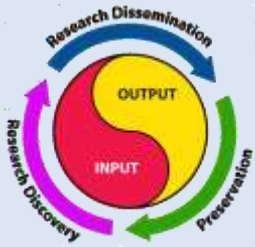
# “The times, they are a changing.”

ISO Staff Meeting

November 10, 2010



# VIP Team


Paula Deutsch

Marilyn White

Mylene Ouimette

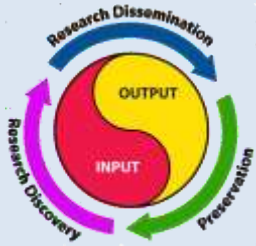
- What “VIP” is
- What the VIP team has done
- What we hope to accomplish

# 3 Words:

## Collaboration, Collaboration, Collaboration

- Partnerships with peer organizations
- Collaboration with other parts of NIST
- ISD services integrated into the workflow of NIST's researchers
- Role in facilitating the collaborations of NIST scientists

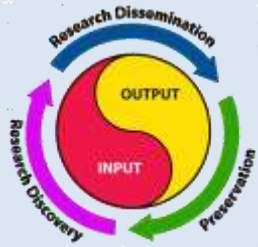
2006 Visioning Exercise



# More With Less

- Decisions about what services ISD might and might not provide
- Choices about who to target
- Decisions, based on environment and user analyses

2006 Visioning Exercise



# Steps of a Generic Scientific Workflow

1. Define Problem

Work Flow Exercise 2008

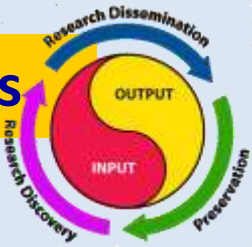
2. Design Experiment

3. Prepare Experiment

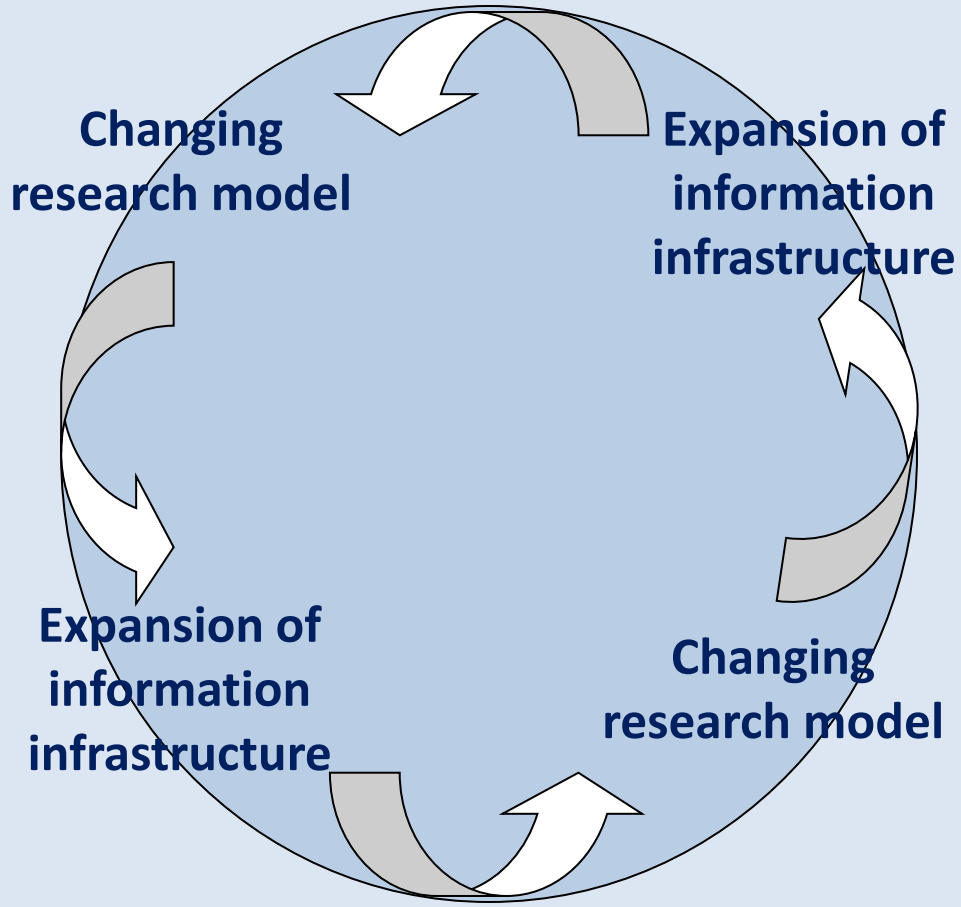
4. Conduct Experiment

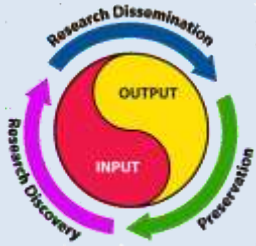
5. Analyze Results

6. Disseminate Results



# Trends That Support and Motivate Each Other:

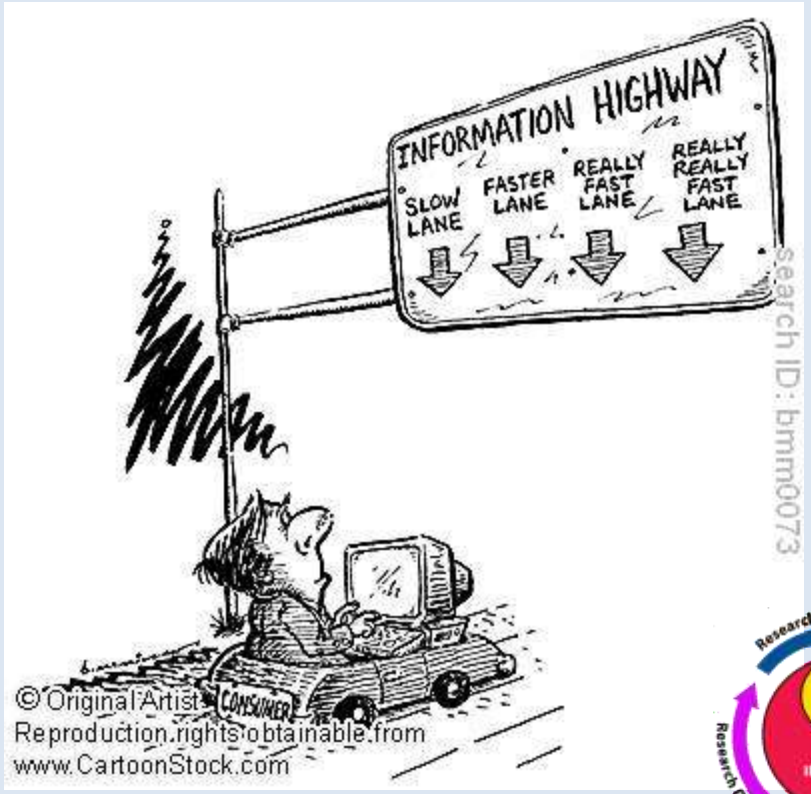


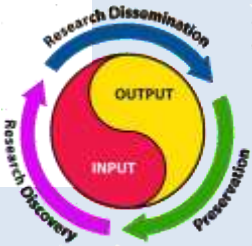



# What is the Information Infrastructure?


". . . all of the people, processes, procedures, tools, facilities, and technology which supports the creation, use, transport, storage, and destruction of information"

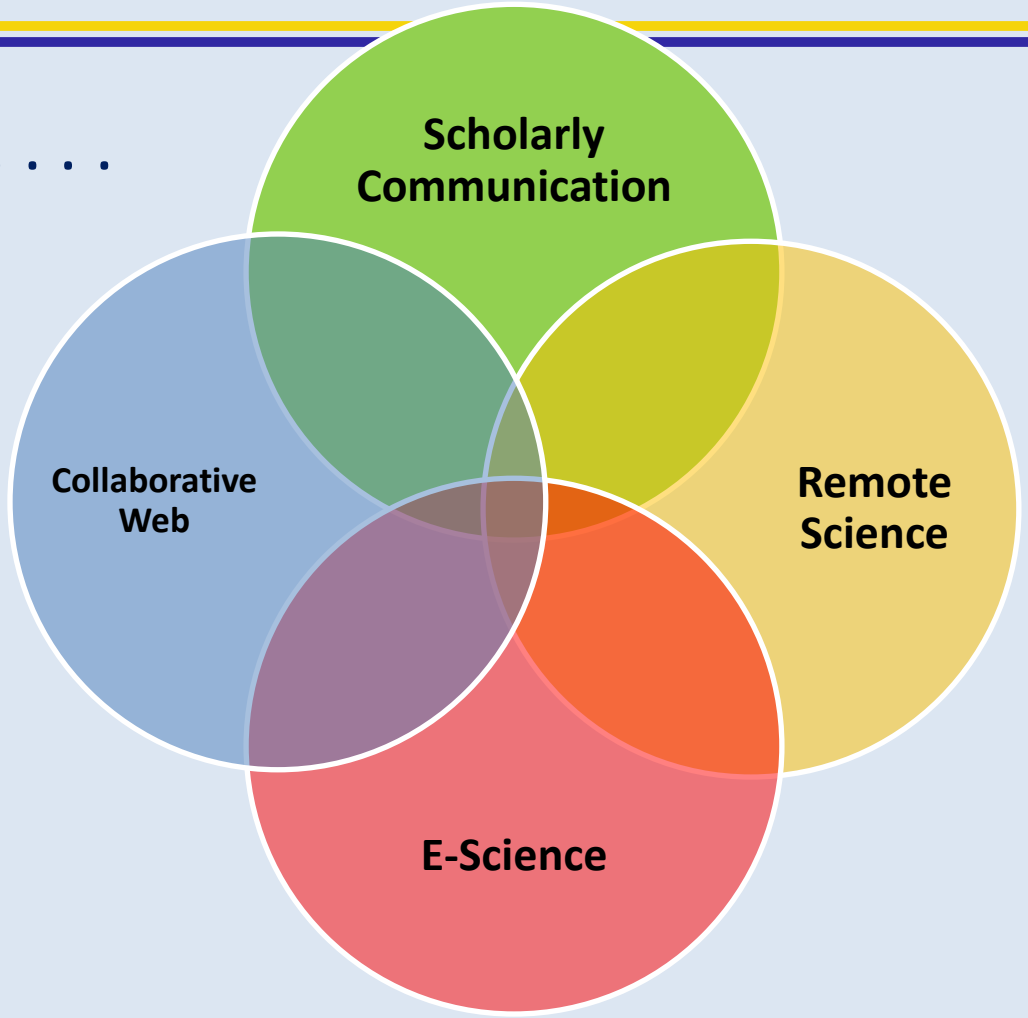
Wikipedia, 2010



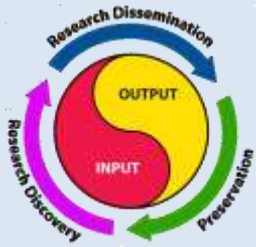



# Scholarly Information Infrastructure

Starts with. . . .




. . .and keeps adding. . .



# Scholarly Communication includes

Journals (print & e-)

Pre-prints/Working papers

Annotated content

Discussion forums

Books

BLOGS

DATA

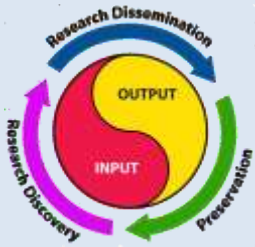
Encyclopedias

Dictionaries

Reviews

Professional Scholarly Hubs

ARL Current Models of Digital Scholarly Communication, 2008

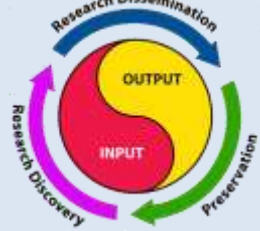


# Collaborative Web

- Social networking
  - Many sites still emerging
- Wikis
  - Laboratory notebooks
  - Annotation projects
- Other uses:
  - Blogging
  - File sharing
  - Voting/ranking
  - Tagging

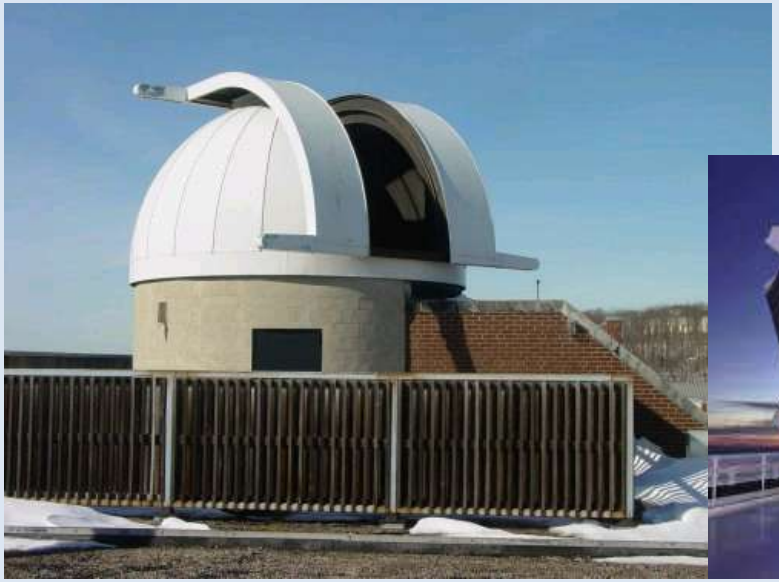






# Remote Science

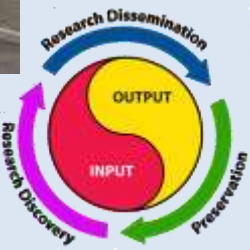
- Remote science is operating equipment & experiments, *remotely*
- Emerging area, but growing need due to costs



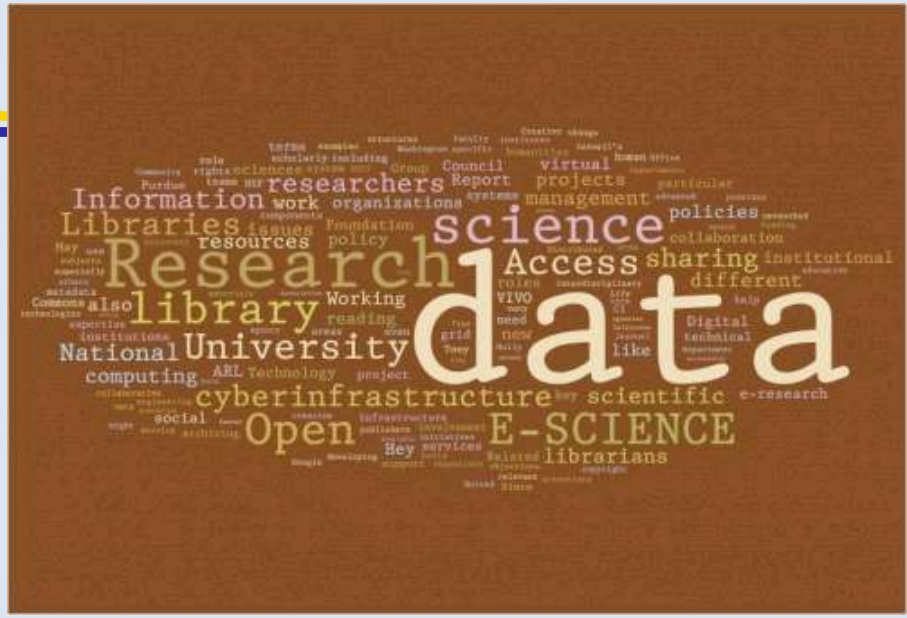
Observatory

Telescope


Atomic Force Microscopy



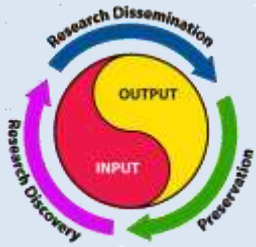
# E-Science



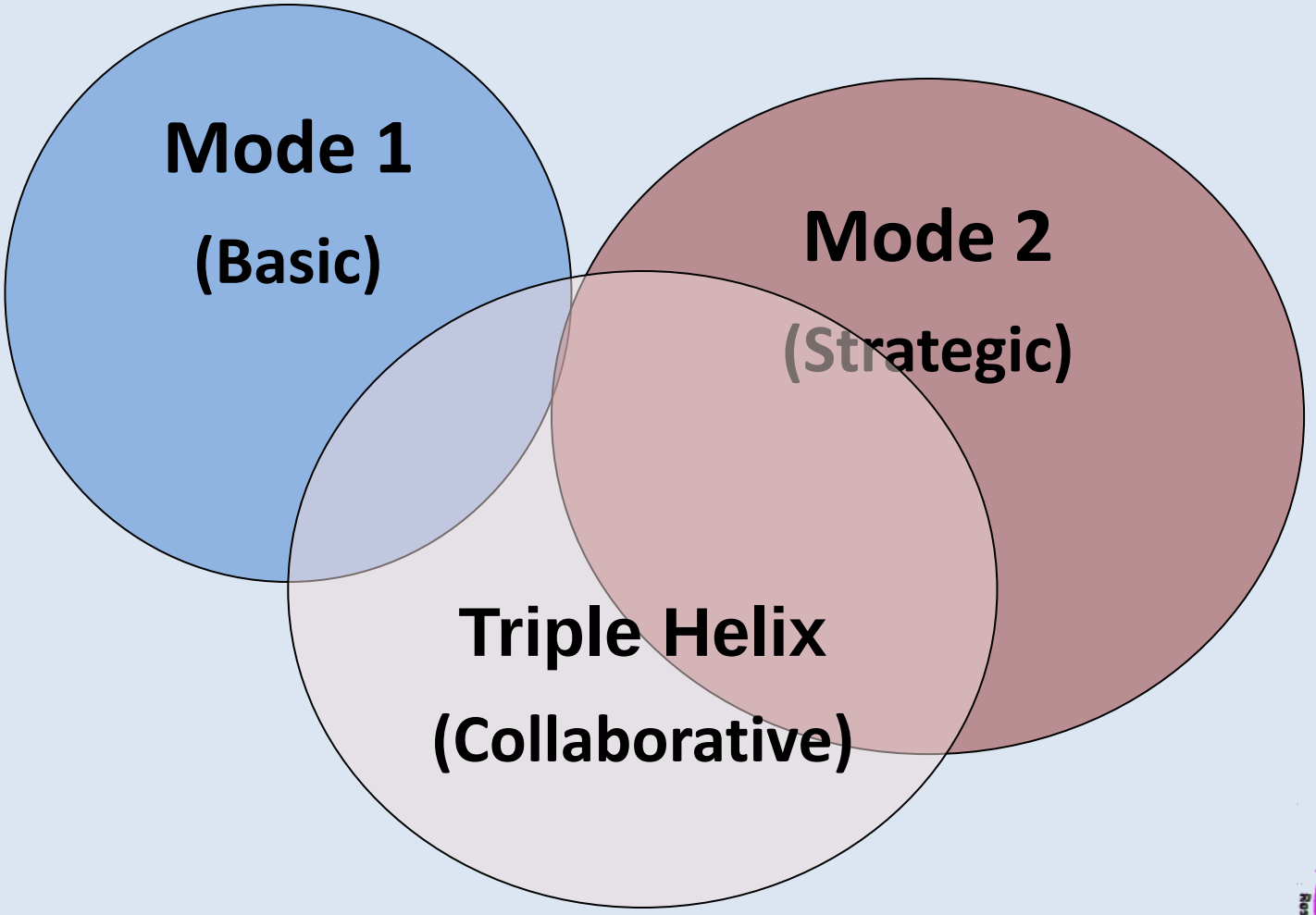

E-Science includes several aspects/functions:

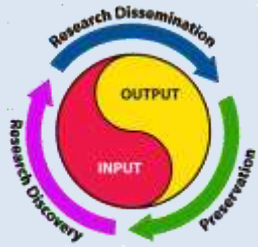
- "Big computational science"
- Very large data collections
- Networked & team science
- Computation, visualization, collaboration, data curation, analysis

Definitions from *The Data Deluge: Can Libraries Cope with e-Science?* and ARL's *E-Science and Data Support Services: A Study of ARL Member Institutions*



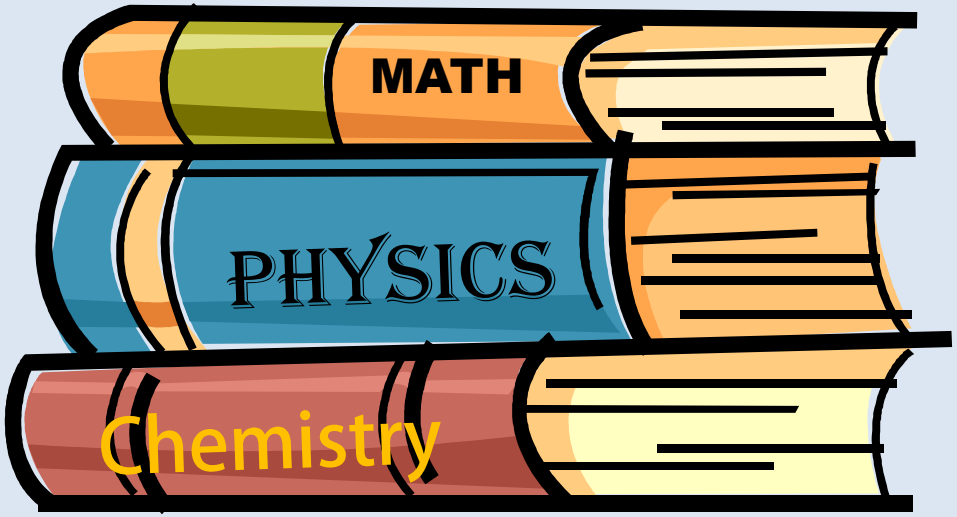
# Three Research Modes

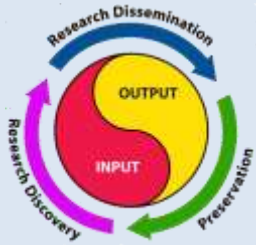


# Mode 1 (Basic)

- Breaks down according to disciplines of the natural sciences
- Clear distinction between basic research, applied research, and development



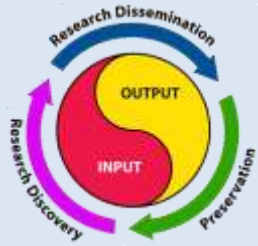



# Mode 2 (Strategic)

- Problem-based
- Focus on innovation and application
- Driven by social and economic values

# Mode 2 (continued)

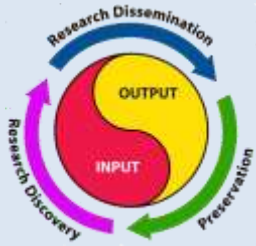
- “Transdisciplinary”
- Participative (researchers and stakeholders)
- Research topics are constantly evolving

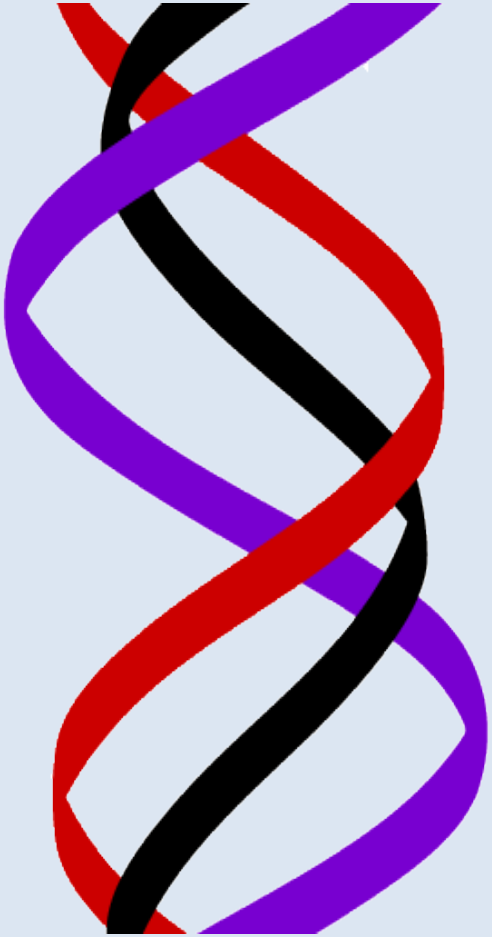
# Why Interdisciplinary?

"As modern research methods have become more specialized and the true complexity of today's most pressing…issues…is revealed, collaborations among scientists trained in different fields have become essential for exploring and tackling these problems …specialization of research methods has made interdependence, joint ownership, and collective responsibility between and among scientists near requirements."

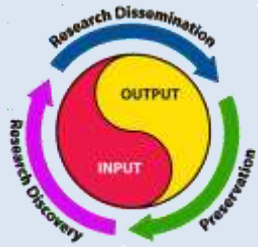
NIH Field Guide for Team Science, August 2010



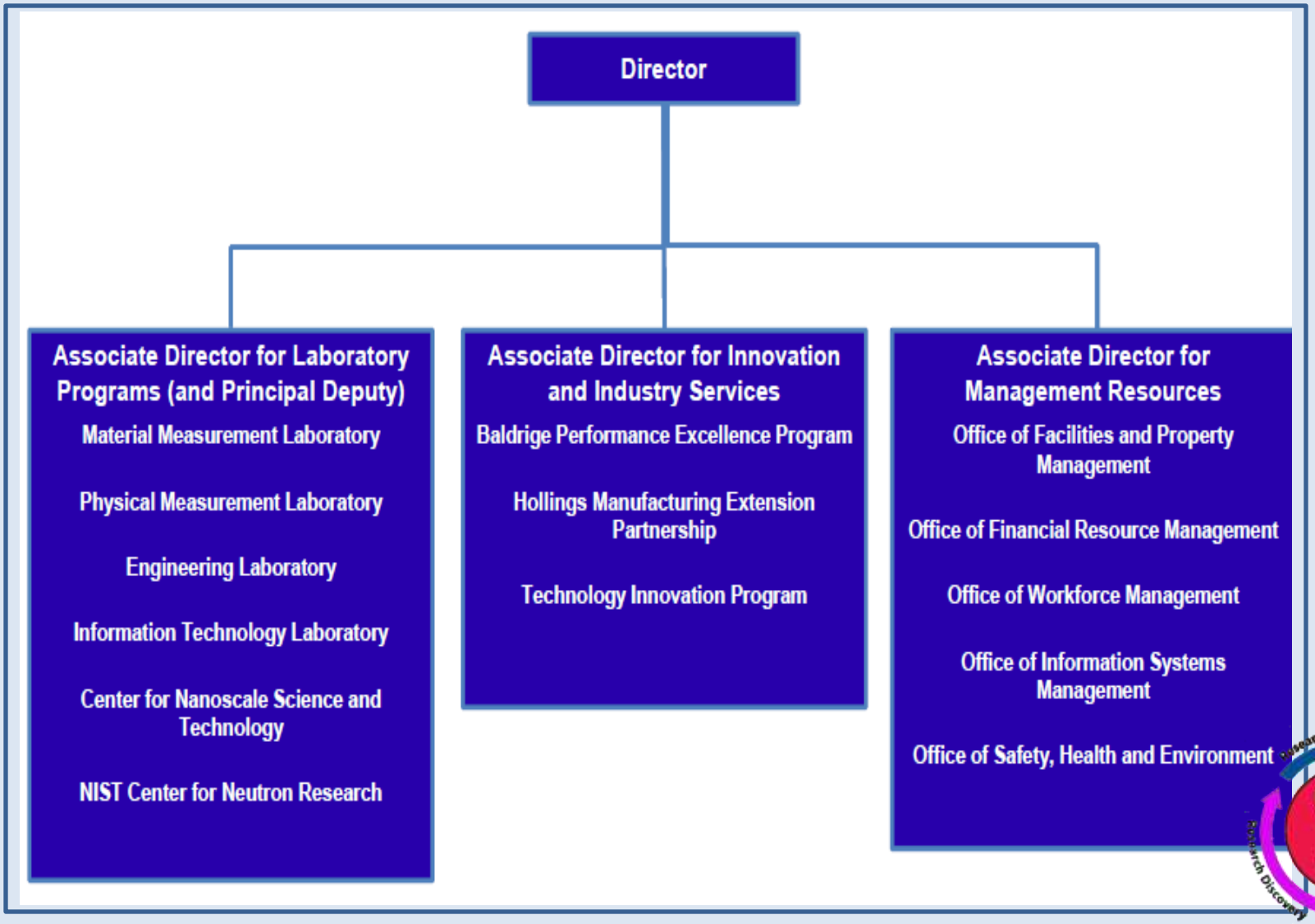
# Triple Helix

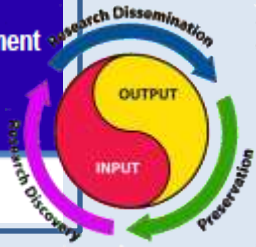


- Overlapping spheres of university-industry-government
- Closer interaction between research institutions, private industry, government institutions



# NIST Organizational Structure



# Pat Gallagher Says…

"…we must have fully empowered leadership and an organizational structure optimized for a growing research agency that thrives on interdisciplinary collaboration and responsiveness."

Pat Gallagher Town Meeting March 5, 2010

"I've asked [senior management] to look not just at their organization, but their engagement and program planning, a whole set of issues because NIST is being asked to play a critical role in big multi disciplinary urgent activities and you have to ask yourself 'Are you set up to manage yourself into those [activities] …My job is to challenge the management team to take a look at all the assets at their disposal and make sure it's optimized."

Federal News Radio interview, December 17, 2009