Why ASTRA?:

Making a Case for
ASTRA Policy Research and Advocacy

Prepared for U.S. Dept. of Energy

October 30, 2008

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Why ASTRA? The Alliance for Science & Technology Research in America

1. Core mission: increasing federal funding for fundamental research in the physical sciences and engineering.

2. ASTRA's 120-plus members and 32,000-plus "friends" create a nationwide (and global) community of S&T professionals committed to increasing physical science & engineering budgets. Policy research support is key need.

3. ASTRA has succeeded in making the case, developing data, enabling larger communities of S&T professionals and membership organizations to succeed. ASTRA created original strategy for linking federal S&T funding w. workforce, competitiveness, innovation, national defense in 2000.

4. Advocacy materials and programs form basis for recent legislative breakthroughs and disappointments, including FY 2008 *DOD Supplemental Science Budget* Increases of $400 million for key science agencies, the *America COMPETES Act of 2007*, American Competitiveness Initiative and annual battle over appropriations bills for key science agencies.

5. ASTRA creates new networks, identifies emerging issues, harnesses synergies of broader communities of interest. Provides data for Congressional testimony, Executive Branch research on competitiveness, data mining.

6. Key gaps in innovation metrics now involve small business, venture capital and entrepreneurial sectors to better understand "innovation vital signs."

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ASTRA Member Organizations 10/08

Founding ASTRA Organizations

Alfred P. Sloan Foundation
American Association for the Advancement of Science
American Association of Engineering Societies
American Chemical Society
American Institute of Chemical Engineers
American Institute of Physics
American Physical Society
American Mathematical Society
Association of American Universities
Battelle
California State University System
David & Lucille Packard Foundation
Federation of Materials Societies
Florida State University
Golden Family Foundation
IBM Corporation
Lucent Technologies
Materials Research Society
National Association of Manufacturers
Optical Society of America
Rensselaer Polytechnic Institute
Sandia National Laboratories
The Science Coalition
Semiconductor Industry Association
The Minerals, Metals and Materials Society (TMS)
University Corporation for Atmospheric Research (UCAR)
University of Arkansas, Fayetteville
University of Arkansas, Little Rock
Worcester Polytechnic Institute

Pending Memberships:
Arctic Region Superconducting Center
Florida Photonics Cluster
IEEE Robotics and Automation Society
SAE International
Small Business Technology Council
University of Alaska, Fairbanks
Drexel University
University of Connecticut

Current Organizations

Agilent Technologies
Alfred P. Sloan Foundation
American Association for the Advancement of Science
American Chemical Society
American Dental Association
American Institute of Chemical Engineers*
American National Standards Institute (ANSI)
American Physical Society
American Society of Engineering Educators (ASEE)
Applied Materials
Athena Alliance*
AVS—The Science & Technology Society
California State University System*
CASC — The Coalition for Academic Scientific Computing
Center for Accelerating Innovation*
Cleveland Medical Devices*
Computing Research Association *
Council on Competitiveness*
Dow Chemical
Ewing Marion Kauffman Foundation
ExOne Company*
Federation of Materials Societies*
FIATECH*
Florida State University*
General Atomics*
General Electric*
General Motors
Golden Family Foundation*
Hewlett-Packard
IBM Corporation
IEEE-USA
Integrated Manufacturing Technology Initiative*
Intel
IPC — Association Interconnecting Electronics Industries*
Kent State University*
Lucent Technologies*
Luna Innovations*
Materials Research Society
Nanotechnology Business Alliance*
National Association of Manufacturers*
National Council of Women in Information Technology (NCWIT)*
National Center for Manufacturing Sciences (NCMS)*
National Science Teachers Association*
National Semiconductor Corporation
National Venture Capital Association
Northern Illinois University
ONAMI — Oregon Nanoscience and Microtechnologies Institute
Optical Society of America (OSA)
Optoelectronic Industry Development Association (OIDA)*
Orbital Research, Inc.*
Purdue University*
Rensselaer Polytechnic Institute
Rockwell Collins
Rohm & Haas
Sandia National Laboratories*
Semiconductor Equipment & Materials International (SEMI)
Semiconductor Industry Association (SIA)
Semiconductor Research Corporation (SRC)
Southeastern Universities Research Association (SURA)
SPIE – The International Society for Optical Engineering
Stanford University
TechVision 21*
Texas Instruments*
The Minerals, Metals and Materials Society (TMS)*
University Corporation for Atmospheric Research (UCAR)
University of Arkansas, Fayetteville
University of Arkansas, Little Rock
University of California, Los Angeles
University of California, Office of the President
University of California, Santa Barbara
University of Central Florida
University of Florida
University of Illinois, Chicago
University of Illinois, Springfield
University of Illinois, Urbana-Champaign
University of Massachusetts
University of Missouri
University of New Mexico
University of South Carolina*
US Cer*

* Denotes "Friend of ASTRA"

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ASTRA has made a Difference …

"Level I" of ASTRA Plan = SUCCESS:

A. Identify proper data, enable capacity within powerful membership organizations, academe & industry to create public dialogue. ASTRA behind "doubling" of budgets for key physical science & engineering agencies. Positioning for next Administration, Congress ongoing.

B. Perform research and data mining to determine links between science funding and desired outputs for society.

C. Create proper messaging and unify diverse communities of interest, esp. bringing industry to table.

D. Foster nationwide networks and collaborations for science advocacy (key potential area for additional funding).

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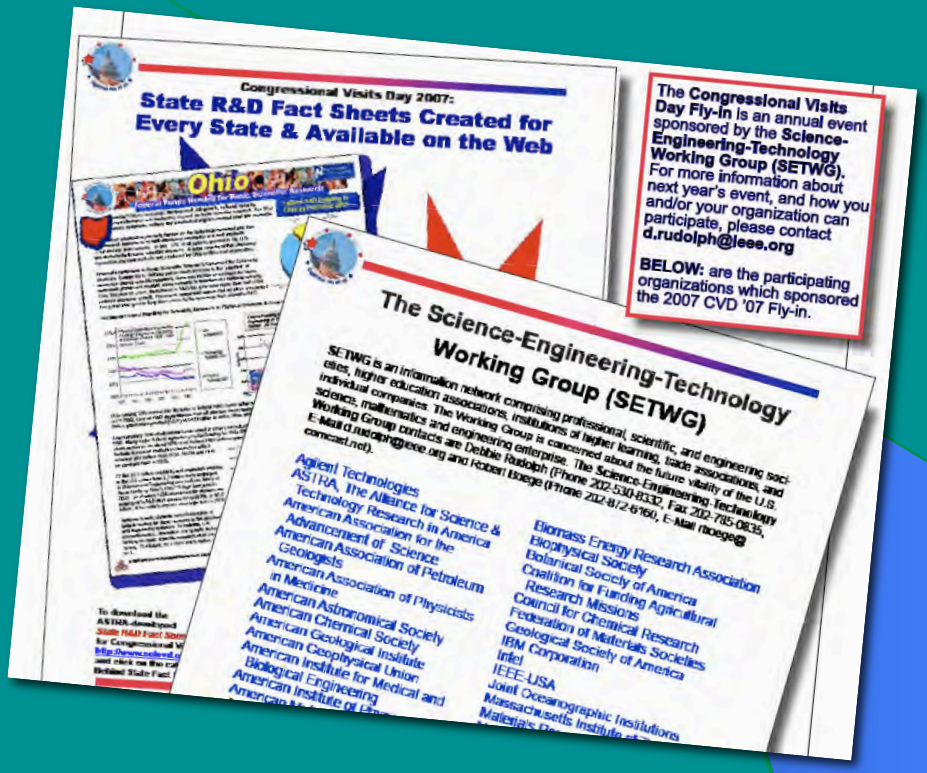
Making a Case — And Vetting the Data Correctly!

ASTRA has mobilized thousands of ordinary people at the grassroots level, as well as key leadership in science & engineering voluntary organizations, industry, and academe.

ASTRA creates many data products which are carefully vetted by expert volunteers, graphically appealing, and focused upon putting a "human face" to the complex relationships science funding creates with job creation, competitiveness, innovation, STEM education and national security.

Policy research is needed in many areas.



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Congressional Visits Day 2008 — Success!

Side-by-Side Comparison of Key Innovation & Competitiveness Bills in Congress and the American Competitiveness Initiative (ACI) as of June 2007

Compiled by the ASTRA Legislative Task Force and the American Chemical Society's Office of Legislative and Government Affairs

June 22, 2007

No. 1

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What's Next?

- Budget Impasse Results in Train Wreck 12/07
- 2008 campaigns accelerating
- Perception that physical science & engineering community "have been taken care of" (!) in terms of ACA, ACI … worse now than ever!
- Expectations Game Beginning
- Innovation Policy Needs Deeper Research, Metrics
- 2009 Federal Budget introduced Feb. 4, 2008, headed for a "continuing resolution" (C.R.) for near term, until election results are in, late 2008
- Scientific Research budgets are in perpetual jeopardy of being cut as entitlement spending overwhelms government's capacity to pay for discretionary items

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ASTRA's 14-Point Policy Framework for 2008 — and Beyond …

- ***Riding the Rising Tide*** Study released December 11, 2007
- Policy Framework for next ten years
- Highly praised across political spectrum
- Support of key Congressional leaders in both parties

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Support of key Congressional leaders in both parties

Chairman Bart Gordon (D-TN) and Ranking Member of House Science & Technology Subcommittee Phil Gingrey (R-GA) host ASTRA and praise the *Rising Tide* Policy Framework on December 11, 2007 as ASTRA Board look on …

ASTRA has provided this document to Congress and all Presidential Campaigns as well.

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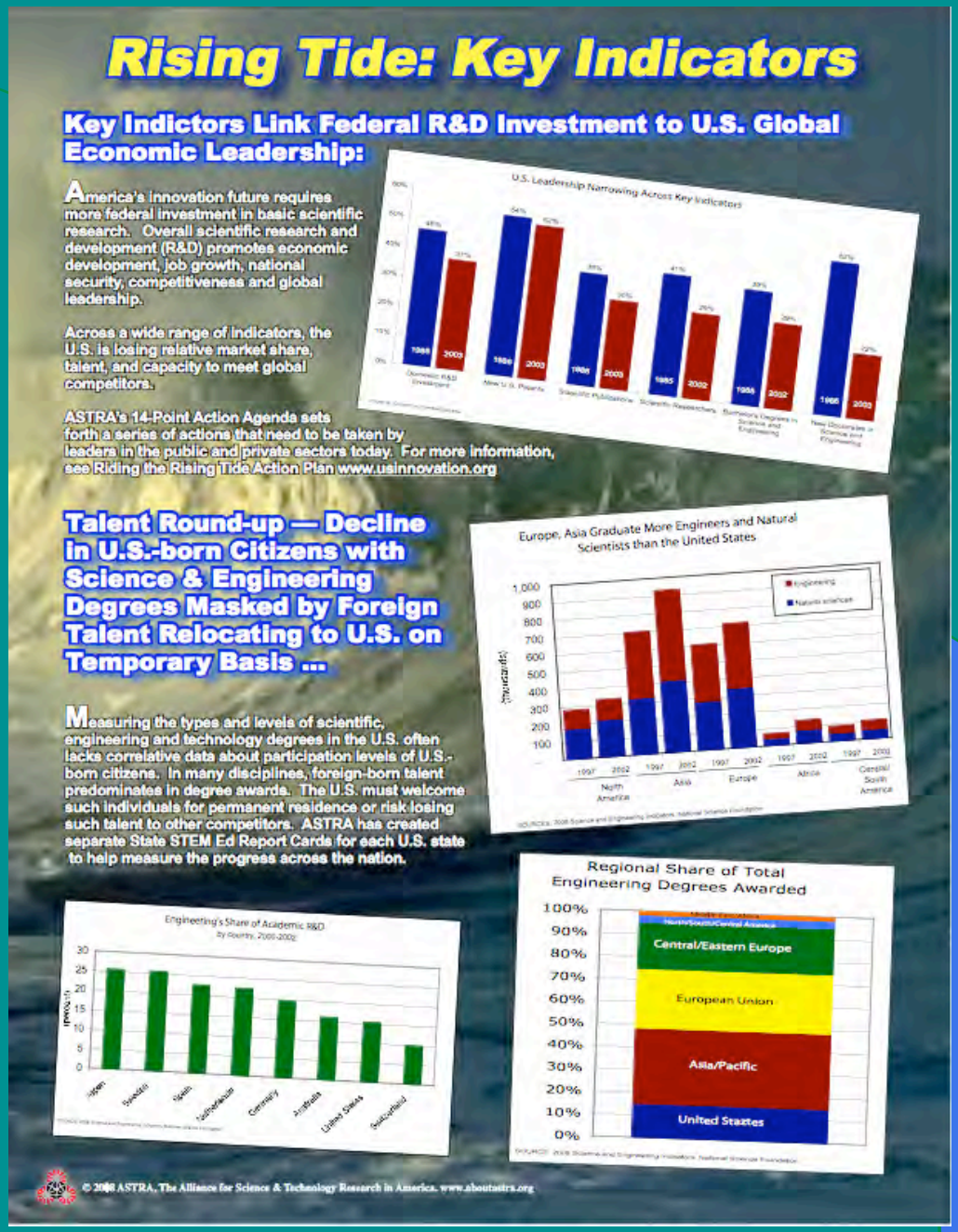
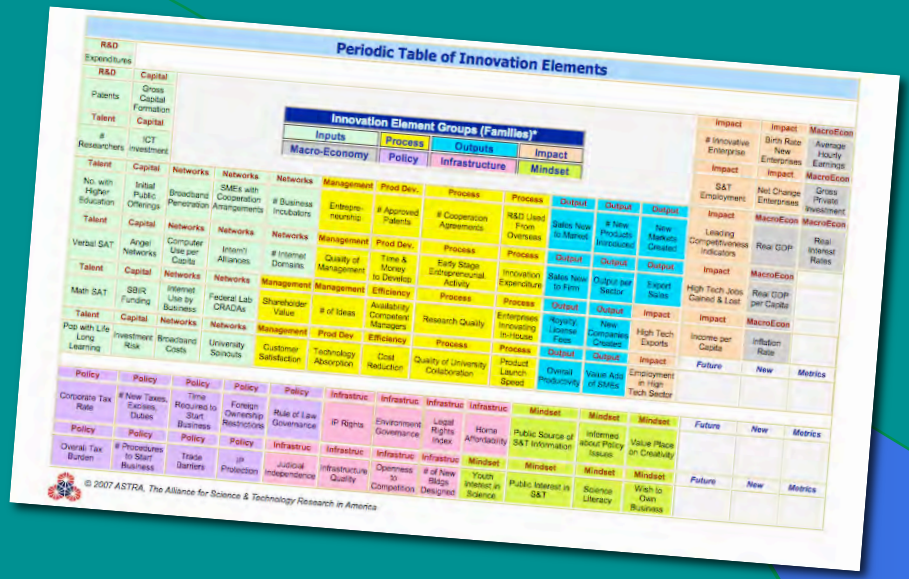
Carefully vetted research — with compelling, easy to understand graphics — makes the case easier to prove …



Innovation Metrics from ASTRA

ASTRA successfully launched its Innovation Vital Signs Project in 2006 — 2007. Needs to be funded for additional phases.



Only ASTRA is performing primary research AND linking such research to its advocacy programs.

Egils Milbergs of the Center for Accelerating Innovation served as Master of Ceremonies for the Workshop.

Panelists delivered remarks and then facilitated discussion groups.

Six discussants per "Innovation Café" Table even used the table "cloths" to record their notes and ... doodles about innovation.

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2008 Presidential Campaign Coming to Conclusion…

www.usinnovation.org

ASTRA has launched its new USInnovation.org Web Site as part of broader efforts to educate scientists and engineers AND the various campaigns themselves, over S&T policy issues.

ASTRA remains nonpartisan — and a trusted source of economic and statistical data unique to this policy area.

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Making Sure the Winner "Gets It" in 2008?

ASTRA can insure that the needs of the S&T Community are factored into the next Administration planning process, starting w. Campaigns and Presidential Transition Teams …

Mike Huckabee

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