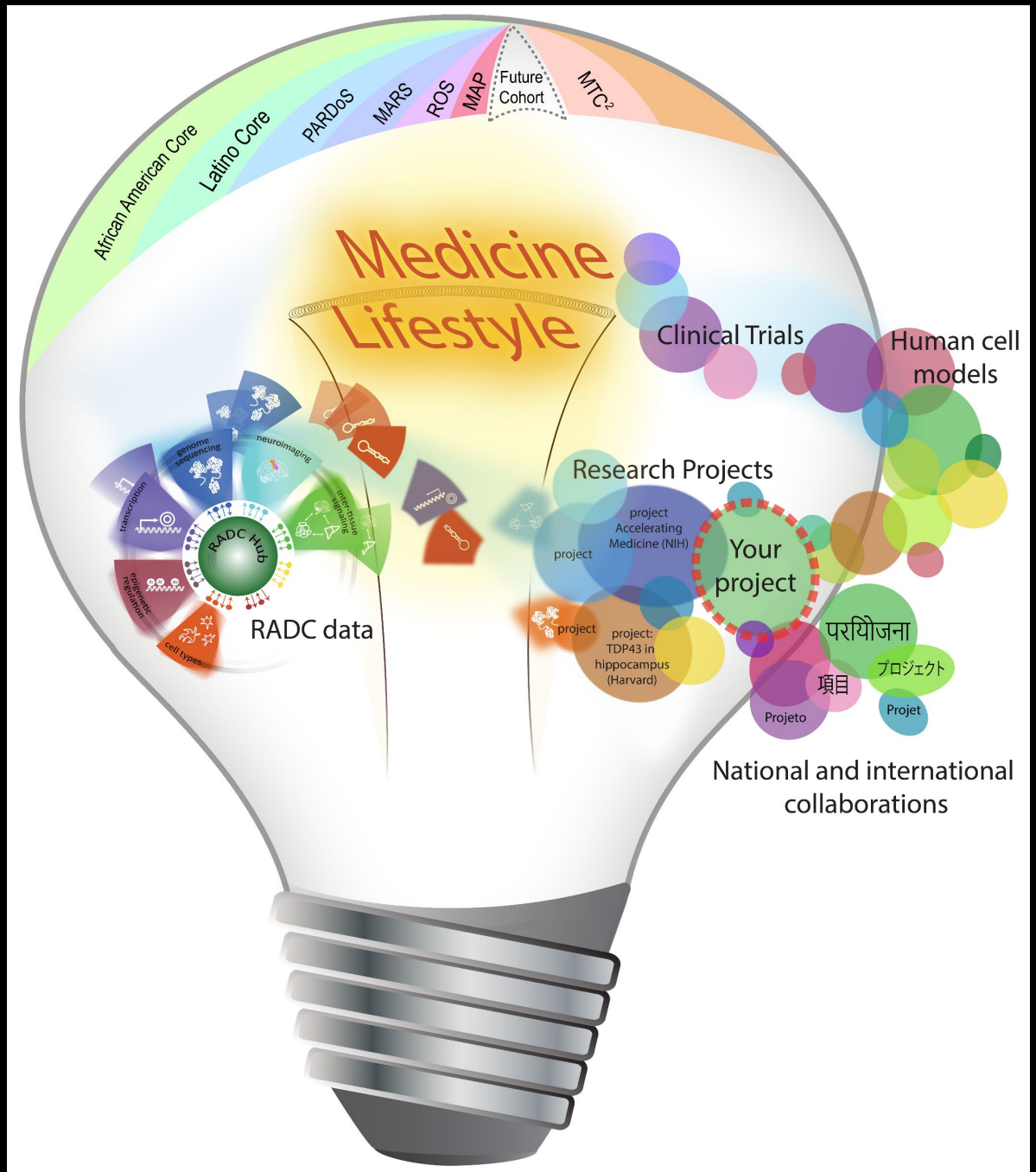
Rush Alzheimer's Disease Center

- Cores
  - Administrative
    - Senior financial administrator
    - Senior financial administrator – clinical trials
    - Grants management team – non clinical trials
    - Personnel department manager
  - Data management
    - All activities managed centrally
  - Statistics Core
    - PhD
    - MS
  - Sequencing Core

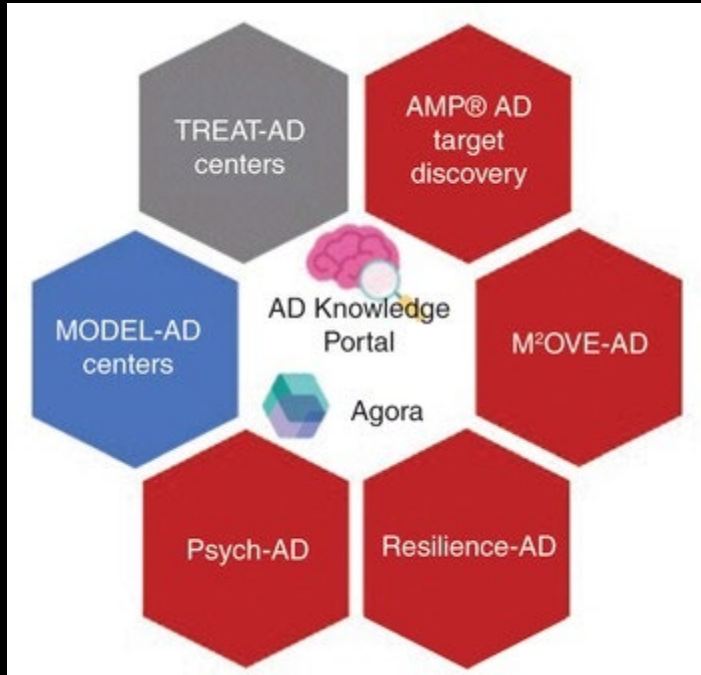
- Service
  - Rush Memory Clinic

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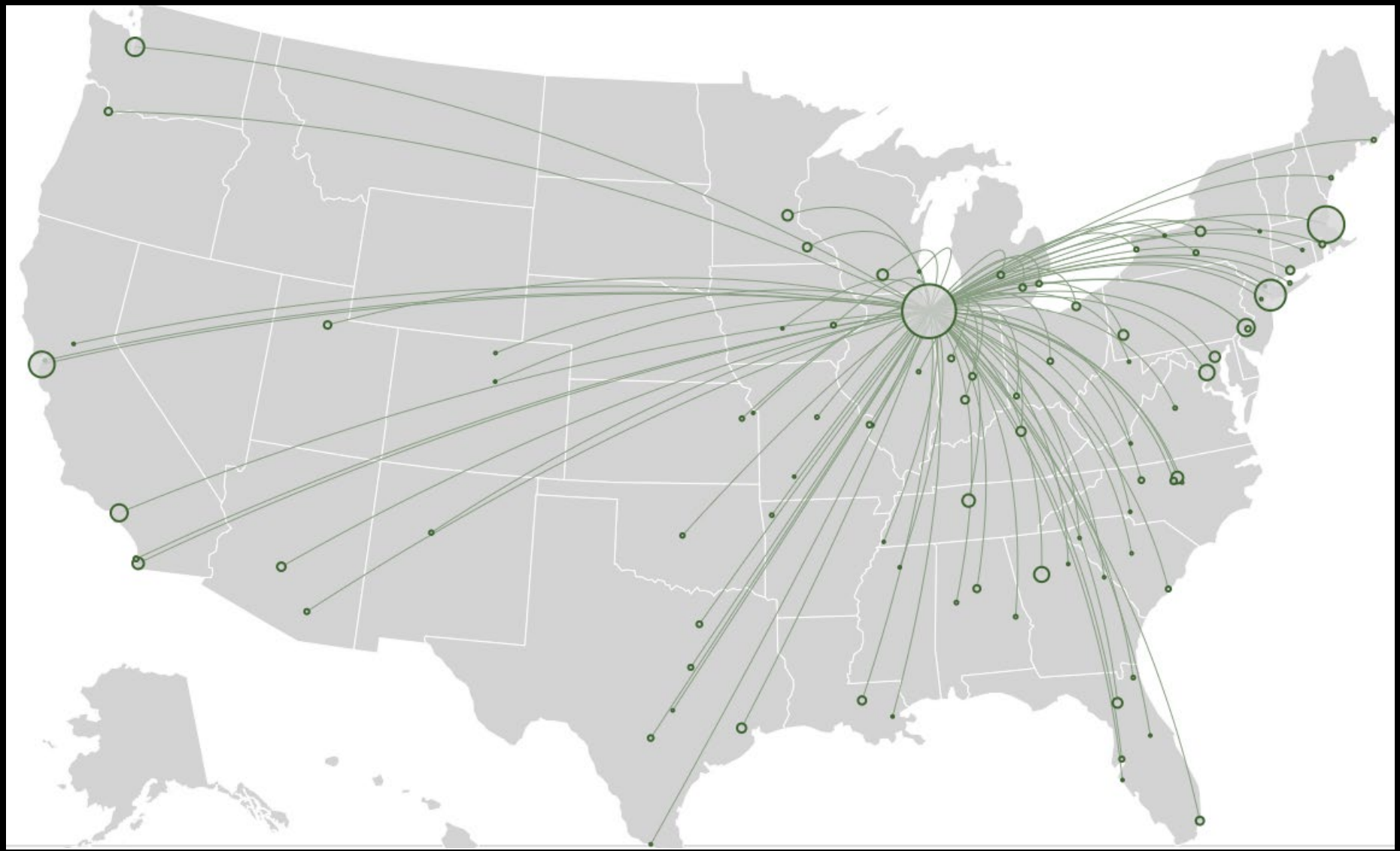
- Everyone expected to know
  - Epidemiology
  - Neuropathology
- Scientific subteams
  - Ante-mortem molecular and post-mortem anatomic pathology
  - Medicare claims
  - Decision making behavioral economics team
  - Neuroimaging
  - Human cell modeling
  - Computational biology

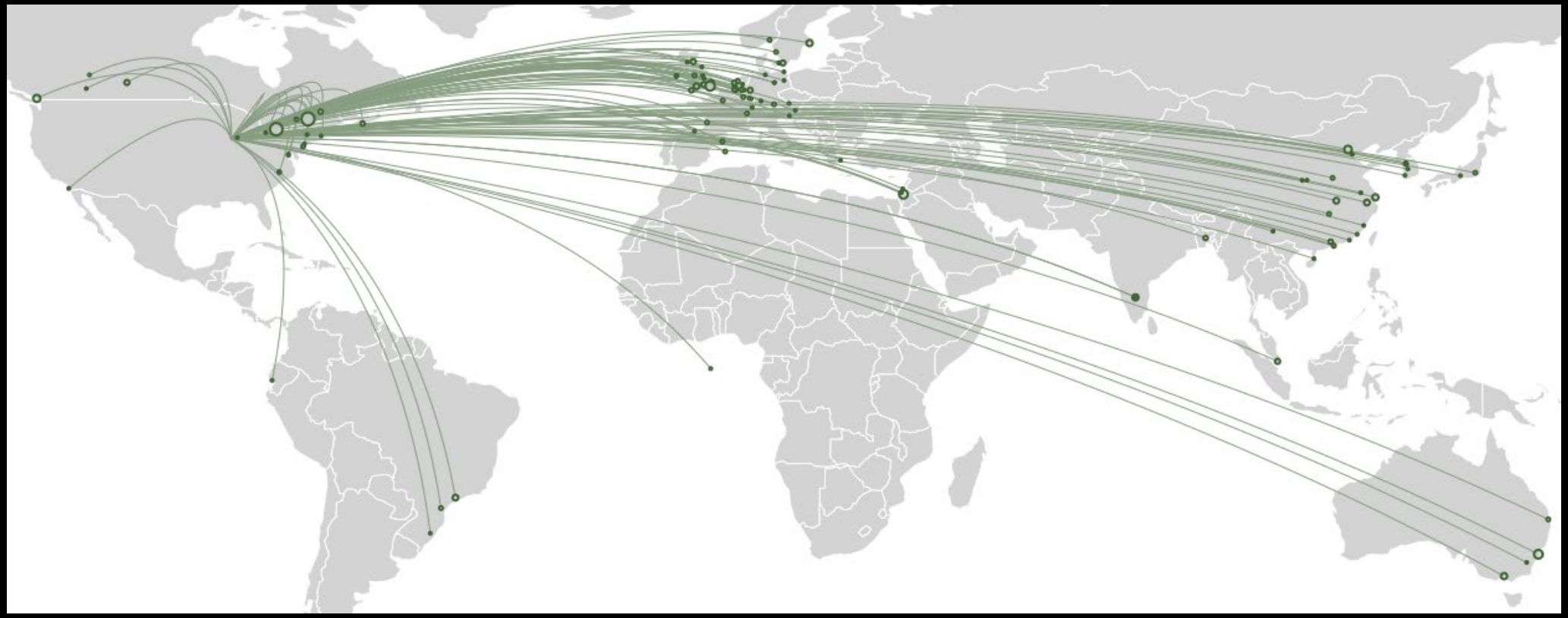


Open Science



PRECISION-AD





Challenges

- There's safety in numbers but how big is too big?
  - Competition for resources
  - Territoriality
  - Varying in inter- vs multi-disciplinary skills
  - Social cohesion
- Occasionally hire the wrong person
  - Zebras
  - Foxes
- Can you ever be as successful as the leader?

Summary

- Barriers and facilitators to team science include
  - Human factors
  - Organizational factors
  - Technological factors
- Team health delivery has long been the standard and is alive and well and growing in most academic medical centers
- I provide one example of a structure that works well (not perfect!) for team- and open-science

RADC Research Resource Sharing Hub



www.radc.rush.edu