University of Massachusetts Lowell
Physics Department Alumni Advisory Board
Board Activities 2015-2016

This formal advisory board was founded after several years of meeting informally once each semester to discuss educational trends in physics, update alumni on new department initiatives and to renew alumni and faculty friendships. The current formal structure was formed during the November, 15, 2015 advisory board meeting. Subsequent meeting on February 4th, 2016 and March 3, 2016 were designed to continue to develop the board structure, give input to the department report to the AQAD team, and document board activities for the department and the AQAD assessment team. The Board also collected testimonial input from alumni on current job status and comments about how useful was the department in aiding their careers.

The Board will continue to work with the department in the areas of physics education and development as defined in our goal and organization document was well as give the department advice on what skills the alumni have found important to incorporate in their personal skill set in order to advance their professional careers.

During the Fall 2015/Spring 2016 Academic Year the Committee has accomplished the following:

**Held Meetings and Provided Meeting Minutes:**

The meeting minutes for the November 15, 2015; February 4, 2016 and March 3, 2016 meetings are given in Appendix I. The board has been very active in the quest to define itself and provide a vehicle to advise the physics department.

**Given the Department Feed Back:**

The board provided written comments and feed-back on drafts of the Department’s report to the AQAD Committee.

**Alumni Service:**

At the November 15th meeting alumni were asked if they would volunteer in a number of areas to support the department. A number of Alums volunteered.
Alums aided Prof Mittler with the Department’s Lowell Regional Physics Alliance this year. This group of high school teachers held physics meetings at the school in past years. Prof. Mittler and Alum Bill Toomey along with a core of high school physics teachers are reinvigorating the Alliance. See February 4th meeting minutes in Appendix I.

Testimonials:

Between October 1, 2015 to the present the Board asked Alumni to tell us how the department helped them in their careers. We wanted both the positive and the negative so that we could give feedback to the department. The testimonials were compiled in a separate document for AQAD review.

As the Board moves forward we will continue to seek advice and comments from all our Alumni as well as develop more ways the Physics Department Alumni can become involved with the students and faculty in the department.
Appendix I

November 15, 2015 Board Meeting Minutes:

I. Call to Order
Dr. William Goodhue called to order the regular meeting of the Physics Alumni Advisory Board at 7:00 pm EST on November 5, 2015 in Olney 136D (Physics Conference Room) on the North Campus of the University of Massachusetts Lowell.

II. Roll call
No Roll call was taken

III. Approval of minutes from last meeting
No minutes from last meeting were submitted for approval

IV. New Faculty Presentations
• Prof. Xifeng Qian – Quantum Dot Lasers and Sensors
• Prof. Timothy Cook – Sounding Rocket Astronomy
• Prof. Wilfred Ngwa – Medical Physics Research for Treating Cancers

V. Advisory Committee Board Structure (positions filled by volunteers)
• Chair: Dr. William Goodhue
• Co-Chair: Dr. John Prohaska
• Recording Secretary: Gene Vogt
Sub-Committee Formation (positions filled by volunteers)
• Education: Bill Toomey
• Development: Tim Carey
• Job Openings / Interns / Co-ops: Paul Alcorn
  • There is a need to document the existing University Co-op process
  • The Physics Department has such a deep and rich lab-based curriculum that not many students participate in the co-op program
• Social Media: TBD

VI. Open issues
None Raised

VII. New business
• Next Meeting needs to be scheduled
• Early February, with a follow-up meeting in mid-March to assist with AQAD preparation (6-8 April)
• Possible dinner meeting with the committee and AQAD members
- Investigate methods of remote meeting coordination (Google Poll, Go-To-Meeting, Skype for Business, etc.)
- [New business/summary of discussion]

VIII. Adjournment
- Dr. William Goodhue adjourned the meeting at 8:50 pm EST.
- Minutes submitted by: Gene Vogt
- Minutes approved by: [Name]

February 4, 2016 Board Meeting Minutes:

I. Call to order
Following a pizza social, John Prohoska (acting chair) called to order the regular meeting of the Physics Alumni Advisory Board at 7:00 pm EST on February 4, 2106 in Olney 136D (Physics Conference Room) on the North Campus of the University of Massachusetts Lowell.

II. Roll call
The following alumni were in attendance: Tim Carey (acting secretary), Vinod Menon (by telephone), John Prohaska (acting chair), John LeBlanc, Paul Acorn, Brian Krejca, David Kitrosser, Bill Toomey, and Andrew Miller.

III. Approval of minutes from last meeting
The minutes of the 5 November 2105, previously distributed by email, were approved.

IV. New Faculty Presentations
Dr. Robert Giles gave an overview of the Academic Quality Assessment and Development (AQAD) package that he is preparing to support the upcoming audits of the department. He solicited our feedback both in real time, and to submit consolidated comments by the third week of February.

The following captures the discussion, section by section of the document
1) Overview of the Department - A ten page color brochure describing the department, including: strategy; vision; mission; history; overview; comparison with peer and aspirant institutions.
2) Academic Plan - The academic plan is the one page summary strategy document for the department. This document is updated constantly and guides the evolution of the department in response to changing environments and a commensurate number of graduate students to execute this plan. Bob made it clear that rather than add existing areas of expertise, that the strategy was to increase the amount of interdisciplinary research with other departments in the College of Science and the College of Engineering.
3) Teaching and Research - Current Faculty expertise and offerings. Currently $10M in research, approximately $500K per full time faculty, primarily from NSF, DoD, NRC, DoE
4) Grad School “Shopper” – The description of the department most commonly referenced by prospective graduate students
5) Graduate Program – Information for Graduate Students covering offerings, matriculation and graduation requirements
6) Undergraduate Program - Information for Undergraduate Students covering offerings, matriculation and graduation requirements
7) Student Learning Outcomes – Enrollment, retention, and graduation rates for undergraduate and graduate students. This includes the results for “service” classes: physics course taught to other than physics majors. We had a detailed discussion of the pros and cons of service course for non-science majors.
8) Institutional Data – pertinent statistics comparing UMass Lowell to peer and aspirant institutions
9) Research Brochure – A twenty-six page color brochure describing department search activities
10) Student Evaluations of Programs, Curriculums, Teaching & Advising, etc.
11) Alumni advisory board goals, organization, activities, and testimonials

V. Sub-Committee Reports
1) Education: Bill Toomey talked about his work with the greater Lowell Regional Physics Alliance, and his goals of increasing collaboration between local high schools and the UMass Physics Department. This would aid the department in their recruiting activities which is an important component in peer and aspirant institution comparisons. There was a further discussion of potential support for the Mass State Science Fair, perhaps the Physics Department could host the regional finals.
2) Development: Tim Carey presented status of development activities and draft goals and objectives for the sub-committee (attached).
3) Job Openings / Interns / Co-ops: Paul Alcorn discussed the difficulty of linking job postings between (at least) his employer and the university. Advice was given to involve University Admissions and the Human Resources group from his company. There was a suggestion that the Computer Science Department in the College of engineering does a particularly good job of this and that contacting them might be useful.
4) Social Media: No chair yet, but there was discussion of what kind of presence the Physics Alumni Advisory board should have on the web (e.g., presence on the Physics Department web page, a blog, Facebook, etc...)

VI. Open issues/Action Items
1) Bob Giles requires inputs from the Alumni Advisory Committee by the third week of February on the content of the ADAD package. There will be an update the second week of March.
2) It is requested that all alumni complete a “testimonial” to support the AQAD process. Examples are found last part of the ADAD Notebook pdf file.
3) It is requested that each sub-committee recruit members and develop goals and objectives by the next meeting.
4) We still need to investigate methods of remote meeting coordination (Google Poll, Go-To- Meeting, Skype for Business, etc.)

VII. New business
1) Next Meeting March 3, 2016, specifically to review AQAD materials
2) Regular Quarterly Meeting June 2, 1016

VIII. Adjournment

John Prohoska adjourned the meeting at 8:30 pm EST.

Minutes Submitted by: Tim Carey
March 3, 2016 Board Meeting Minutes:

I. Call to order

[Facilitator Name] called to order the regular meeting of the Physics Alumni Advisory Board at 6:50 PM EST on March 3, 2016 in Olney Building Physics Break Room on the North Campus of the University of Massachusetts Lowell.

II. Roll call

No Roll call was taken. Attendees were:

<table>
<thead>
<tr>
<th>Name</th>
<th>Email Address</th>
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<tbody>
<tr>
<td>Gene Vogt</td>
<td><a href="mailto:efv@mitre.org">efv@mitre.org</a></td>
</tr>
<tr>
<td>Bob Giles</td>
<td><a href="mailto:Robert_Giles@uml.edu">Robert_Giles@uml.edu</a></td>
</tr>
<tr>
<td>Don Kim</td>
<td><a href="mailto:Don-Soo.Kim@tch.harvard.edu">Don-Soo.Kim@tch.harvard.edu</a></td>
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<tr>
<td>Shawn Smith</td>
<td><a href="mailto:Smith.Shawn@gmail.com">Smith.Shawn@gmail.com</a></td>
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<td>Beato Cheng</td>
<td><a href="mailto:beato@juno.com">beato@juno.com</a></td>
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<tr>
<td>Brian Krejca</td>
<td><a href="mailto:bdkrejca@yahoo.com">bdkrejca@yahoo.com</a></td>
</tr>
<tr>
<td>Paul Alcorn</td>
<td><a href="mailto:paulalcorn@gmail.com">paulalcorn@gmail.com</a></td>
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<tr>
<td>(Bill Goodhue)</td>
<td><a href="mailto:William_Goodhue@uml.edu">William_Goodhue@uml.edu</a></td>
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III. Approval of minutes from last meeting

No minutes from last meeting were submitted for approval

IV. Open Issues

None

V. New Business

1) The draft Academic Quality Assessment and Development Committee (AQAD) package being prepared was evaluated, and additions/modifications were discussed:

2) Dr. Goodhue had previously submitted comments on the draft AQAD package’s first paragraph.

3) A proposal was made to add a freshman or sophomore seminar-level course on medical/clinical physics to better acquaint students with the physical principles underlying many newer medical breakthroughs and technologies.

4) A suggestion to include a description of the current high school physics teacher outreach program in the AQAD package was made.

5) A discussion arose about the need to include exposure to statistical analysis and data visualization software packages (i.e., JMP [www.jmp.com], Minitab[www.minitab.com], etc.) that are used in commercial venues as new hires are expected to be familiar with these tools.

6) A discussion also arose about needing some way to instill the mechanics of presentation in general and technical presentation in particular to the students. Public speaking is a phobia for many individuals that is best cured by repetition, but how to present to a live audience, what techniques to use, and what techniques to avoid is often missing from a new presenter’s toolbox. Acquiring these tools by trial and error can be time-consuming, painful, psychologically damaging, and career damaging. A Toastmasters-like program that provides repetition for the phobia and skills for the
mechanics could be as important career-wise as exposure to software tools that are used in the field.

7) Other Topics

   a. It was decided to put the formation of the SOCIAL MEDIA subcommittee on hold. It was not obvious to participants what the benefits of opening a Twitter or Facebook account would be.

8) Upcoming meetings and points of interest

   a. The annual Society of Physics Students (SPS) Banquet will be held on 27 April 2016 (location TBA). All physics alumni are welcome to attend.
   b. Nominations for the annual Alumni of the Year award (to be announced and presented at the SPS Banquet 27 April) are being solicited.

VI. Adjournment

[Facilitator Name] adjourned the meeting at 7:45 pm EST. Minutes

submitted by: Gene Vogt

Minutes approved by: [Name]
August 23, 2015 Physics Alumni Advisory Board Executive Meeting Minutes

Bill Goodhue called to order the executive meeting of the Physics Alumni Advisory Board at 7:10 pm EDT on August 23, 2016 in the Olney Physics Conference and Break Room on the North Campus of the University of Massachusetts Lowell.

I. Roll call

Executive Committee members in attendance:

- Gene Vogt – efv@mitre.org
- Tim Carey – wtimothycarey@gmail.com
- John Prohaska – john.prohaska@verizon.net
- Bill Goodhue – William_goodhue@uml.edu

II. AQAD Report Response Input

The “Report from the External AQAD Review Team of the Department of Physics and Applied Physics, UMass Lowell (dated April, 2016)” was discussed, and the Alumni Committee’s input to the response to the report was outlined to focus on:

- new faculty presentations to alumni,
- candidates for alumni awards,
- alumni participation in student seminars,
- ways to increase alumni involvement.

Dr. Goodhue will draft a paragraph to be submitted to Dr. Giles.

Tim and John also volunteered to initiate an Astronomy Outreach effort to try to increase interest in use of the department’s astronomy assets and support for the Astronomy program. Using social media to amplify outreach to alumni was also discussed briefly. No decision or commitment was made at this point in time except to investigate further.

III. New business

a) Next Meeting: November 8, 2016

IV. Adjournment

Bill Goodhue adjourned the meeting at 8:50 pm EDT.

Minutes submitted by: Gene Vogt

Minutes approved by
Excerpts from the April 2106 AQAD Report
The department has established an extremely enthusiastic alumni advisory group. The university has the enormous advantage that there are a large number of tech companies in the nearby area, and a correspondingly large number of alumni nearby. The department has taken advantage of this by setting up a board of alumni with loyalty to the department and invaluable ties to industry and local companies. We encourage the department and the Alumni Board to increase the interaction with students and to use social media and other means to increase the involvement of alumni and local industry with the department.

External PR and Alumni Board:
We commend the department on establishing a supportive and enthusiastic group of Alumni. We recommend that the Alumni Board meet periodically (twice a year) and graduate students to share their experiences, wisdom and job placement network potential. Perhaps the Alumni Board could provide advice on PR and using social media to further connect with the broader alumni base and to take advantage of alumni and potential industrial partners in the local area.

Physics Alumni Board Response to AQAD Report August 2016
The Physics Alumni Advisory Board and all Physics Alumni thank the AQAD Review team for all their time and effort in reviewing both the Physics Department and the work of the Physics Alumni Advisory Board. At our Executive Committee Meeting on August 23, 2016 we reviewed your recommendations to the board. We agree that we should become more involved with the students and work to have more alumni participate with the department. We have started by planning two events.

First, this spring we plan to have an alumni symposium where alumni from industry and government research can interact with students, both undergraduate and graduate. We are considering a several formats for the event including a kind of speed-dating format with small groups of students rotating between alumni, in which a brief background presentation and discussion will occur.

Second, two executive board members are initiating an Astronomy Outreach effort to increase the awareness and use of the department’s astronomy assets and to support the Astronomy program. In particular, this effort will also help find a way to site a superb telescope that was recently donated to the department.

We will continue to hold our Alumni meetings in order to make the alumni more aware of the good things happening in the department and to seek their opinions on ways to continue to support the students and programs. We hope to dramatically increase the participation of our alums and are assembling a comprehensive database of the approximately 1000 Physics Alums that have passed through the program. This database will form the basis for future outreach via, email, social media, and print.