American Institute for Medical and Biological Engineering (AIMBE)

Open Forum to Increase Understanding of Medical and Biological Engineering

College of Fellows Meeting: February 22, 2010
19th Annual Event: Washington, D.C.

Summary

On February 22, 2010, the AIMBE College of Fellows hosted an inaugural open forum to bring fellows and stakeholders together to decide what AIMBE fellows could do to increase public understanding of medical and biological engineering. There were 197 people attending this forum.

Prior the meeting an on-line survey was sent all Fellows to determine how they talk about their work, what they think the public understands about MBE, and what issues that they the Fellows feel should be communicated to the public. This survey received about 65 responses. The responses were presented to the attendees by Executive Director, Jennifer Ayers. Her power point presentation and the survey results are posted on the College of Fellows page on the AIMBE website.

Following the presentation the attendees were divided into small groups of ten to discuss two of four questions (below). Each table was led by a moderator from a different area within MBE or an external stakeholder. The exceptional positive energy in the room was exhibited by the high level of interaction and discussion at the tables.

Each table discussed their two questions (detailed below), prioritized their answers, and reported them to the entire group. Attendees were asked to fill out an optional questionnaire about the forum. These results are also tabulated in this report..

Our next steps include a survey to Fellows to prioritize the findings, the development of “members in action” section of the AIMBE Web-page, a one page feedback questionnaire to allow fellows to share their efforts and track progress to reach the public, and the creation of an AIMBE Wiki page.

Response from small groups

The following information consists of the aggregated Fellows' answers to four questions about how they perceive medical and biological engineering and how they can collectively work to make society realize the fields' importance in everyday life.

Question 1: If you had 10 minutes with President Barack Obama what would you tell him about MBE?

1. The creation of jobs through Medical and Biological Engineering (MBE):
    a. Make the process faster, with a quicker return on investment. An increase in employment will lead to an increase in productivity.
    b. Increase funding to small business initiatives.
    c. Increase funding to translational technology ("from bench to bedside").
2. The improvement of America's healthcare system through MBE
    a. This will not necessarily cause an increase in healthcare costs; if executed properly, the use of translational technology will actually lower costs, while increasing the quality of America's healthcare.
    b. The need for increased access to healthcare (i.e. telemedicine).
3. The need for increased awareness about what MBE is and how it benefits society
    a. Give him a brief explanation of exactly what MBE is; mention the AIMBE *Hall of Fame*.
    b. Offer him three concrete examples of technology created by MBE, and then give empirical evidence for how it improved healthcare and stimulated the economy (through job growth).
    c. Besides facts, also offer more anecdotal information about what we do for society on a "day-by-day" basis.
    d. Cite a personal situation in which we know President Obama has benefited from MBE technologies.
4. Discuss the impact that strong regulation has on innovation and job growth.
5. Mention the positive impact biological engineering can have on improving the environment.

Question 2: What public(s) do we (medical and biological engineers) think are the most important to reach?

1. The Government
    a. Congress (for funding) or even local legislators to communicate our message.
    b. Regulatory Agencies- to discuss the negative impact of specific regulations on engineering technologies.
2. The Media
    a. Social media to connect to teens and young adults.
3. K-12 education

    a. Educate the teachers about our message, as well as the students.

4. Public
    a. Reach out to the older members of society through representative organizations, such as the AARP.
    b. Patient-advocacy and disease-specific patient groups.

c. Universities
    a. Senior administration.

d. Medical Practitioners
    a. Clinics/Hospitals that use MBE tools.

e. Venture Capitalists/Investment Houses

Question 3: Top 3 things Fellows can do to communicate the value of our contributions?

Themes discussed involved improving our communication to diverse audiences

1. Develop "tools" to facilitate communicating effectively to diverse general (including non-technical) audiences.
    a. Assemble a collection of fun, memorable analogies for public presentations.
    b. Share tips for engaging the media.
    c. Employ "new" media such as webinars, podcasts, "YouTube", social media.
2. Engage a broader array of stakeholders.
    a. Invite local congressman to office.
    b. Engage media—e.g. write editorials, podcasts, YouTube, etc.
    c. Participate in Science Centers and Science Fairs in schools and community.
        i. Participate in high school summer programs.
    d. Co-locate AIMBE meeting with e.g. AAAS, Journalism conference, Howard Hughes conferences.
    e. Write Op-Ed pieces and educational articles in newspapers.
    f. Serve on school boards and participate in Town Meetings to help develop a more science-based curriculum.
3. Represent the broader field; not one's "narrow" area of research.
    a. Show engineering's influence on health care, the economy.
    b. Reverse the negative perception of the sciences.

Question 4: What do Fellows need from AIMBE to promote public awareness?

1. Workshops/training in interacting and communicating with media and government.
    a. One-on-one seminars for leaders of AIMBE.
    b. Prepare tool kits for the fellows to have on hand when communicating with other organizations or government officials.
        i. Prepare talking points for fellows so that information is simpler and more consistent.
        ii. Include props to make our presentations more interesting.

iii. A “best practices” manual.

c. Training in communicating complex topics in lay language.

2. Publicize and communicate
   a. Examples of “success” stories.
      i. Always see the physician, do not see the engineer.
      ii. Fun, memorable.
   b. Summary sheets describing issues of the day affecting our field.
   c. Create a Speaker’s Bureau that has contacts for all issues related to MBE, as well as the other sciences.
   d. Have a more compelling website,
      i. Include video, modern achievements, and a more highly publicized Hall of Fame.
      ii. Use website as a medium through which reports can be shared and produced, with the AIMBE name attached.
   e. Invite multiple media outlets to AIMBE’s Annual Event.
   f. Update the “Top 50 Best Inventions of the Past 50 Years” to include MBE technologies.

3. Connection point to interact with government.
   a. Facilitate more visits to Congress/Government agencies for fellows.

4. Novel Ideas
   a. Contest for effective communication of topics in our field.
   b. Support for use of new media for webinars, podcasts, etc.
   c. Have an exhibit at a museum to engage local schools.
   e. Hold a student paper competition on new topics every year.
   f. Incentivize/offer a reward.
   g. Have (TV??) hero that represents MBE
   h. Sponsor an MBE film festival.

Individual Questions

Background: Attendees were asked to complete a paper questionnaire that included name, and contact information and responded to the following questions:

1. What is the one thing you feel you can do this year to advocate for the field of MBE?
2. What would you recommend that we do differently at this session next year to make it more productive?
3. What was the greatest benefit of this session for you personally?

Responses from Question One

What is the one thing you feel you can do this year to advocate for the field of MBE? (Answers sorted by general topic.)

1. Federal Advocacy

- Visit Congress X 3
- Attend advocacy meeting in Washington
- Talk to congressional representative
- Contact legislative leaders.
- Keep in touch with local representatives
- Will try to do more in DC
- Become stronger advocate with congress

2. AIMBE/IFMBE/Society Involvement/ Promotion

- Become active in AIMBE
- Talk about AIMBE at a Medical Device Conference I help organize
- Run the Annual Event
- Develop innovation registry with Academic Council
- Participate in getting University of Maryland better connected to AIMBE
- Be IFMBE President
- Through the council of societies, e.g. EMBS of IEEE
- Contribute thoughts at this 2010 meeting. Serve on election committee (Indus. Council) if called upon.
- Leverage the list of Fellows to address specific questions.
- Contribute web-site materials- links to our work
- USA Science & Engineering Festival- AIMBE Prizes

3. Publicity/ Outreach

- K-12 Education /Outreach X 5
- Develop one exhibit with our city's Discovery Museum
- Put out Press Release with campus resources
- One or two Wiki articles
- Promote better what MBE's do (translate a clinical problem into a technically possible clinical solution used b the clinicians not created by them).
- Continue to describe what we do in terms most people can understand, to as many groups as possible.
- Solicit examples and authors for information articles.
- Communicate importance of pre-college teacher outreach

- Help emerging companies raise awareness of value and reward of MBE personnel.
- Contribute to an article/opinion/new piece etc. on intersection of biology and engineering
- More outreach
- Small group information/discussion
- Invite k-12 teachers and students to my lab
- Work with students I contact on importance of science communication and politics. Try to get them to believe that this is as important as their science and engineering work.
- Speak in public forums and encourage incoming students
- Tell a convincing story of MBE success
- Talk about Rochal's products to more people in general
- Would like to get involved in media relations and outreach to retirement groups
- Develop MBE-relevant activities for the Leonardo in Utah
- Public talk about medical products that depend on BME innovation/development
- Get more involved
- Create opportunities to tell our story to stake holders, public

Innovation

- •. Work to decrease barriers for innovation to reach the public

Healthcare (one response)

Responses from Question Two

What would you recommend that we do differently at this session next year to make it more productive? (Answers sorted by general topic.)

1. Methodology
    - General
        - Good method, worked well.
        - Very Good Session –really enjoyed conversation
        - Clarify specifically how the output from the session will be used. Assign responsibility.
        - It was a good productive session- I do not have any specific recommendations
        - Keep it (illegible)
        - Drop action planning session, this seemed redundant to Q-4
        - Panel Discussions
        - Format Fine
        - More definition of what comes next, or how this will be used. What is output resulting from this? If we don't see tangible results and follow-up from your goodwill will be lost.
        - Respond to opinions of participants about success items of this meeting.
        - Add more structure to discussions
        - Develop action Items & report back on things that were successful.

- Session went well- moderator role almost not needed. Clear instructions helped greatly.
- Serve Beer & Wine
- Actually have a marketing facilitator, develop the marketing pyramid.
- Longer time for tables to talk.
- Generate actual action (s) items for each person (& how to realistically implement
- Report out on how learnings from today's session were implemented
- Have several examples of specific and effective messages and stories .

- Time
  - More prep more focusing (staging)
  - ½ hour longer
  - Probably more time for discussion
  - Allow more time
  - Take a little more time for each question
  - Longer time for discussion
  - Extract concise reporting from each table- too long winded

- **Room**
- Larger room
- More room, too cramped- Coffee!
- Larger space for better local table communication

- **Sound**
- Get a better microphone X2
- The room was too noisy- need more time.
- It was too loud in the session. Breakout rooms would have been helpful- we needed a little more time.
- Have multiple wireless microphones.
- Large group made it a little tough. Reporting out got to be too long relative to time for actual discussion. Not sure how to fix that, but maybe doing it on the last day rather than first will reduce the attendance a bit.

2. Focus

- Develop "Broad AIMBE Goals" and use the session as a test bed to develop concepts on how to refine and/or implement these goals.
- Biological engineering lost- for question 1—nothing about bio-fuels, bioprocess for rapid production of vaccines. Things that Obama should hear.
- How can we use our skills to prevent problems from occurring in the first place?
- Present/Recap last year's outcomes with specific success stories that happened over the last year.

a. Need to bring back (a?) opinion of new fellows.

3. Suggestions for a different approach
- Organize workshops for fellows to educate them how to interact with media, issue press releases (by collecting information fellows etc.)
- Take on the politics of public negativity against science and scientists.
- Use this type of facilitation on specific MBE Challenges group-industry/ Academics/ Government

Question Three

What was the greatest benefit of this session for you personally? (Answers sorted by general topic.)

Appreciation
- Appreciating that we all have different approaches and thinking processes.
- You asked our opinion. You get me and other invested- Thank You!
- Saw/appreciation of different perspectives then mine in academia
- Energy and interest of general AIMBE fellows in participating in MBE communication activities.
- (illegible) provocative, engaging the whole of AIMBE
- Helped me think of ways that I could help.
- Enjoyed the interaction and learning more about communication issues.
- It was great to brainstorm with others about ideas to educate the public about MBE
- Good Discussion
- Great to see everyone involved
- Interactions with many people
- Interactive and Discussion by panels.
- See people getting excited about the discussion points.
- Hopefully, suggestions will be considered, vetted, and, as appropriate, implemented.
- Getting to know and discuss with fellows.
- Meet other Fellows/Leaders in the field/
- Networking & spawn interest in making science appropriation more rational (or national)
- Meeting the professionals at my assigned table
- Thinking about how little outreach I do every year.
- I finally saw a group of engineers try to figure out how to spread the word about what and why they do what they love to do.
- Recognizing that AIMBE is the organization that may effectively communicate to the public what we do, and how it directly affects the public.
- New ideas
- Meeting other Fellows under context where there is active dialogue among people that do not know each other.
- Ideas- But no commitment
- The role of AIMBE
- Great conversation
- Meeting new people
- Personal input.

- Some ideas that were discussed I plan to bring back to my Society to implement at that level.
- Exposure to ideas
- Networking.

2. Connectivity and sharing different perspectives
    - Connection with a few new fellows; getting some creative ideas
    - Have other perspectives from government and academia.
    - Learning other perspectives on QS
    - Hearing other perspectives to broaden my own.
    - It was fun to see other ideas.
    - Talk to other scientists and engineers about how to influence peopl's (K-12, illegible, general public) view on science and engineers (talk about creationism, intelligent design, US scientific, evidence based (medical) and evolution matters).
    - Heard many new ideas for value of MBE
    - Head the ideas of others.
    - Other people's ideas.
    - Many ideas I wouldn't have considered.
    - Learn new ideas from my colleagues at my table.
    - Many interesting ideas
    - Understanding more clearly the gap in continuity between academic and commercial objectives.
    - Interesting review of (illegible) ideas.
    - Reminder of the breadth of the college
    - Generating some new ideas- realizing that AIMBE is missing some important opportunities! Especially with media and social networking.
    - Not sure, but I liked the people at my table and enjoyed the discussion. Perhaps the greatest benefit was an appreciation of the valuable thoughts originating from other participants
    - Information and ideas

Other comments

- Quality of Reports limits the value of information fed back to the group. Have a training session for reporters.
- Not useful- going around tables to answer every question- better, compile, combine answers and distribute
- In wrap-up, the same things were stated that came up in the individual questions (i.e. action items)
- Need to provide better opportunities for Fellows to interact
- It is important that there be a useful (content rich and structured) summary of this session.