Keeping community college faculty current in physiology through utilization of health science center expertise

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Smith, David S. Keeping community college faculty current in physiology through utilization of health science center expertise. Am. J. Physiol. 262 (Adv. Physiol. Educ. 7): S23-S24, 1992.—The maintenance of current knowledge in physiology in community colleges is very difficult to accomplish. The absence of a research environment, limited library facilities, and heavy teaching loads often result in the instructor utilizing the teaching textbook as the primary source of information. A cooperative program between The University of Texas Health Science Center at San Antonio and San Antonio Community College has been developed in which the Health Science Center faculty present updated seminars in physiology topics for the community college faculty. This program has been in existence for three years and has proved to be very effective in improving the quality of the physiology curriculum at the community college.

A MAJOR PROBLEM faced by college-level physiology instructors is to maintain an up-to-date knowledge of their subject. Although all physiologists face this problem, it is especially acute in the community colleges. There are several reasons for this state of affairs.

First, community colleges are primarily teaching institutions and do not have extensive research programs, especially in laboratory-intensive disciplines, such as physiology. Consequently, instructors are removed from the frontiers of scientific advancement. Second, the libraries at such institutions are frequently deficient in advanced discipline journals. Without research programs, extensive collections of research journals cannot be justified in this era of tight budgets. A third reason is that the teaching load at these institutions can be so heavy as to preclude any extensive outside reading program, even when materials are available. For example, in the Department of Biology at San Antonio College, an urban 2-yr comprehensive community college, the normal teaching load is 18 contact h/wk. Because of high course demand, instructors often teach overloads, yielding a total of 24 contact h/wk. The additional time required for normal preparation of lectures and laboratories, office hours, and the routine administrative duties of a faculty member leaves very little time available for study of the literature.

Maintaining current knowledge in physiology is especially difficult for the instructors of human anatomy and physiology. The enrollment in this course has increased dramatically over the years, largely due to the high numbers of students wishing to pursue careers in clinically related sciences. This has meant that instructors with very little expertise in physiology have found themselves teaching this subject. In our department, for example, nine full-time instructors teach a majority of their loads in this course, yet only two have had extensive graduate work in physiology. It is little wonder that under such conditions the instructors tend to rely on the teaching textbook as their principal source of information.

Several years ago, San Antonio College, in an attempt to deal with some of these problems, established an Office of Faculty Development. One of the goals of this project was to help faculty update their subject knowledge by providing funds for special projects, research, conferences, and other areas that would be helpful. After extensive discussion the Department of Biology decided that it would be more cost effective to bring several subject experts to our campus for all of our faculty rather than sending one or two of our faculty members to a conference for subject updating. Funds were obtained from the Office of Faculty Development for a pilot program, and contact was made with the University of Texas Health Science Center at San Antonio. The faculty at the Health Science Center were very enthusiastic about the program and agreed to present seminars at our institution for 2 h/wk in their respective areas of expertise.

The pilot program was devoted to endocrinology and reproductive physiology. Each area received 5 wk of seminars for a total of 10 h each. The assessment of the pilot program was so positive that it was decided to extend the seminars for a second year. The topics chosen for the second year were immunology and neurophysiology. This past year was our third, and this time our topics were broadened to include some subjects that would be of special interest to our microbiologists. Table 1 presents the seminar topics that have been presented during the past two academic years.

During the first year of the seminars, some instructors were not able to attend because of conflicts with their teaching schedules. This problem was solved by having the college Audio-Visual Department videotape each seminar. The tapes were then placed in the Biology Department's Study and Resource Center where they could be viewed by both interested faculty and students.

As these seminars have progressed, so has the attendance. In addition to our own faculty, we now routinely have faculty from our nursing college as well as faculty members from our sister campuses in the community college district.
Table 1. A listing of seminar topics

### 1989-1990
- Topics in immunology
  - Host defenses: an overview
  - Antibody diversity
  - Tissue rejection: transplantation
  - Autoimmunity
- Topics in Neurobiology
  - Synaptic transmission
  - Advances in neurochemistry
  - Physiology of the pineal gland
  - Aging and the brain

### 1990-1991
- Topics in physiology and microbiology
  - Cardiovascular adjustments to exercise
  - Growth factors in hematology: impact of molecular biology
  - Recombinant DNA technology
  - Advances in virology
  - Pathogens of bacterial infections
  - Streptococcal genetics
  - Biology of Trichomonas vaginalis

Each seminar was 2 h.

The evaluation of the seminars for the first two years had been largely anecdotal. For the third year a formal questionnaire was given to each faculty member who attended the seminars. The responses to four key questions from this questionnaire are presented in Table 2. As may be seen, the response from the faculty was overwhelmingly positive. Especially significant was the fact that 12 of 14 respondents reported altering their course content as a result of these seminars. This indicates that the seminars have at least partially achieved the goal of updating course content.

Table 2. Faculty responses from seminar evaluation questionnaire

<table>
<thead>
<tr>
<th>Evaluation Questions</th>
<th>Positive Responses</th>
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<tbody>
<tr>
<td>I was helped as a teacher</td>
<td>13</td>
</tr>
<tr>
<td>I learned new information</td>
<td>13</td>
</tr>
<tr>
<td>I became more confident of my knowledge</td>
<td>13</td>
</tr>
<tr>
<td>I altered my course contents as a result of these seminars</td>
<td>12</td>
</tr>
</tbody>
</table>

Positive responses were those of 14 total questionnaires returned.

tance of training physicians, dentists, and nurses, they do not understand the significance of the extensive research that the health science centers are involved with. By providing these seminars, the Health Science Center is able to explain the research that is being done and its significance. It is a message that is amplified because the information provided, and its source, becomes incorporated into our courses and is transmitted to our students. As a consequence, an educational message about the Health Science Center’s mission is also being presented.

For the Health Science Center faculty who participate there is the opportunity to discuss their work with an appreciative and understanding audience in a relaxed atmosphere. There is not the pressure that normally accompanies a presentation to one’s colleagues at a professional meeting. Nobody has any physiological axes to grind. Many of the Health Science Center faculty who have participated report that they enjoyed it and found the questions asked both stimulating and thought provoking.

Finally, there is the opportunity to make institutional contacts that can be useful in the future. For the Health Science Center faculty who are interested in science education, the community college provides a large laboratory group of students. During the presentation of the seminars, personal relationships develop between the respective faculty that facilitate joint projects.

The program that has been described can serve as a model for similar institutional relationships in other regions of the country. It is a type of symbiotic relationship in which all participants benefit, and ultimately, the physiology students benefit the most.

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