10th Annual NDIA Conference

Air Force STEM Workforce
Today and Tomorrow

Leif E. Peterson
Member, NRC Committee on USAF STEM Workforce
Needs and Strategy
The National Academies

- National Academy of Sciences
- National Academy of Engineering
- Institute of Medicine
- and National Research Council (NRC)

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http://www.nationalacademies.org
The National Academies

National Academy of Engineering (NAE)
Charles Vest
President

National Academy of Sciences (NAS)
Ralph Cicerone
President

Institute of Medicine (IOM)
Harvey Fineberg
President

National Academy of Sciences (NAS)
Ralph Cicerone, Chair
Charles Vest, Vice Chair

Division on Engineering & Physical Sciences (DEPS)
Cherry Murray, Chair
Peter Blair, Exec. Dir.

Board on Army Science & Technology (BAST)
Mal O’Neill, Chair
Bruce Braun, Dir.

Air Force Studies Board (AFSB)
Gregory Martin, Chair
Michael Clarke, Dir.

Naval Studies Board (NSB)
John Egan, Chair
Charles Draper, Dir.

The National Academies

Governing Board
Ralph Cicerone, Chair
Charles Vest, Vice Chair

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Charles Vest, Vice Chair
Section 15 of Federal Advisory Committee Act (FACA) governs activities of ad hoc committees.

NRC speaks only through peer-reviewed written reports. Any other advice is the opinion of the individual committee member and should not be considered “official.”

NRC Governing Board approves studies, boards and committee members - not the sponsor.
NRC Governing Board reviews and approves study scope and plan

Project Starts when funding is received

Provisional slate approved by NAS president

Provisional committee posted for public comment via Current Projects System
Committee balance and expertise evaluated; any conflicts of interests are investigated.

Final committee formally approved.

Monitoring for potential conflicts of interest continues.

Reviewers comment on report.

National Academies sign off on report.

Committee meeting's first meeting.

Full Committee signs off on draft report.

Lastly the report is released to the sponsor and the public.
NRC STEM Study

Study Origin

- Requested by Terry Jaggers, SAF/AQR
- Co-sponsored by Joseph McDade, HAF/A1D
Assess the STEM capabilities the U.S. Air Force

Determine whether those capabilities will meet AF needs

Identify and evaluate strategy options

Address STEM capability in terms of functional mgt areas

Identify and evaluate options re organization and management of Air Force STEM workforce

Recommend strategies to meet STEM needs in the future
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<td>Natalie W. Crawford, Co-Chair</td>
<td>George K. Muellner, Co-Chair</td>
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<td>William P. Ard</td>
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<td>James B. Armor, Jr.</td>
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NRC STEM Study

- Five Meetings – Aug 2008  Jan 2009
- 25+ speakers & presentations
- SAF/AQR & X, A1, A8, A9, HQ AFMC & Centers, ACC, AMC, AFSPC, AFIT, USAFA, AETC, AFRS, Toffler Assoc., SAIC, Battelle
- Numerous studies & reports
  (i.e., AF, NRC, NDIA, National Science Foundation)
Status

- Pending peer review
- Final edits
- Approval & release – late June, early July
Past 50 years – 50-85% GNP growth rooted in S&E
4 % of workforce in S&E

“Gathering Storm”
K-12 education in US – one of worlds worst, spend more per capita than all nations but two
Engineering & physical sciences grads - down 20%
US citizens achieving PhD’s – down 34%
Engineering PhD’s in US – 2/3 are non-US citizens
Interventions elsewhere.....

NASA – 50% new hires – ‘fresh outs’

Navy – CNO, 65% Academy 2013 grads in science, engineering, or math majors
“If you don’t solve (the K-12 education problem), nothing else is going to matter all that much.”

Alan Greenspan

“The only sustainable competitive advantage is the ability to be able to learn faster than your competition.”

Peter Senge

“You are today where your thoughts have brought you, you will be tomorrow where your thoughts take you.”

James Allen