2011 World Materials Summit

L'Enfant Plaza Hotel | Washington, DC | October 9-12, 2011

10/11/2011

Policy and Education Panel



Assumptions

- Other Groups Will Recommend Specific Policies For Their Technology Category
  - Our Group Did Not Address
- Materials Scientists Need To Be Better Spokespersons For The Public
- Policies of Governments Are A Result Of Informed Citizens and General Public
- There Is A Natural Tension and Need For Balance Between Competition and Cooperation
- Examples Of Recommendations Should Be Specific Enough For Action

Outline

- Educating Materials Scientists To Be Better Spokespersons With The Public

- Aligning International Cooperation

Educating Materials Scientists To Be Better Spokespersons With The Public

- #1 - System Level Thinking
  - Post Doc level
  - Graduate students
  - Entry level freshmen
  - Increased understanding over time
  - Recognize differences for each country
  - Federal grant expectations for public outreach
  - Education kits
    - Survey and share information across countries
  - Build a Community That Is Better Informed
    - Develop workshops at major meetings
    - Including other groups – e.g. social, economic, and environmental – interacting with materials science students

Educating Materials Scientists To Be Better Spokespersons With The Public

- #2 – Outline Challenges Beyond Scientific Research
  - Currently we engage mainly in science education
  - Large list of other factors influencing energy
  - Show linkage of research to innovation
  - Professional societies should make paradigm shift to include research to innovation in our meetings
  - Recognize need for different vocabulary/thinking – e.g. communities that have a stake in sustainable issues
  - Mapping world needs in energy with materials science
  - Interactions increased by societies, universities, and funding agencies

Educating Materials Scientists To Be Better Spokespersons With The Public

- #3 – Highlight Materials Impact on Our Daily Lives
  - Educate and present examples
  - Balance applications with need for and the importance of research programs
  - Look for experiences from each country that can be shared
  - Involve industry, government agencies, and universities
  - Analyze economic impact on GDP of materials research and innovation
  - Create interaction with others for better understanding
  - EMRS/CMRS/MRS inventory within materials and related scientific societies – e.g. APS, ACS, SPIE, IEEE, etc.

Aligning International Cooperation

- #1 – Recent Efforts Specific to Energy in Europe and US Are Very Timely And Should Be Maximized ASAP
  - Horizon 2020 and QTR
    - Identify Joint S&T Opportunities – e.g. battery standards – identify and establish collaborative efforts
    - Look beyond science only opportunities for joint work – e.g. social economic factors as an example, energy efficiency
    - Who should be assigned this important task? timely response
    - Select common energy goals
    - Search for other countries and regions beyond EU and US that have plans in common
    - Look for opportunities to include developing countries in these areas of high priority

Aligning International Cooperation

- Continued
- Manufacturing Science
  - Attention currently underway in all countries where the front end science can make a big impact on industry
  - Look for alignment opportunities
  - Focus on manufacturing science specific examples in energy
  - Note: industry already does this in many sectors

Aligning International Cooperation

- #2 – Recycling
  - Cradle to grave design and mindset
  - Identify and anticipate wide spread implementation of energy technologies and develop a mentality for recycling – e.g. PV, batteries, critical materials, etc.
  - Standards
  - Legislation
  - Practical consumer education
  - Eliminate negative impact on developing nations
  - Think about long-term impact and economics