JTFSO Undergraduate Research Sub-Committee Proposals, 3/5/2013

A. General approach

Themes

Integrate research opportunities into the broader curriculum and opportunities for students in ways appropriate for each level of student experience

Integrate and coordinate efforts across campus to support undergraduate research

The whole enterprise of undergraduate research could be regarded in two distinct ways:

1. undergraduate research should be integrated throughout the curriculum
2. undergraduate research is driven by what opportunities principal investigators are able to offer

Leading question: is the goal to enhance what exists or to integrate research into every department and every level of undergraduate studies?

Is the goal to give every student a research experience, or is the idea that participation in research is one option for students as they proceed thru the program?

Two broad concerns

1. ensuring that students and parents not yet sophisticated about what to seek get access to information
2. ensuring that Commonwealth Honors College needs do not crowd out all opportunities for the approximately 80% of students not in CHC

B. Specific proposals

Proposals for funding undergraduate research

Specific objective: Raise more external funding for undergraduate research

Campus context: A new UMass campaign to be launched later this Spring will highlight the importance of support for undergraduate activities. Since parents increasingly are asking for research opportunities for students, it is timely to add support for undergraduate research to the goals of campaign.

Tangible actions: Ask the development office to add support for undergraduate research to the goals of the upcoming UMass campaign. Charge the deans to make this goal a priority at
the college level and integrate fundraising for research support with fundraising for other undergraduate activities like study abroad and internships.

Specific objective: Integrate student research support into existing opportunities

Campus context: Campus-wide activities like service learning and community outreach already have research components. Institutionalizing and regularizing the research done as part of these activities is a cost-effective way of both increasing and publicizing research opportunities for undergraduates.

Tangible actions: Charge the various units involved in these existing activities with identifying, coordinating and publicizing the research components already available. (See proposals below to integrate with co-ops, internships, community service, etc)

Proposals for integrating and coordinating research support across campus

<table>
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<tr>
<th>Recommendation</th>
<th>Specific Objective</th>
<th>Campus Context</th>
<th>Tangible Action Required</th>
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<td>Departments should retain control of defining and operating programs promoting undergraduate involvement in faculty research.</td>
<td>Keeping control at the level most attuned to the particular needs, career relevance, and ability to provide such opportunities.</td>
<td>Opportunities to assist in faculty-led research are one of several ways undergraduates can acquire research experience; the one reason academically ambitious undergraduates are attracted to research campuses.</td>
<td>1. Resisting temptations to centralize. 2. Facilitating departmental efforts. Departments report relevant data on participation to the Office of Undergraduate Research and Studies.</td>
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<td>Office of Undergraduate Research and Studies should add links to departmental undergraduate research pages to its website and should be easily identified from main UMass webpage.</td>
<td>Provides easier access to location of the information most relevant to students in or considering a particular major.</td>
<td>Meets the goal of facilitating identification of undergraduate research opportunities by providing multiple portals (UMass and OURS webpages) that can be used by parents and students.</td>
<td>Some additional effort to keep Office of Undergraduate Research and Studies website up-to-date.</td>
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<td>Improving communication between Commonwealth Honors College and other academic</td>
<td>Ensure that CHC need for faculty participation in capstone, thesis and other honors requirements does</td>
<td>CHC is a desirable feature of campus, but the campus accessibility mission requires paying attention to all</td>
<td>Establishment of understandings on how large the CHC enrollment will become, particularly as long as increases in student</td>
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Proposal to enhance student awareness of research opportunities and to create a culture that values research

Specific Objective: To facilitate effective dialogue between the scientific community and the general public. This would be in the format of a Forum for Undergraduate Research (FUR)

Campus Context: There is a wealth of research being conducted at this R1 university, and an undergraduate-driven blog will serve to showcase this research to the campus community, alumni, industrial investors, and business partners. In addition, the blog will aid in attracting top high school students to attend the University of Massachusetts. By using the Wordpress platform, the blog will be free to start and low-cost to maintain.

Tangible Actions: Ask instructors from the IE (integrative experience), junior-year writing, and writing-focused science courses to have students post their class projects on the blog. Coordinate with the Commonwealth Honors College, College of Natural Sciences, and College of Social and Behavioral Sciences to have senior capstone projects posted on the blog. Ask PIs on campus to instruct their undergraduates to post their semester-long research reports on the blog.

Proposal to integrate research opportunities into the curriculum

Provide students with different levels and mechanisms for research depending upon their level of experience at UMass.

First year students would have opportunities to learn basic research skills. Formats could include separate courses (like the Library’s digital literacy course), modules in existing courses such as gen ed or first year writing experiences, or new dorm-based classes.

Second year students would be given a somewhat more independent research experience to put to use the general research skills developed in the first year. These could be in existing courses that focus on research (for example, in Sociology a course on survey techniques) or through opportunities such as service learning courses, co-ops and internships.
Third and fourth year students, who are now in a major, would do research either through existing classes, independent studies, one-on-one research with a faculty mentor or through external opportunities such as service learning courses, co-ops and internships. This research would be more independent and skills-based, applying research skills appropriate to the student's chosen major. Upper-level classes would need to become more research-oriented for this to be a pathway for any significant number of students.