



Scientific Integrity at EPA

SAB

March 31st, 2016

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Scientific Integrity Official



**“...CONDUCT THEMSELVES WITH THE
OPENNESS AND INTEGRITY WHICH ALONE
CAN ENSURE PUBLIC TRUST IN THE
AGENCY”**



**WILLIAM
RUCKELSHAUS, 1983**

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Principles of Scientific Integrity

National Partnership Council, 1999

- 1. Ensure that their work is of the highest integrity.**
- 2. Represent their own work fairly and accurately.**
- 3. Represent and acknowledge the intellectual contributions of others.**
- 4. Avoid conflicts of interest and ensure impartiality.**
- 5. Be cognizant of and understand the specific programmatic statutes that guide their work.**
- 6. Accept the affirmative responsibility to report any breach of these principles.**
- 7. Welcome differing views and opinions on scientific and technical matters.**

“...restore science to its
rightful place...”

January 2009



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March 2009 - Scientific Integrity Memorandum - 120 days for OSTP to

“...develop a plan aimed at ensuring the integrity of federal science...”

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EPA Scientific Integrity Policy

- **Draft Policy – August 2011**
- **Public Comment Period**
- **Final Policy in February 2012**



What is Scientific Integrity?

- **Adherence to professional values and practices, when conducting, communicating, and applying the results of science**



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- **Ensures objectivity, clarity, reproducibility, and utility**



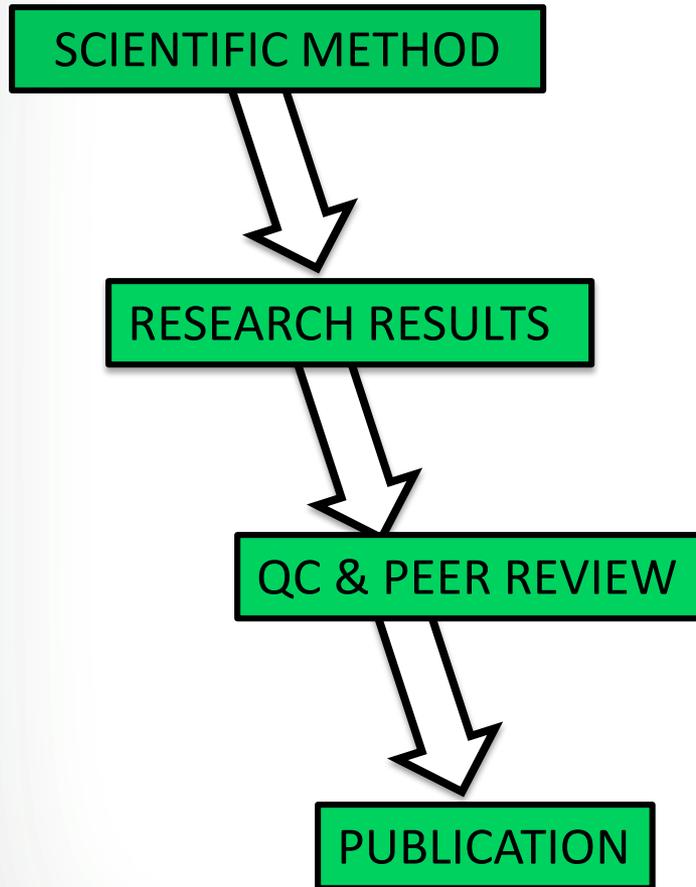
What is Scientific Integrity?

- **Adherence to professional values and practices, when conducting, communicating, and applying the results of science**
- **Ensures objectivity, clarity, reproducibility, and utility**
- **Provides insulation from bias, fabrication, falsification, plagiarism, outside interference, and censorship**



Scientific Misconduct

- **2003 - Policy and Procedures for Addressing Research Misconduct**
- **Adjudicated by EPA Inspector General**
- **Plagiarism is typically delegated to Scientific Integrity**



RESEARCH INTEGRITY

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graph TD; A[RESEARCH INTEGRITY] --> B[SCIENTIFIC METHOD]; B --> C[RESEARCH RESULTS]; C --> D[QC & PEER REVIEW]; D --> E[PUBLICATION]
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SCIENTIFIC METHOD

RESEARCH RESULTS

QC & PEER REVIEW

PUBLICATION

RESEARCH INTEGRITY

SCIENTIFIC METHOD

RESEARCH RESULTS

QC & PEER REVIEW

PUBLICATION

SUPERVISE



RESEARCH INTEGRITY

SCIENTIFIC METHOD

RESEARCH RESULTS

QC & PEER REVIEW

PUBLICATION

SUPERVISE, COMMUNICATE



RESEARCH INTEGRITY

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PUBLICATION

SUPERVISE, COMMUNICATE, AND USE



SCIENTIFIC INTEGRITY

RESEARCH

SCIENTIFIC METHOD

RESEARCH RESULTS

QC & PEER REVIEW

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Ensuring Scientific Integrity

**Validation
of Scientific
Methods**

**Qualified
Scientists**

**Accreditation
of Labs and
Facilities**

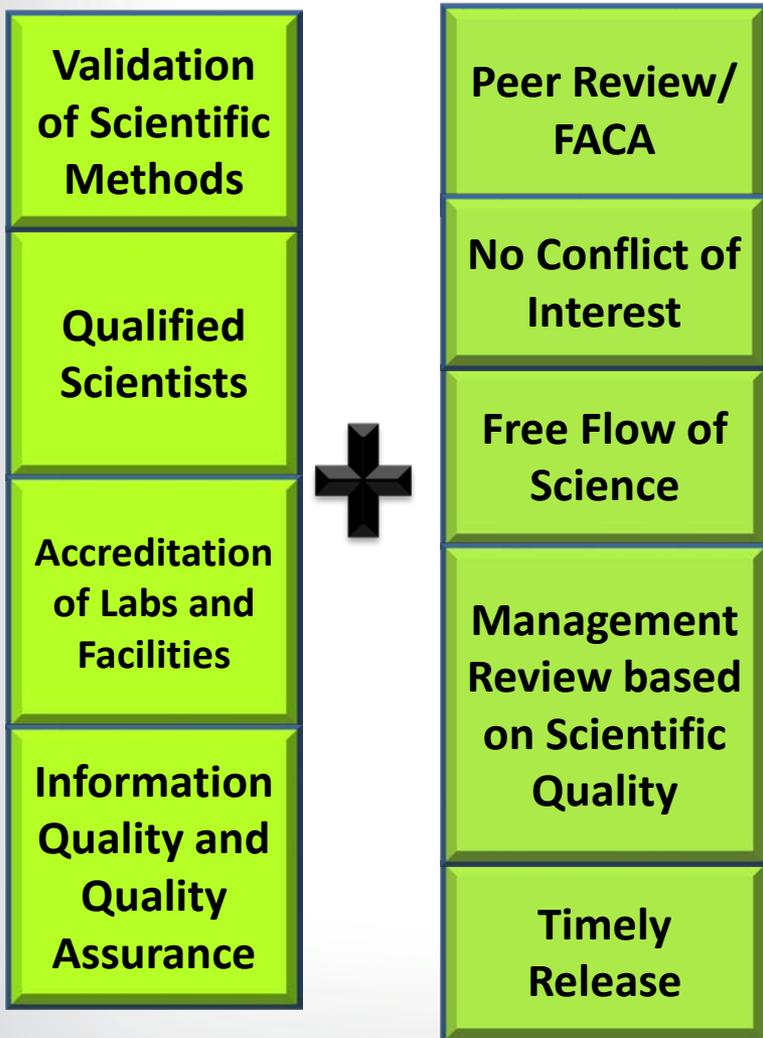
**Information
Quality and
Quality
Assurance**



ISO 17025 Implementation Program

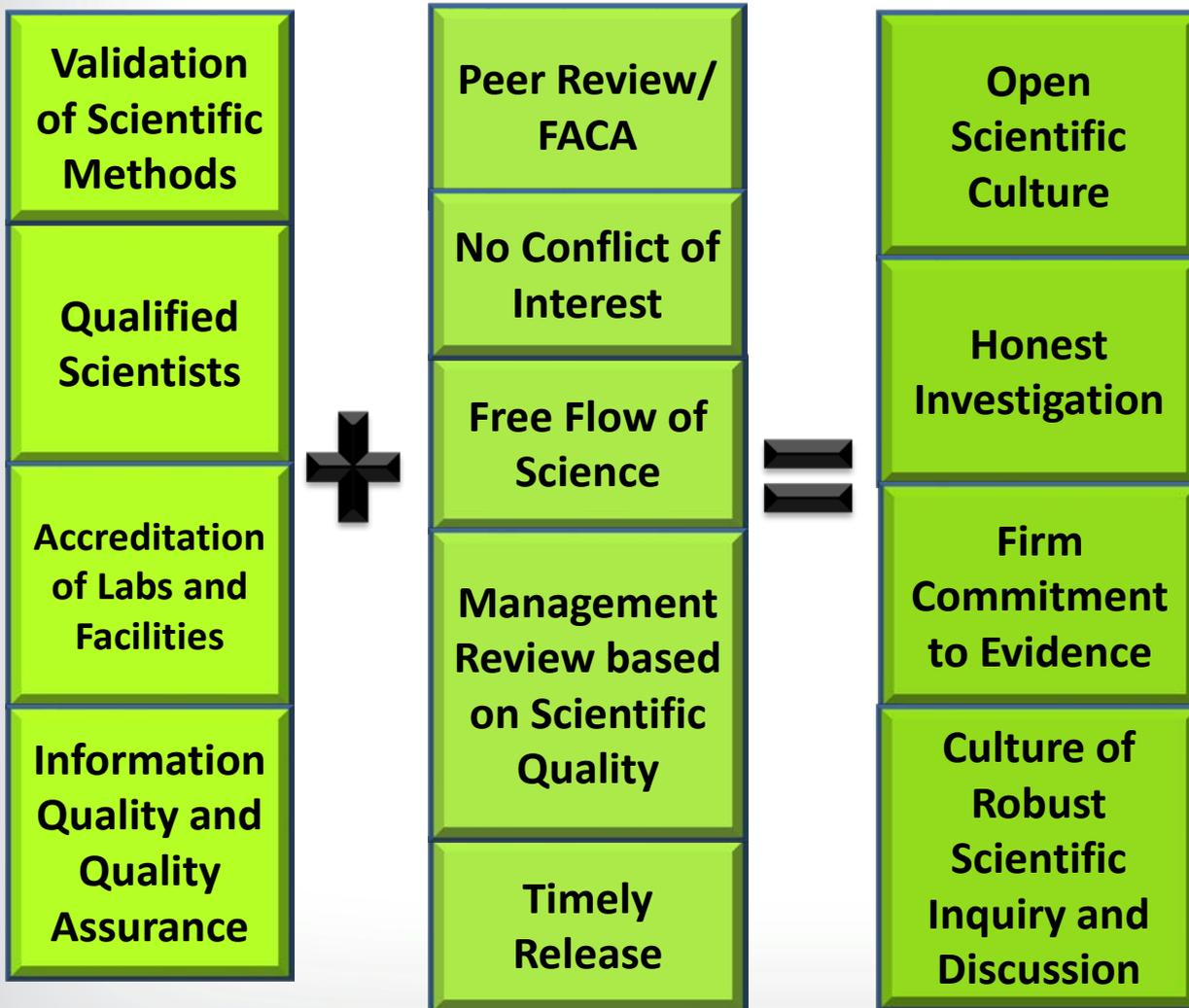


Ensuring Scientific Integrity



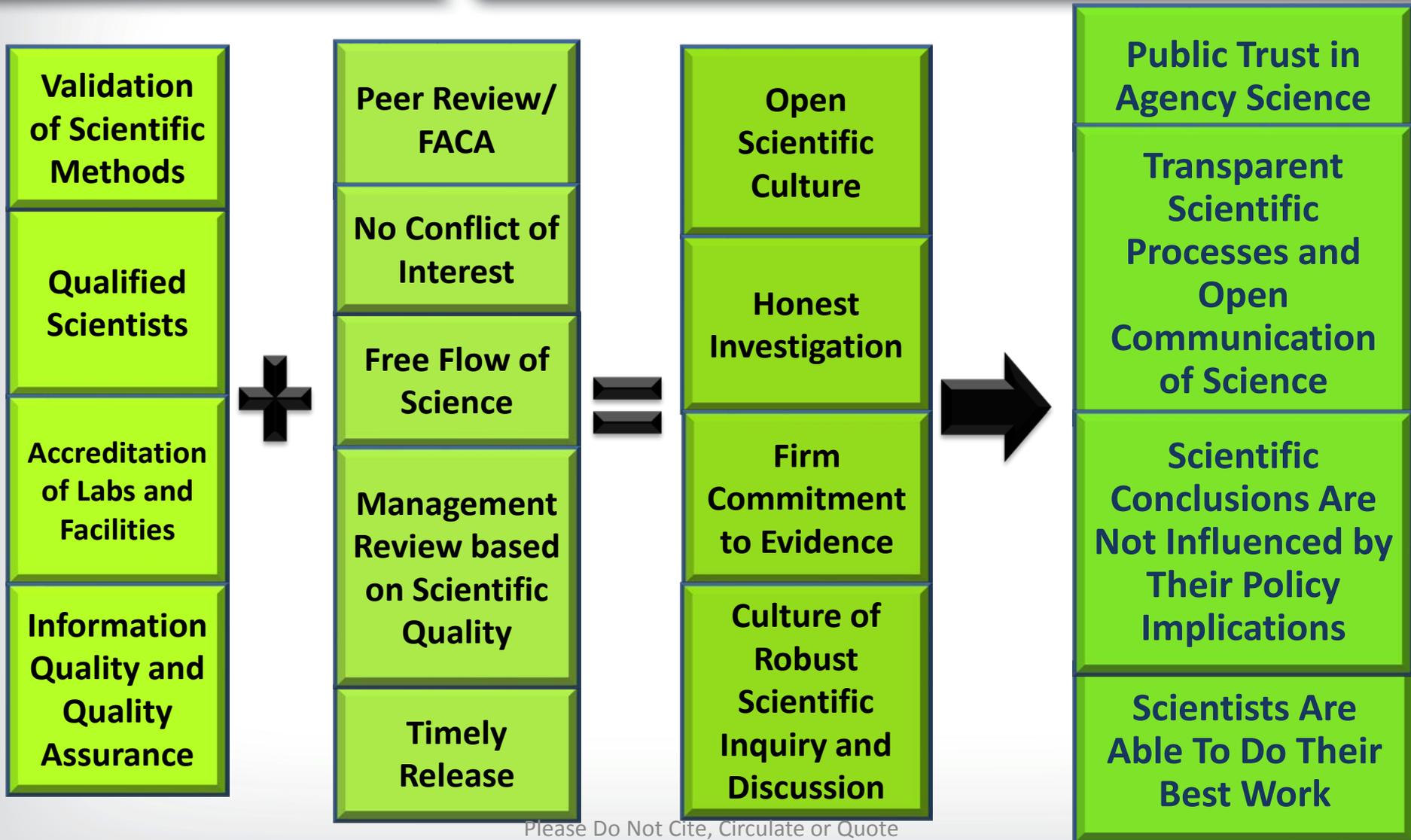


Ensuring Scientific Integrity





Ensuring Scientific Integrity





Who does the Policy apply to?

All employees, contractors, grantees, volunteers and collaborators who

- **Conduct, supervise, manage, or influence scientific activities;**
- **Communicate information in an official capacity;**
- **Utilize scientific information in making Agency policy or management decisions.**



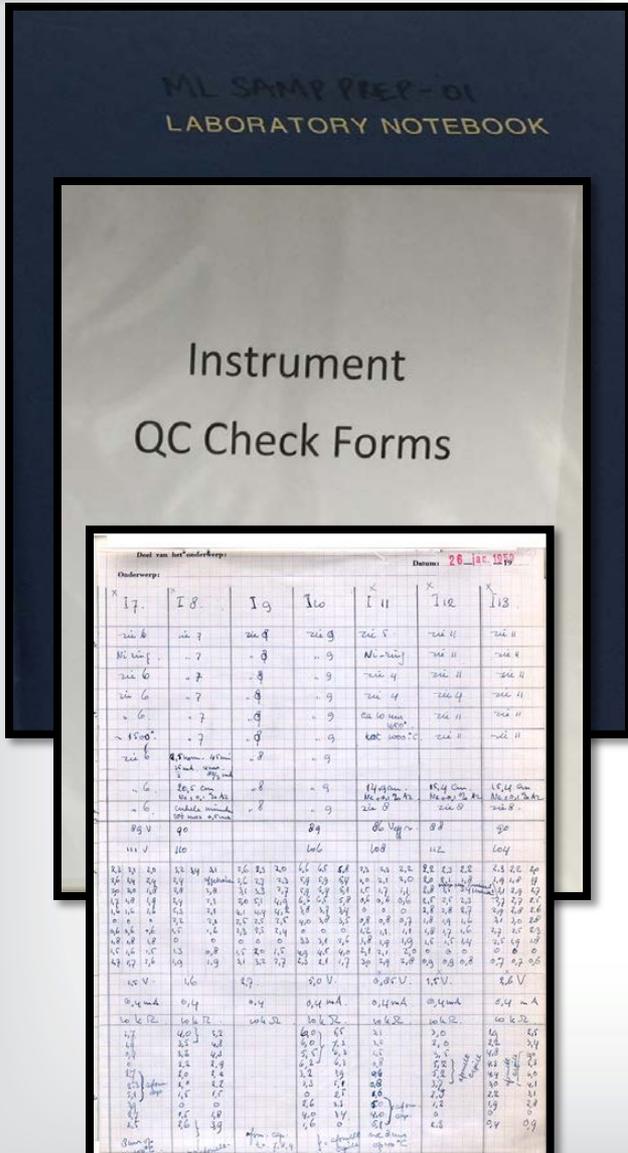
EPA Scientific Integrity Policy

- **Promoting a Culture of Scientific Integrity at the EPA**
- **Release of Scientific Information to the Public**
- **Peer Review and the Use of Federal Scientific Advisory Committees**
- **Professional Development of Government Scientists**



Strengths of the EPA Sci Policy

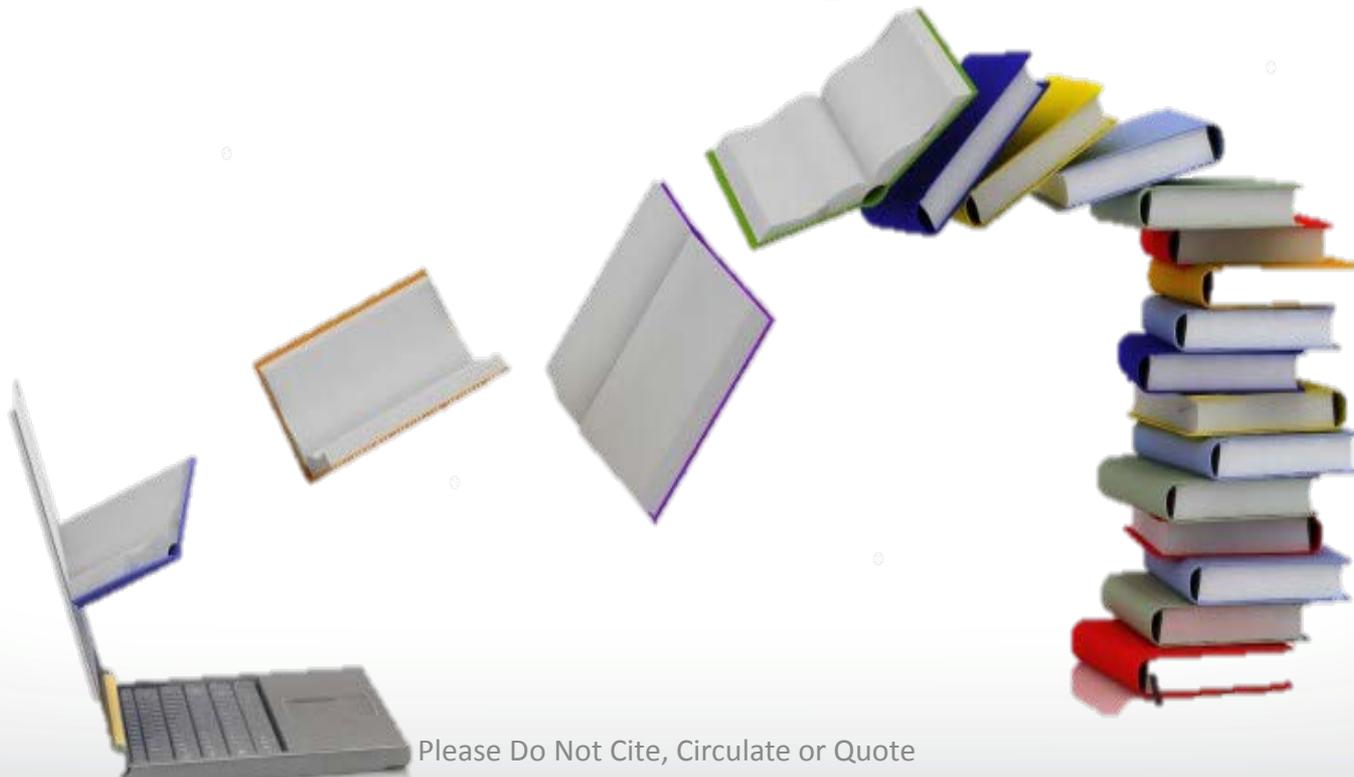
- **Fosters honest investigation, open discussion, refined understanding and a firm commitment to evidence**
- **Requires adherence to applicable Agency information quality assurance policies and procedures**
- **Requires adherence to Agency documents on use and characterization of science in policy development**
 - **Guidance and handbooks on risk characterization**





Strengths of the EPA Sci Policy

- **Prohibits all EPA employees from suppressing, altering, or otherwise impeding the timely release of scientific findings.**



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Strengths of the EPA Sci Policy

- **Requires EPA expand and promote access to scientific information**



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- **Prohibits Agency leadership from intimidating or coercing scientists to alter scientific data, findings or professional opinions.**





Strengths of the EPA Sci Policy

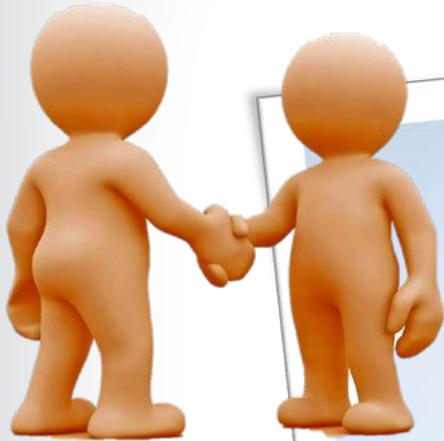


Personal Views Exception

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Strengths of the EPA Sci Policy



Personal Views Exception



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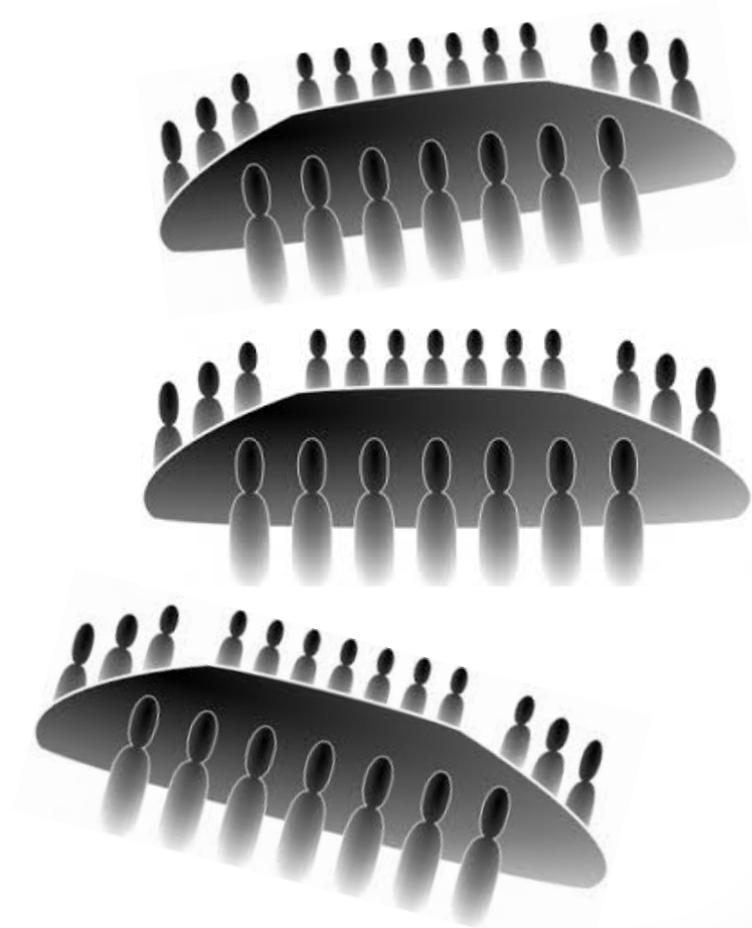
Strengths of the EPA Sci Policy

Right of Last Review



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- **Selection of FAC
Members of scientific
or technical FAC**



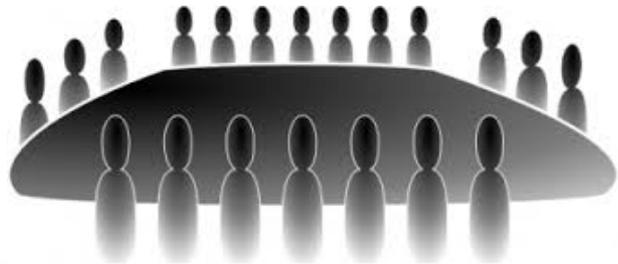


Strengths of the EPA ScIC Policy

- **Selection of Scientific and Technical FAC Members is transparent and based on scientific credentials**

- **Members of scientific and technical FACs should be appointed as special government employees**

- **All reports, recommendations, and findings of FACs are solely FAC findings and not subject to Agency revision**





Annual Activities

- **Scientific Integrity Committee**
- **Union Working Group**
- **Annual Meeting**
- **Annual Report**
- **Stakeholder Meetings**
- **Training**
- **Contractor - Managed Peer Review**
- **Quarterly Meetings With the OIG and OGC**
- **Certify Policy Compliance**

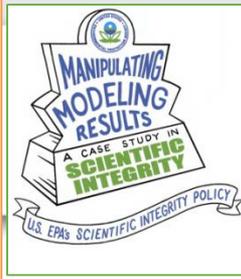
- **24 Deputy Scientific Integrity Officials representing each of the Agency's Program Offices and Regions**
- **Mostly Deputy Assistant Administrators, Regional Science Liaisons and Regional Lab Directors**





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TRAINING



- **Training Objectives –**
 1. **Know the policy exists**
 2. **Know that Scientific Integrity enhances our work**
 3. **Know what constitutes an allegation**
 4. **Know how and where to make an allegation**
- **The introductory video, Scientific Integrity at EPA, and one case study video will be available each year -- in 2016, 2017, and 2018**
- **Shown followed by 20 minutes of Q & A**
- **We will make the Scientific Integrity at EPA Video available for onboarding of all EPA new hires and for use with contractors and grantees**
- **We are creating a curriculum guide/lesson plan for each video**



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- **Use FMFIA to Certify Policy Compliance**

Procedures for Receiving and Resolving Allegations



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Key Principles

- Transparency
- Confidentiality
- Consistency
- Timeliness
- Effectiveness
- Fairness



Reporting an Allegation

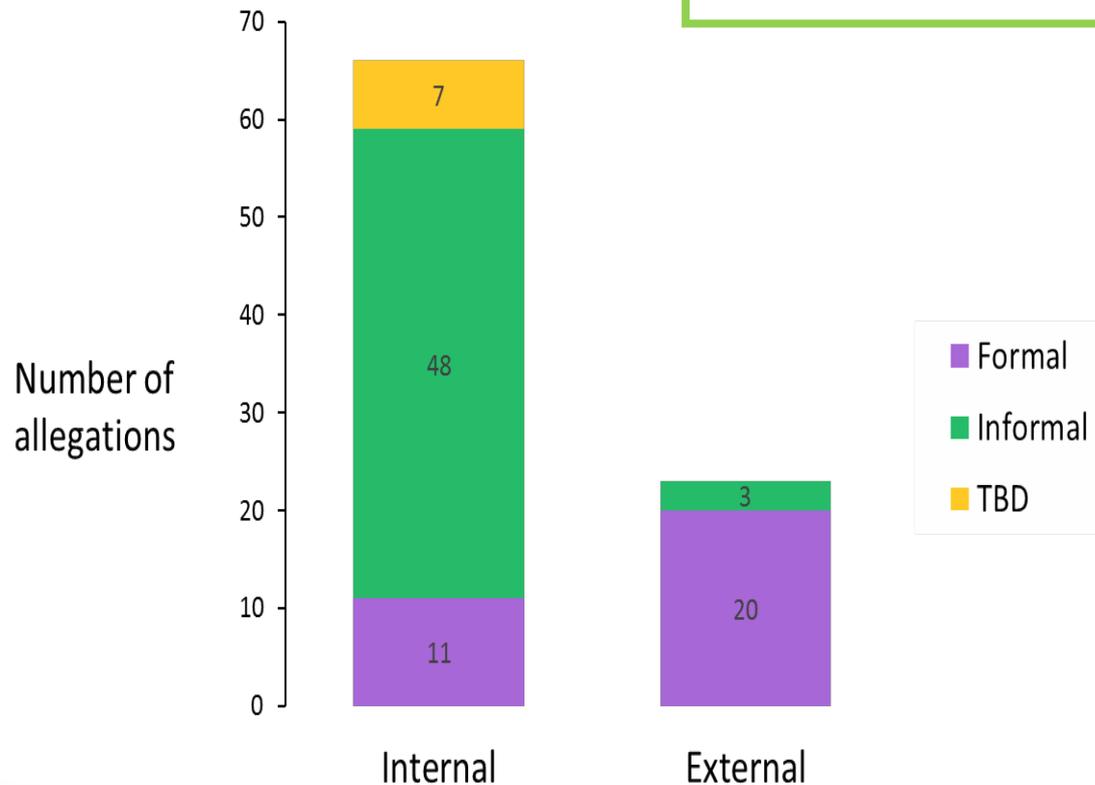
- WHERE –
 - Scientific Integrity Official
 - Deputy Scientific Integrity Official
 - Office of Inspector General Hotline





Total Allegations 2012-2015

**PLUS 9 NEW
ALLEGATIONS THIS QUARTER**





Allegations Received in FY '15

- **8 - authorship disputes**
- **6 - suppression or delay of science**
- **5 - scientific methods**
- **5 - conflicts of interest**
- **3 - interference by a manager**
- **3 - data quality**

- **Open from November 17-
January 15**
- **6651 (44.8%)** **Opened
the survey**
- **5763 (38.8%)** **Completed**
 - ✓ **3792 (34%)** **Long form**
 - ✓ **1970 (25.5%)** **Short form**



Current Initiatives

- **Authorship Best Practices**
- **Clearance Best Practices**
- **Differing Scientific Opinions Policy**
- **Language for Grants and Contracts**



Authorship Best Practices

- **Authorship Criteria**
- **Common Authorship Abuses**
- **Plagiarism and Self Plagiarism**
- **Authorship Approval Process**
- **Author Roles and Responsibilities**
- **Shared Authors**
- **Contractors, Students, and Technicians as Authors**
- **Conflicts of Interest and Bias**
- **Copyright**



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Differing Scientific Opinion

- **Substantively engaged in the science informing an Agency policy decision**
- **Employee is encouraged to express any disagreement with the scientific data, scientific interpretations, or scientific conclusions that will be relied upon**

“The work we do together to preserve the integrity of our science is as critical as ever...With science as our North Star – EPA has steered America away from health risk and toward a higher quality of life.”