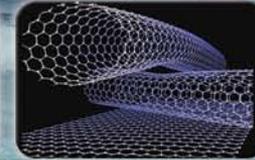
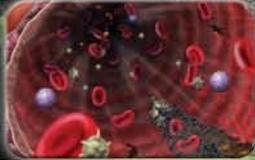




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60 *years*
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Assessment and Evaluation Working Group Progress Report

***Steven H. McKnight
April 14, 2010***





Outline

- ***Introduction and Charge***
- ***Findings and Recommendations***
- ***Challenges***
- ***Path Forward***





Assessment and Evaluation Working Group Membership

Steven McKnight (CMMI)

Joanne Culbertson (OAD)

Marc Ingber (CBET)

J. Phillip King (CMMI/AAAS)

Peter Wu (CBET/AAAS)

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Kesh Narayanan (IIP)

Lynn Preston (EEC)

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Kevin Simmons (IIP/Einstein)

Patricia Tsuchitani (BFA)

Usha Varshney (ECCS)





Specific Tasks from AD

- 1. Review the observations and recommendations of the 2005 Awards Impact & Assessment Task Group (AIATG)***
- 2. Report on status of the AIATG recommendations***
- 3. Recommend further actions that improve ENG assessment and evaluation capabilities.***





Tasks 1 & 2: Review of AIATG Recommendations

Primary Recommendations:

- ✓ **Enhanced Nugget System (Highest Priority)**
- ✓ **FastLane Modified Reports (Highest Priority)**
- ✓ **Case Studies (High Priority; commissioned to third parties)**
- ✓ **Grantees Conferences (comprehensive)**
- **Committee of Visitors (High Priority; up to date assessment metrics; added focus on specific Directorate and Division strategic goals; possible use of case studies related to these goals, possible use of contracted case studies to assist)**
- **Dedication of a Staff Person for Coordination of Division Assessments —longer term**





Tasks 1 & 2: Review of AIATG Recommendations

Secondary Recommendations:

- ***Database and Text Mining***
- ***Random Sampling Assessments of Individual Grants***
- ***Common data elements related to All Impact Assessments***
- ***Program Review Articles***
- ***Individual Grantee / PD interaction***
- ***International Assessment of Engineering Fields***





Task 3: Further Recommendations

- 1. ENG must dedicate resources (personnel and budget) to effectively implement and manage A/E across the directorate and interface with NSF A/E efforts***
- 2. ENG should build and implement an operational framework that organically incorporates assessment and evaluation into ENG processes***
- 3. ENG should benchmark existing A/E methods, data mining & analysis tools, knowledge management systems, available data, and visualization methods for evaluation/assessment***
- 4. ENG should enhance existing COV processes to further aid in assessments.***



Logic Models – A key element of an ENG A/E Framework



Resources

NSF Activities

Outputs

Outcomes/Goals
Short Term Medium Term Long Term



- Underlying Needs/ Problems/ Issues
- Emerging Needs/ Opportunities
- Changes Since Last Assessment

Assumptions & Intended Outcomes/ Goals

- Target Audience
- Effective/ Efficient Strategies
- Factors Critical to Success

•Funding & External Resources

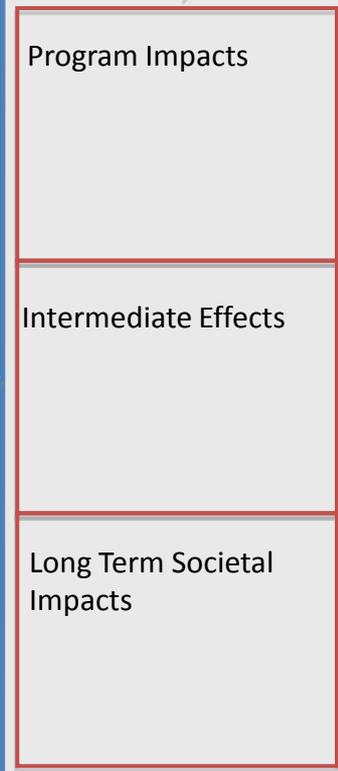
•Internal Resources



• Nature/ Scope/Approach
• How do we do it?



• How can we capture the essence of PI accomplishments without burdening them?



Relate to NSF-ENG Goals-Strategies

What information is needed to determine:

1. The activity is meeting its goals effectively/efficiently
2. For ongoing monitoring versus long-term assessment
3. To modify/redefine the activity to address emerging needs/ opportunities?

Unintended/Unexpected Consequences



Other General Observations and Findings

- ***The AIATG effectively outlined the persistent A/E issues/challenges***
- ***Current A/E environment – “Stars are aligning”***
- ***Rigorous assessment methodologies are being used on a case-by-case basis (e.g. ERCs, IIP programs, topical areas, etc.) and not routinely within ECCS, CMMI, or CBET***
- ***Additional challenges and opportunities have been identified***





Challenges

- ***“Assessment / Evaluation” is interpreted broadly***
 - *Types include operational assessments; portfolio mgt. assessment; project impact; program outcomes; long-term effects, etc.*
 - *“One size fits all” approaches are not possible*
- ***For optimal A/E a framework, understanding of the needed data, access to that data, and the appropriate analysis tools must be utilized.***
 - *Universal framework, data, analysis tools to guide analysis do not presently exist, but are being developed now.*
- ***A/E of basic research is still a subject of research itself***
 - *Debate on relevant indicators, metrics, outputs, and outcomes*
 - *Tools, techniques, and methodologies continually evolving – must keep pace with SciSIP community*





Path Forward

- ***Short-term - Accomplished during tenure of WG Charter***
 - ***Coordinate with other WGs to draft high-level BPE , A/E logic models, and benchmarking tasks***
 - ***Baseline existing tools and datasets available for use at NSF***
 - ***Propose links between framework to existing (expanded) COV processes***
 - ***Engage AdCom for input and guidance***





Path Forward

• Longer term – Beyond tenure of WG Charter

- Establish ENG A/E standing working group**
- Recruit and hire ENG A/E professional (New Slot)**
- Create detailed A/E framework processes under leadership of FT A/E professional, standing working group, and external help as needed (resources required)**
- Develop requirements and implement ENG knowledge management system (resources required)**
- Implement expanded COV role in ENG A/E activities**





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Questions?

