

UNIVERSITY OF TEXAS  ARLINGTON

2nd Annual Research Integrity Symposium
October 7, 2016

Plenary Presentation:

Responsible Research Collaboration

Francis L. Macrina
Vice President for Research and Innovation
Virginia Commonwealth University



Most of the work still to be done in science and the useful arts is precisely that which needs knowledge and cooperation of many scientists . . . that is why it is necessary for scientists and technologists to meet . . . even those in branches of knowledge which seem to have least relation and connection with one another.

Antoine Lavoisier - 1793

If Watson had been killed by a tennis ball, I am reasonably sure I would have not solved the structure alone, but who would?

Francis Crick - 1974

Collaborative Research in the Life Sciences

1950s

1970s

1990s

2000 and beyond



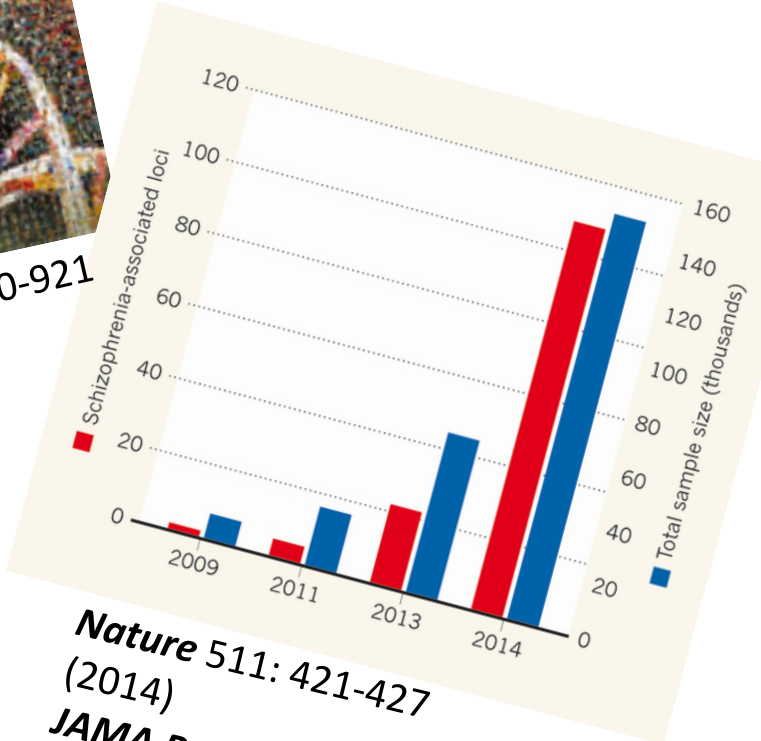
The RNA Tie Club



PNAS 70:3240-44
(1973)



Nature 409:860-921
(2001)



Nature 511: 421-427
(2014)
JAMA Psychiatry 10-1-14

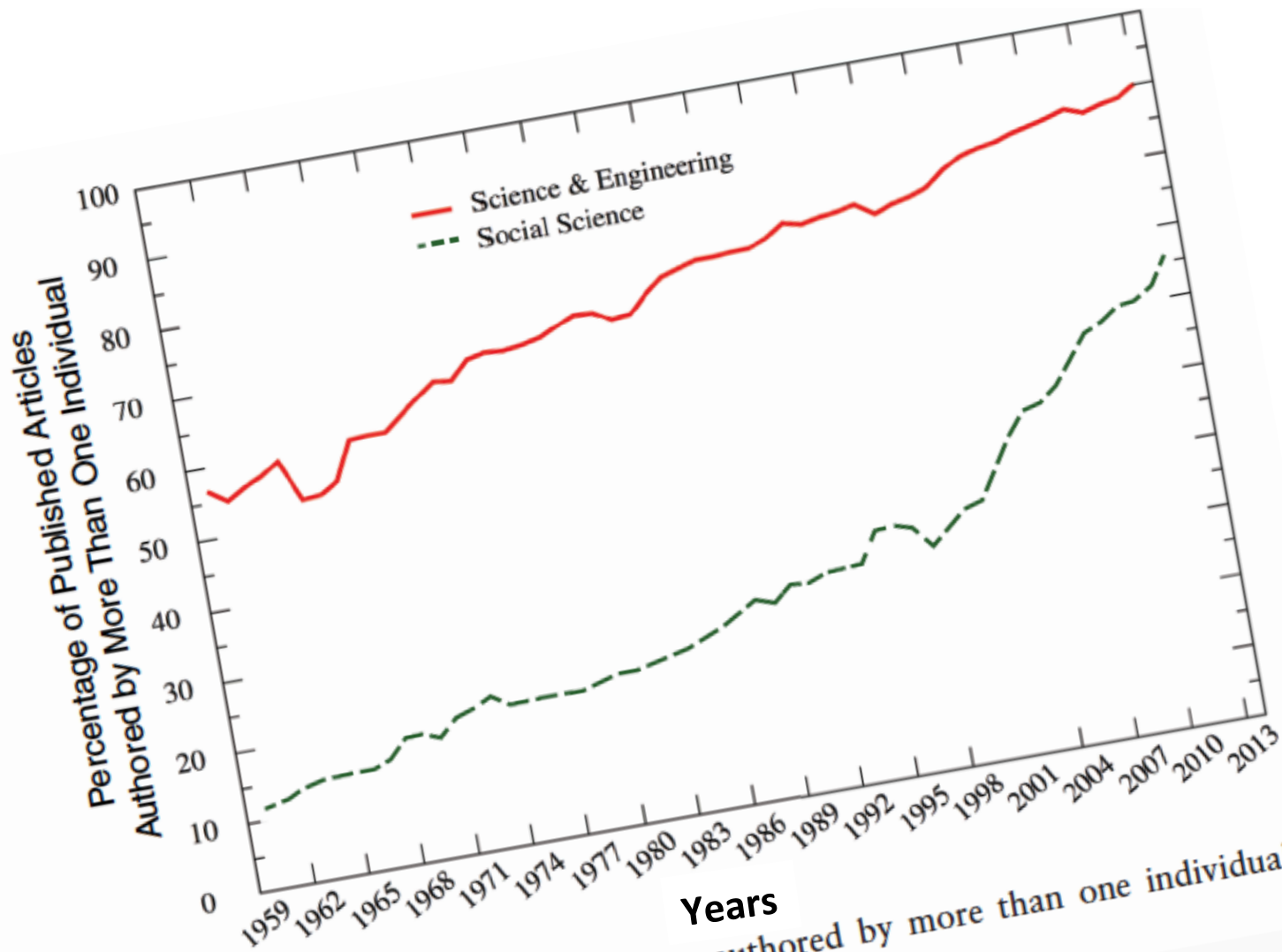


FIGURE 1-1 Percentage of publications authored by more than one individual, 1960–2013.



The body's wonder molecules:
Where are they now? p. 1188

New law, new hope for U.S.
STEM education p. 1209

Spin correlations under the
microscope pp. 1253-1264

Science

\$15
16 SEPTEMBER 2016
sciencemag.org

AAAS

SPECIAL ISSUE

THE NEW HARVEST

Plant translational biology gives
fresh skills to familiar crops



nature

THE INTERNATIONAL WEEKLY JOURNAL OF

OUTLOOK
Kidney
cancer



Hidden talent

Hawaiian crow joins
New Caledonian crow
as master tool user PAGE 403

BUILT ENVIRONMENT

THE GREAT INDOORS

The science of making homes
and offices more healthy

PAGE 294

AGRICULTURE

GROWING PLACES

Fifty years of data point
to shift in food R&D

PAGE 301

INSIGHT

PROTEIN WORLD

Reviewing the hottest topics
in protein science

PAGE 319

NATURE.COM/NATURE
15 September 2016



Drivers of Collaboration

Funders and other agencies

Communicating research

Institutions

Funders and Other Agencies

Co-PI status

Funding Opportunity Announcements (RFPs: “Collaborative”)

Infrastructure grants: e.g, NCI CCSG, NIH Clinical and Translational Award

Accreditation agency (LCME)

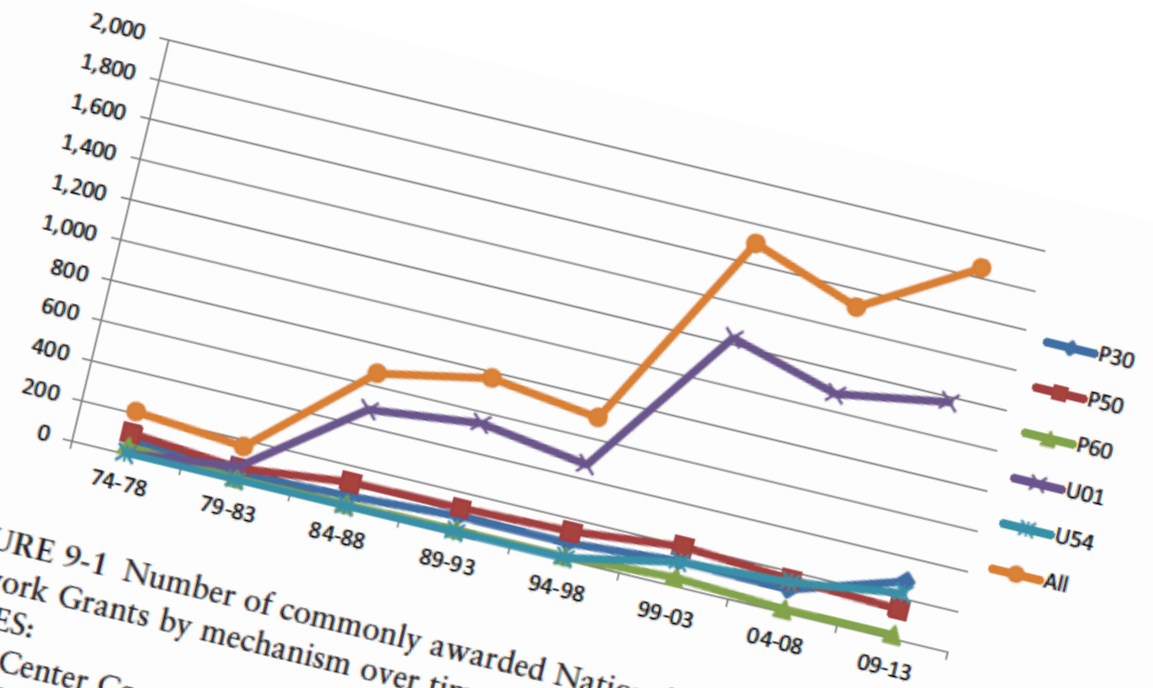


FIGURE 9-1 Number of commonly awarded National Institutes of Health Center/Network Grants by mechanism over time.

NOTES:
P30 = Center Core Grants
P50 = Specialized Center
P60 = Comprehensive Center
U01 = Research Project Cooperative Agreement
U54 = Specialized Center Cooperative Agreement
SOURCE: Unpublished data provided by the National Institutes of Health



Institutions:

Premium placed on interdisciplinary research

Strategic planning

Cluster hires

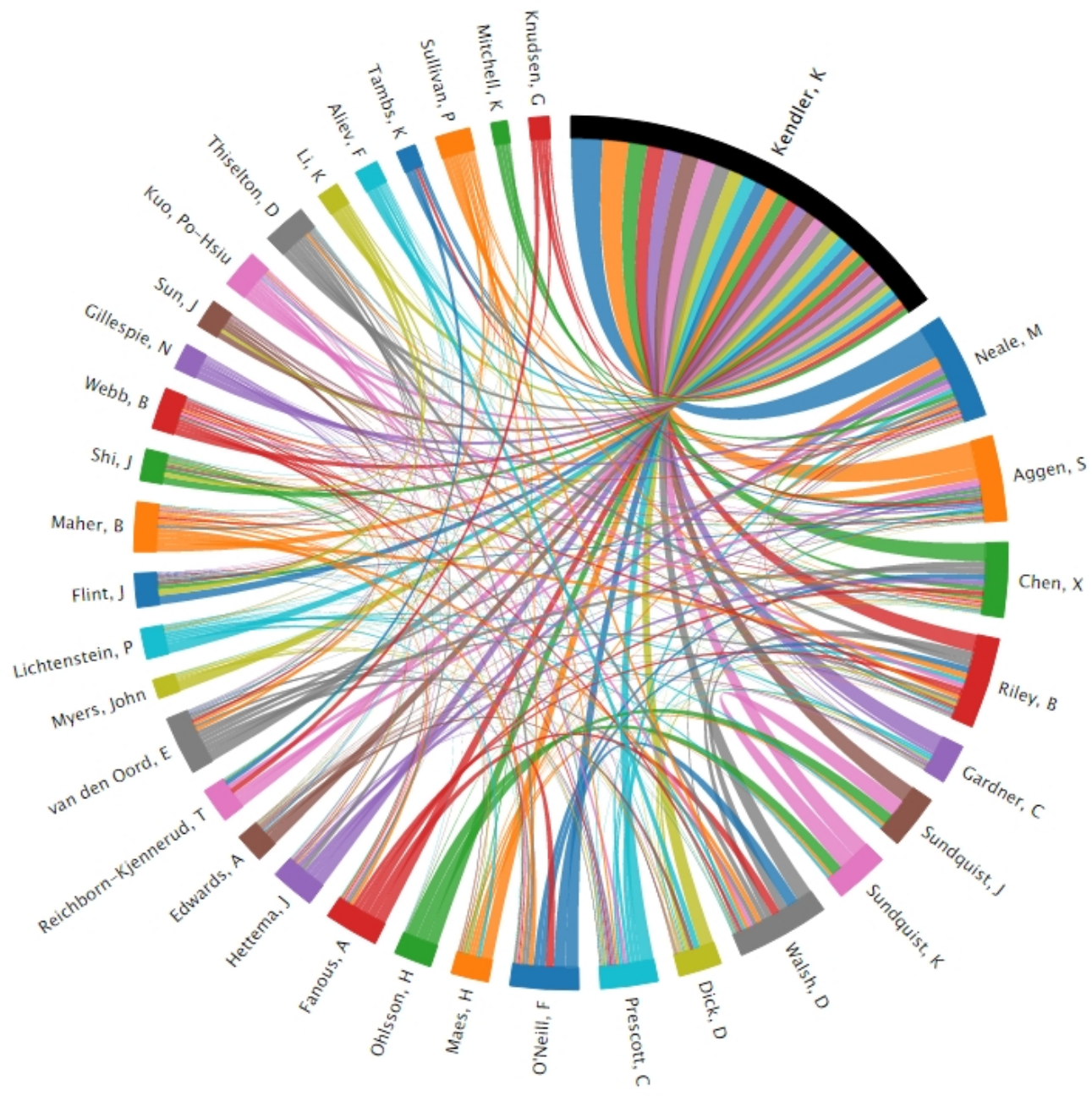
Promotion and Tenure

Technology transfer: GAP/Proof of Concept Grants

New infrastructure

The approved plans support multi-disciplinary teams working in large multi-use, collaborative spaces and will foster the generation of new ideas and solutions to real-life problems. **UTA President Vistasp Karbhari**





Communicating Research

Authorship guidelines

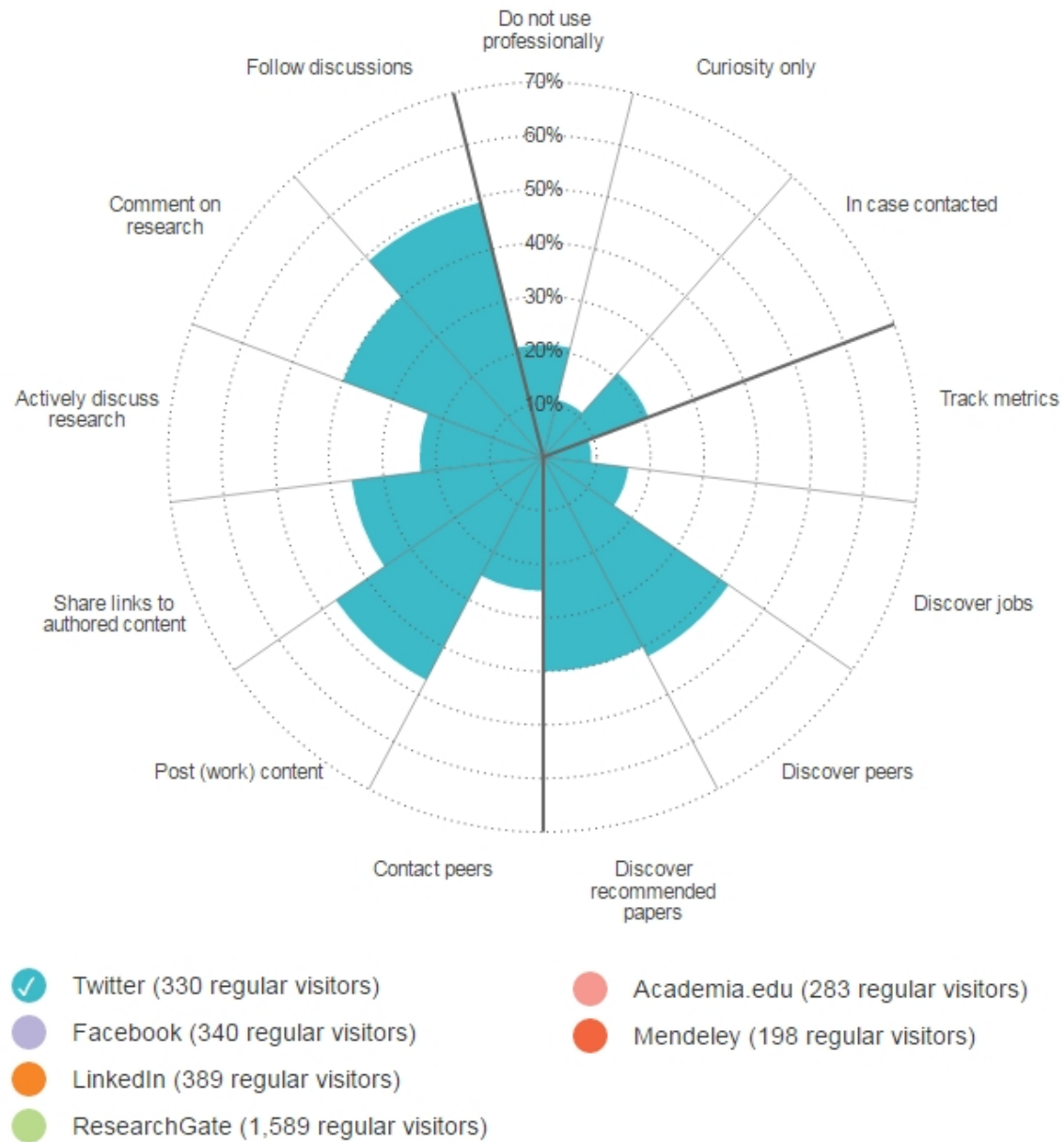
- Guarantor and Contributorship Model
- Accountability requirement
- All author submission approval
 - Permitting identification of “equal” authorship

Preprint servers

Social Media

Interactive: Why scholars use social media

In *Nature's* survey, a subset of scholars who said they 'regularly visited' social media sites were quizzed in detail about their activities.



Nature 14 August 2014

Making a Well-informed Decision to Collaborate

Do I really need this collaboration? For my own work? Advancement?

Can I contribute significantly even if there is no expected impact on my own work?

Do I have the time?

What might impede or compromise the collaboration? Any deal breakers?

Funding?

What do I know and what can I find out about my potential collaborator?
(Respect, trust, compatibility, accessibility)



Challenges

Sharing the credit , responsibility, and reward

Competing Interests

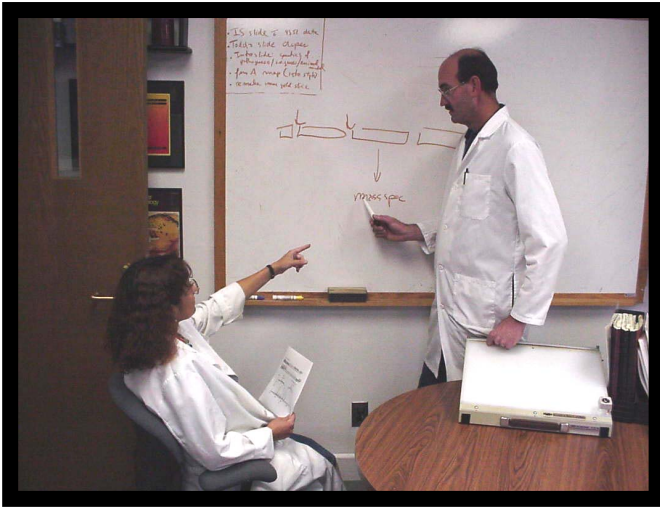
Existing Intellectual Property

Rigor and Reproducibility: data storage, access, and sharing

Risk Management

Dual Use Research of Concern

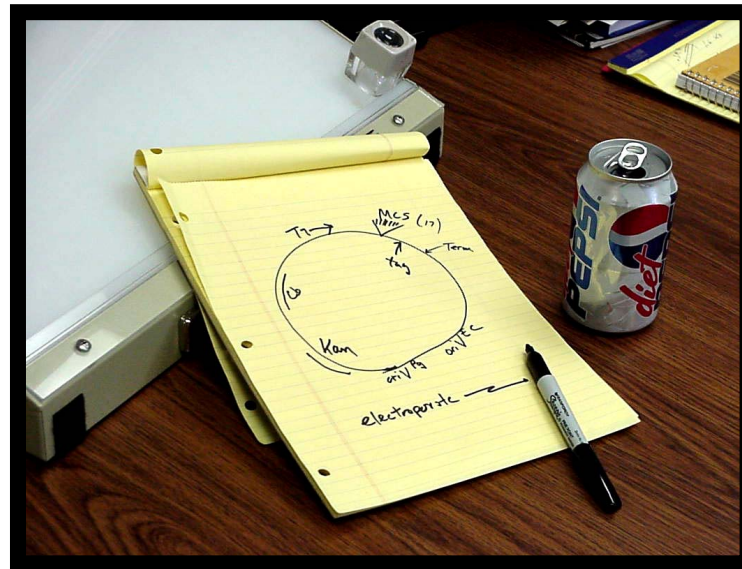
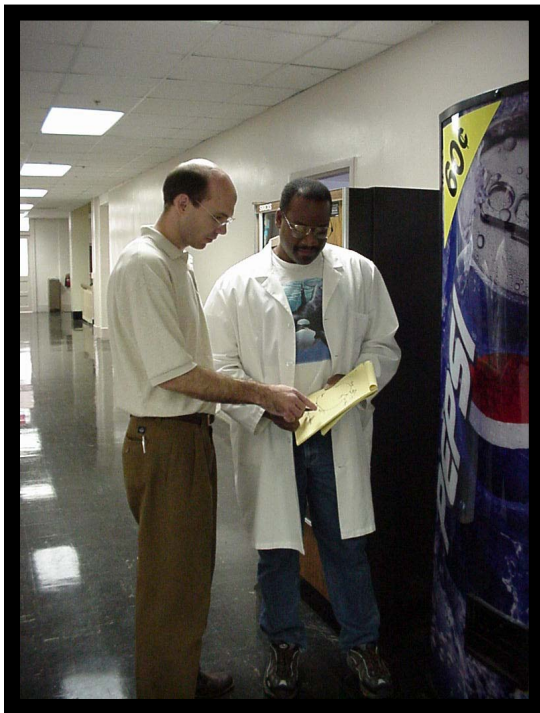
Export Control

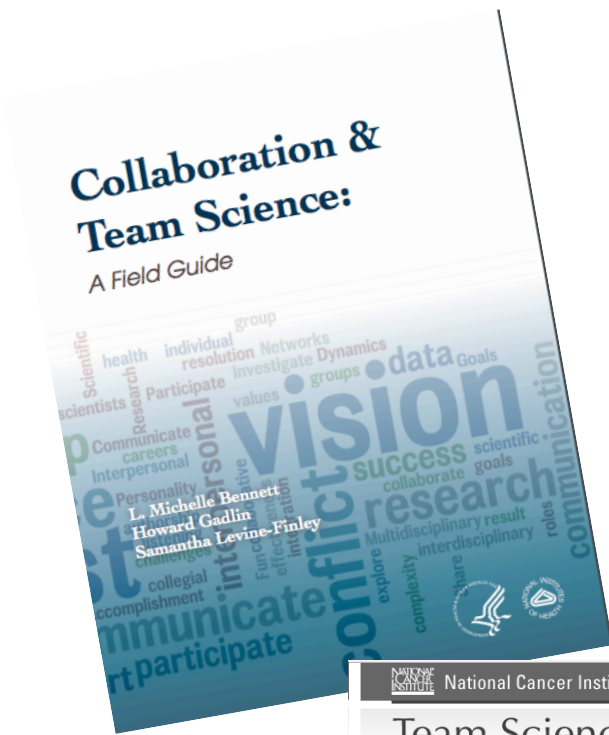


Collaboration plays a major role in scientific research

Realistic needs assessment is key

Plan, formalize, communicate





National Cancer Institute at the National Institutes of Health | www.cancer.gov

Team Science Toolkit

An interactive website to help you support, conduct and study team-based research.

Home | About Team Science | About the Toolkit | **Discover** | Contribute | Connect | News & Events | About Us

Data Sharing and Reuse: Expanding Our Concept of Collaboration

In this blog entry, Dr. Betsy Rolland highlights the current trend toward data sharing and reuse. She discusses the need for new research to learn how to maximize efficiency and effectiveness and successfully address a range of challenges including infrastructure, incentives, data privacy, and the broader culture of science.

[> Learn More](#)

Discover what resources are available.

Search for a keyword [Search](#)
Advanced Search

OR

Browse by type of resource or goal [Browse](#)

Contribute new resources to the Toolkit.

Share your knowledge by uploading tools and information about the practice or study of team science.

Connect to colleagues across disciplines.

Join expert discussions on the blog, add your name to the directory, or stay up-to-date on News and Events.

What Users Are Saving »

Recently Added Resources

- RD and Team Building Senior Program Administr...
- SESYNC Postdoctoral Fellowships and Collabora...
- Microbiology Leaves the Solo Author Behind

The Toolkit currently includes 2672 resources.

[Login](#) | [Register](#)

Resources

- Tools
- Measures
- Bibliography
- Editors' Picks

Connections

- Recent Blog Posts
- Listserv
- Communication Materials
- Team Science Experts

[in](#) [f](#) [v](#) [T](#) [T](#) [T](#)

[Email this page](#)

Click images to access material