

Physics Programs Threatened by Productivity Review in Massachusetts

Late last fall the Massachusetts Board of Higher Education mandated a statewide productivity review of higher education: All degree programs that graduate on average fewer than five students per year came under scrutiny and must compellingly justify their existence—or be cut. Since then, faculty members and administrators have been scrambling to marshal arguments to save at least some of the 41 threatened programs, including the 3 physics programs offered in the state college system. Their proposals were due last month, and the board is expected to announce its decisions on 17 June.

One thing that makes the Massachusetts productivity review different from more traditional academic program review processes is that it “looks to see what programs could be eliminated,” says Lynette Robinson-Weening, the Board of Higher Education’s senior associate for policy development. “The programs triggered for review need to provide the rationale for being continued—the onus is on the institutions.” Robinson-Weening says that the board isn’t aiming to cut spending by any specific dollar amount. “We want them to look closely at where they are spending time, attention and money to see how they might reallocate resources to enhance the quality of programs where the student demand is greatest.” Initially, PhD programs were also slated for review, but this became moot after the board exempted the University of Massachusetts system from this year’s productivity review, “because it had already fulfilled the demands of the review on its own,” says Robinson-Weening. So, for now, only community and state colleges will be affected.

Faculty members are worried about the future of their institutions’ programs (but not about their own jobs). The productivity review “gives undue weight to demand, and not enough to need,” says Thomas Eames, a chemistry professor at Framingham State College and, until 1 May, president of the local chapter of the statewide faculty and librarians association. Moreover, many fear that the review favors professional majors at the expense of academic ones. Eames adds that “the largest single major is ‘undeclared.’ Narrowing the choice could hurt enrollment.”

“Other departments should take [Massachusetts’s productivity review] as a warning sign,” says Brian

Schwartz, a physics professor at City University of New York who served on an evaluation committee for a similar review process in Virginia (see *APS News*, February 1997, for a discussion of his recommendations for evaluating physics programs). “These reviews will happen whether we like it or not. We had better be prepared. We are vulnerable because there are other real pressures at universities to be more efficient and to fund departments that have growing student demand.”

Physics cuts *en masse*?

“This [productivity criterion] would just about close physics in the state colleges,” says William Belanger, chair of the physical and Earth sciences department at Worcester State College. Indeed, the “rule of five” triggers programs at above the nation’s average production rate of physicists—four per year is the national average for physics departments where the highest degree offered is a bachelor’s, and 72% of these departments wouldn’t pass the rule-of-five test, according to American Institute of Physics figures for 1993–95, the period used in the Massachusetts review. So it’s no surprise that the major is threatened at small schools like Bridgewater, North Adams and Worcester State Colleges. In fact, programs in the natural sciences account for more than a third of all programs being reviewed.

In defense of their programs, Belanger and others point out that physics provides service courses for other majors—and that the additional courses required for the physics major are few. “Only one-third of a faculty member would be freed up by eliminating the major,” says Bridgewater physics chair George Weygand. “The savings would not justify the total impact on the college. And we wouldn’t be able to draw the quality of faculty that we want.” He and others also point to such things as outreach programs, ties to industry, the need for more physics teachers (Bridgewater offers teacher certification in physics) and the success of their graduates. Another argument is that the state college system serves many working, location-bound students, which means that “pooling resources [among campuses] wouldn’t work,” says Eames.

In their recommendations to the board, the presidents of Bridgewater, North Adams and Worcester State Colleges argued to continue offering the physics major. As part of his institu-

tion’s appeal, North Adams State College president Thomas Aceto asked for “time to build up enrollments.” Other programs were either likewise defended, or else recommended to be phased out, subsumed into larger majors (remaining available as concentrations) or restructured. Framingham recommended, for example, that its chemistry major increase its emphasis on education.

For the future, says Ann Lydecker, provost and academic vice president of Bridgewater State College, “I will argue for locally based program reviews—that would take the ‘they are doing it to us’ out of it. I doubt college presidents are anxious to have a lot of resources in things that are not productive.” About the board’s new “add-one/drop-one” policy, which requires that institutions drop a program before being permitted to add a new one, Lydecker says, “It does not equate. The question should be one of resources, not programs.” Robinson-Weening admits that the faculty’s fears “are not an overreaction.” Future productivity reviews may be even more far-reaching, she says, since the board plans to look more closely at programs within programs.

Meanwhile, the colleges await the board’s verdicts.

TONI FEDER

New Master’s Degree in Beam Physics Is Offered

A particle accelerator is not a simple machine, and to build and run one demands a broad understanding of its science, technology and applications. That is the thinking behind a new master’s degree in beam physics and technology being jointly offered by the US Particle Accelerator School (USPAS) and Indiana University.

Unlike a specialized PhD program, this master’s degree program is intended to give a multidisciplinary overview of how accelerators operate and what they’re used for. “No single university department can do that—they don’t have the faculty,” says USPAS director Melvin Month. But the USPAS, which meets twice a year and rotates among research universities throughout the US, draws its instructors from a variety of institutions to teach intensive courses on beam science and technology. For example, the USPAS being hosted this month at MIT includes such topics as accelerator instrumentation, computation, laser applications and management of science labs.

Although the master's degree will be awarded by Indiana University, students in the program will not enroll at IU full-time. Indeed, Month expects to see working professionals as well as graduate students and even undergraduates enrolling. The degree requires completion of 18 credits' worth of courses through the USPAS. In addition, students must do a thesis project and take courses in electromagnetism and classical mechanics at IU or another university.

Martin Reiser, who chairs the executive committee of the American Physical Society's division of physics of beams, calls the new master's degree program "an innovative idea." Having survived "the shock" of the Superconducting Super Collider's cancellation, Reiser says, the accelerator field is growing once again, as evidenced by the recent rise in USPAS attendance. Among the many projects now in the works is the National Spallation Neutron Source at Oak Ridge National Laboratory. "If it

survives Congress, that facility alone will be a major undertaking," Reiser says, "and there will be a need for many people to build and run it."

For information, contact the USPAS, Fermilab, MS 125, PO Box 500, Batavia, IL 60510; phone 630-840-3896; e-mail uspas@fnal.gov.

JEAN KUMAGAI

Gehrz Will Be Next President of AAS

On 11 June, Robert D. Gehrz of the University of Minnesota will take office as president-elect of the American Astronomical Society. Next June, Gehrz will succeed Andrea K. Dupree as president of AAS.

Gehrz earned a BA and then a PhD in physics from the University of Minnesota, in 1967 and 1971, respectively. After a one-year stint as a research associate there, he joined the physics

and astronomy faculty at the University of Wyoming. In 1985, he returned to Minnesota as a professor of physics and astronomy and director of the university's two observatories. Gehrz's research expertise lies in infrared astronomy, including ground- and space-based infrared observations of classical novae, comets, luminous variable stars, galactic molecular cloud cores and starburst galaxies.

AAS also elected a new vice president: Virginia L. Trimble, a professor of physics at the University of California, Irvine, and a visiting professor of astronomy at the University of Maryland at College Park. Trimble, who holds a 1968 PhD from Caltech, is known for her studies of the structure and evolution of stars and galaxies. She has also done work on the history and sociology of astronomy and physics.

In other election results, R. Bruce Partridge of Haverford College was chosen education officer; Geoffrey W. Marcy of San Francisco State Univer-

Web Watch: Web Access by E-mail

Occasionally we get requests from readers whose only Internet capability is e-mail. In fact, e-mail is all you need to access the Web, thanks to a number of servers that will retrieve documents and send them to you. A good starting point for information on this subject in general is "Accessing the Internet by E-mail," by "Dr. Bob" Rankin. Indeed, most of the information in this Web Watch is drawn from that source. His guide also spells out how to use e-mail to access other facets of the Internet, such as Gopher, FTP (file transfer protocol), Usenet newsgroups, WAIS (Wide Area Information Service), Netfind, Archie and Veronica.

▷ You can get your own copy of the latest edition of Dr. Bob's guide by sending an e-mail to mail-server@rtfm.mit.edu with only the following in the text space, or body, of the e-mail: **send usenet/news.answers/internet-services/access-via-email**

Alternatively, you can send an e-mail to the UK mail server mailbase@mailbase.ac.uk with only the following in the body: **send lis-iis e-access-inet.txt**

▷ Perhaps you would like to have Dr. Bob's instructions in, say, Chinese (cn or tw), Farsi (ir), Somali (so) or even Esperanto (eo). Volunteers have translated the guide into about 30 languages. Just send an e-mail to BobRankin@mhv.net with the following as the *subject* of the e-mail: **send accmail.xx** (replacing "xx" with the appropriate two-letter code). Files in languages that don't use the English alphabet will generally need to be uudecoded, and you may also need special font files. For a list of languages and related files available, use **send readme.txt** as the subject. For general information on accessing these files automatically from Dr. Bob, use **send help** as the subject. Naturally, the translations tend to be less up-to-date than the original. Now, on to a few of the servers. . .

▷ agora@dna.affrc.go.jp

▷ agora@kamakura.mss.co.jp

To use these servers, send them an e-mail with a command line in the *body* of the e-mail. For example, to have PHYSICS TODAY's home page sent to your return e-mail address, the command line would be **send http://www.aip.org/pt/**

If you want the file sent to another address, say, fred@phys.edu, use **rsend fred@phys.edu http://www.aip.org/pt/**

Agora will send the page you've requested formatted in ASCII (text). Images are indicated by "[IMAGE]" or other alternative text. Links to other pages are indicated like numbered references in square brackets, with the addresses (URLs) of the links listed at the end of the document. The Agora help file is summoned with the simple command line **www** in the body of the e-mail.

Other Agora servers are listed in Dr. Bob's current instructions, but my tests in March and April suggest they are not on-line.

▷ w3mail@gmd.de

▷ getweb@usa.healthnet.org

These two servers use the command "get" instead of "send." Use the command "help" to get their help files. The German W3mail server sends the actual html file, so if you have browser software you can use it to view the file. The Getweb server sends the requested page formatted in ASCII like the Agora servers. Many Web pages use forms—documents that are displayed with various "buttons" that can be set and with spaces where you can enter information or choices. Getweb lets you handle such pages by e-mail; send it this command for more information: **help forms**

▷ webmail@www.ucc.ie

With this server, use "go" instead of "send" or "get."

▷ Finally, a few notes about etiquette, quoted directly from Dr. Bob's guide: "The e-mail servers . . . are for the most part operated by kind-hearted volunteers at companies or universities. If you abuse (or over-use) the servers, there's a very good chance they will be shut down permanently. This actually happened to several of the e-mail servers in 1995 and 1996. If you have more direct Internet access, let others who are less fortunate use the e-mail servers. Try to limit your data transfers to one megabyte per day. Don't swamp the servers with many requests at a time."

Current and past issues of Web Watch are included on PHYSICS TODAY's home page, <http://www.aip.org/pt/>. If you have suggestions for other topics or sites to be covered in Web Watch, please e-mail them to ptwww@aip.acp.org.

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