Meeting Minutes: Committee on Physics and Astronomy

Meeting Minutes
Academic Advisory Committee on Physics and Astronomy
March 23, 2001
Coastal Georgia Community College, Brunswick, Georgia

The Regents' Academic Advisory Committee on Physics and Astronomy convened on Friday, March 23, 2001, in Room 274 of the Science Building at Coastal Georgia Community College, Brunswick. After a brief welcome from Dr. H. Douglas Tuech, Vice President for Academic Affairs, on behalf of the President of the College and staff, the meeting was called to order by Dr. Ian Gatland at 10:05 A.M. The meeting adjourned at 12:20 P.M.

A list of attendees follows the minutes.

ITEM 1. Old Minutes.

The minutes of the last meeting of the Academic Advisory Committee were approved, with one correction of a name. Dr. Chandra moved the minutes be accepted and Dr. Hasbun seconded; the motion passed unanimously. Dr. Baker reiterated that the Committee has its own web site where the minutes can and should be posted.

ITEM 2. Academic Program Review.

The Board of Regents office staff report was distributed, and all members in attendance received a copy. Dr. Gatland made note of certain staff changes

Dr. Marks brought up the issue of Academic Program Review. He said that the Vice Presidents for Academic Affairs at each institution were asked to make a timetable for academic review of all programs and submit them to the Board of Regents (BOR) by April 30 th . His concern was that the BOR Review policy includes a 'trigger mechanism' so that programs with 10-15 students or less, or 5 or fewer graduates or less, by a three-year average may be reviewed earlier than the proposed timetable. Since physics programs generally have small numbers, these programs may be triggered. Small, expensive programs may need to be justified, so he believed we should all be very aware of this review program. Also, the Central Office can decide if a discipline can be reviewed system-wide, and the Board of Regents can choose to 'group' programs or to concentrate low enrollment programs (such as physics) into only a few of the University System of Georgia (USG) institutions.

Dr. Merritt, who is a member of the Program Review steering committee, said that a 'program' may be defined to include a group of pre-science preparatory programs. Dr. Wozny noted that, for two-year schools, an Arts and Sciences division might be considered a 'program'. Dr. Merritt also expressed his opinion that the pre-engineering programs should be concerned, since the number of students transferring into a degree program at another school may be used as a measure of effectiveness of the program of study. Therefore, it is important that an institution maintain data on those students who continue on to other institutions.

Dr. Hasbun cited a statistic that he discovered during an earlier review of the combined math and physics

programs at his institution that the average number of physics graduates for 700 institutions was 5.2 graduates per year, and suggested that this average might be smaller for Georgia institutions as a group.

[NOTE: The study cited was conducted by the American Institute of Physics, Education and Employment Division, AIP Pub. No. R-394.5, August 1999. Also, the average number of graduates per year for Georgia in the study was 4.75 per year. This information has been supplied by Dr. Hasbun and was communicated to me after the meeting.]

The Committee then discussed the small size of physics programs in terms of majors and graduates, but also noted that these programs provide service courses for non-majors. Dr. Marks recommended talking to administrators at our own institutions about these matters, and to also discover the local timetable for our program. Dr. Baker and Dr. Ezell concurred. The point was made that the Dean of each institution may need to argue for particular low-enrollment programs, but Dr. Marks added that we should be prepared to make these arguments ourselves.

ITEM 3. ECORE.

Dr. Wozny shared with committee members information about the proposed ECORE and GLOBE (Global Learning Online for Business and Education). Copies of documents were distributed which called for the development of ECORE courses this upcoming summer, including Principles of Physics, PHYS 2211 and PHYS 2212. Dr. Wozny shared his experiences as a member of the Chemistry Academic Advisory Committee at the January 2001 meeting, where the appropriateness of online laboratory experiences for the Principles of Chemistry courses, CHEM 1211 and CHEM 1212, were discussed extensively. The Chemistry Committee (and, apparently, the Biology Academic Advisory Committee, based on information shared at that meeting) had serious misgivings about the quality of on-line lab experiences for the preparation of chemistry (or biology) majors. Dr. Wozny shared his opinion that a quality physics laboratory experience for an on-line course was possible.

The committee as a whole discussed the nature of on-line laboratory experiences and how they might be performed. The relationship between ECORE, GLOBE, and the University System was also discussed. The practice and philosophy of an electronic or on-line Core, the ability of students to complete an on-line course successfully with an acceptable level of competency and understanding of physics, and the cost and method of delivering experimental apparatus to students were among the subjects discussed. Many committee members expressed concerns or misgivings about ECORE and on-line instruction, including the laboratory experience. Dr. Gatland compared the approach embodied by ECORE to certain programs currently offered at Georgia Tech for non-traditional students and expressed his opinion that such a program could be successful.

Dr. Wozny made the point that GLOBE was soliciting USG faculty members to develop these courses, but they also had the option of seeking other developers or third party vendors. Therefore, it would be better for the University System to be engaged in the development of these courses than to 'opt out'. He encouraged Committee representatives from institutions with a larger body of physics faculty to pass on the solicitation to colleagues who may have an interest in on-line learning and delivery of instruction, and who could also use the

experience of creating on-line materials as part of their own professional development portfolios.

ITEM 4. Astronomy Courses.

Dr. Gatland polled the committee about including astronomy courses in Area D of the core. This was an issue at Georgia Tech, because they have only one semester of General Chemistry instead of two, and are looking for appropriate courses to use in this area of the general education requirements.

Dr. Marks (VSU), Dr. Baker (UGA), Dr. Hasbun (West Georgia), Dr. Davies (Gordon), and Dr. Torbett (Macon State), as representatives from institutions which offer astronomy courses to science majors or non-majors, all offered advice concerning astronomy courses including: content, numbering of courses, level of mathematics, popular authors of astronomy texts, the relationship between a lecture section and laboratory, and the cost of setting up an astronomy lab.

ITEM 5. Physics content and course descriptions.

Dr. Baker asked for the opinions of committee members concerning the possibility of changing the common course descriptions of Introductory Physics, PHYS 1111 and PHYS 1112, and Principles of Physics, PHYS 2211 and 2212. He felt that the current descriptions - in which the first semester is to include mechanics, waves, and thermodynamics; and the second semester is to include electricity and magnetism, optics, and modern physics - is to restrictive.

Dr. Marks noted that re-partitioning the content of the physics sequence won't solve the problem because there is not enough time in two 3-hour lecture/1-hour lab courses to cover all material thoroughly. Dr. Gatland asked us to consider the purpose of the introductory courses, and stated the opinion that we can't teach everything deeply, but we can teach a few things well. He recommended teaching Mechanics and Electricity and Magnetism thoroughly. Dr. Baker pointed out that if the current course descriptions are taken seriously, then we should be including the topics listed in the semesters that they are mentioned in the catalog descriptions.

Dr. Baker and Dr. Ezell called for greater flexibility. The importance of certain physics topics for health sciences majors was also briefly discussed. Some committee members felt that a discussion of re-wording descriptions for the algebra-based sequence was worth considering but not the calculus-based sequence. Dr. Baker felt that both sets of descriptions should be changed. Dr. Pandey suggested discussing the issue on the list serve. Since there was no proposed new wording before the committee, the consensus of the committee was that we would continue the discussion by email, with the possibility of a recommendation and email vote resulting from that discussion.

ITEM 6. Dual degree programs with GA Tech.

Institutions with dual degree programs with Georgia Tech questioned Dr. Gatland about the institute's requirements for different programs. Concern was expressed that transfer students cannot enter engineering programs as Juniors because requirements haven't been met because the courses at Georgia Tech are

continually changing: i.e., linear algebra is now a separate course and Calculus II is not an acceptable substitution for it. Opinions and suggestions were offered by Dr. Davies, Dr. Schimmrigk, and Dr. Merritt. Dr. Gatland recommended that the requirements and expectations of each engineering department at Georgia Tech be considered separately, and that many departments are still in the process of changing course requirements as a result of semester conversion. He also suggested that students interested in industrial, electrical, or computer engineering may have the most problems.

ITEM 7. Recognition of Dr. Marks.

Dr. Dennis Marks, representative from Valdosta State University, was recognized for his contributions to the Academic Advisory Committee on Physics and Astronomy and to the physics community in Georgia in general on the occasion of his retirement, after thirty years of service in the University System of Georgia. He received a plaque from the Committee and a standing ovation from his colleagues. He commented that this Committee was the only one that he would miss.

ITEM 8. Elections.

Dr. Javier Hasbun, State University of West Georgia, was nominated by Michael Pangia, Georgia College and State University, to serve as chair-elect for 2002-2003. The motion was seconded, nominations were closed, and Dr. Hasbun was voted in unanimously. Representatives chosen for the Executive Committee from each of the three institutional types were Chad Davies, Gordon College - two-year schools; Marv Nelson, Georgia State University - research universities; and Michael Pangia, Georgia College and State University - four-year schools.

ITEM 9. Adjournment.

The meeting adjourned at 12:20 P.M.

REPRESENTATIVES IN ATTENDANCE

Lee Tucker	Southern Polytechnic
F. Todd Baker	University of Georgia
G. William Donaldson	East Georgia College
Surendra N. Pandey	Albany State University
Walter G. Merritt	Darton College
Michael V. Torbett	Macon State College
David Wycherley	Dalton State College
Mariam Dittman	Georgia Perimeter College
Ron Ezell	Augusta State University
Chad Davies	Gordon College
Roy C. Wood	Armstrong Atlantic State University
Morris Whiten	Armstrong Atlantic State University

Brian Thomas	Georgia State University
Ted LaRosa	Kennesaw State University
Rolf Schimmrigk	Georgia Southwestern State University
Michael Pangia	Georgia College and State University
Charles Kao	Columbus State University
Dennis Marks	Valdosta State University
Arnold Somers	Valdosta State University
Dick Prior	North Georgia College and State University
J. Hasbun	State University of West Georgia
Kailash Chandra	Savannah State University
Christopher Wozny	Waycross College
Ian Gatland	Georgia Institute of Technology
Ntungwa Maasha	Coastal Georgia Community College

Respectfully submitted,

C. Wozny