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)


JAMA Psychiatry 10-1-14
FIGURE 1-1 Percentage of publications authored by more than one individual, 1960–2013.
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SOURCE: Unpublished data provided by the National...
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.

**Diagram:**
- **Follow discussions:** 70%
- **Curiosity only:**
- **Comment on research:**
- **In case contacted:**
- **Actively discuss research:**
- **Track metrics:**
- **Discover jobs:**
- **Discover peers:**
- **Discover recommended papers:**
- **Contact peers:**
- **Posi (work) content:**
- **Share links to authored content:**

**Social Media Usage:**
- **Twitter** (330 regular visitors)
- **Facebook** (340 regular visitors)
- **LinkedIn** (389 regular visitors)
- **ResearchGate** (1,589 regular visitors)
- **Academia.edu** (283 regular visitors)
- **Mendeley** (198 regular visitors)

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*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