

THE FORUM

NEWSLETTER

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Basic Science Education Special Interest Group

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Message from the National Director

Good things are happening! The BSEF has grown by over 28% since the appearance of our first issue of *The Forum* newsletter, and I am daily receiving requests from basic scientists who wish to join our ranks. For this I thank all of you who have shared a copy with a friend, and especially the 143 Dean's Delegates who gave of their time to circulate this newsletter to the basic science departments and individuals within their respective U.S. and Canadian medical schools. As this publication gains significance through reputation, even more individuals will be attracted to our organization. And together, we will achieve consensus and resolve the issues we have undertaken.

I am pleased to announce that Thomas M. Devlin, Ph.D., Professor and Chair of the Department of Biological Chemistry at Hahnemann University School of Medicine in Philadelphia, has accepted the position of Associate Editor for our column *Innovations in Basic Science Teaching*. Dr. Devlin is currently an Asso-

ciate Editor for the journal Biochemical Education sponsored by the International Union of Biochemistry, and is personally active in the field of innovative teaching. Although we frequently seek collaboration with our research efforts, many basic scientists work in isolation when creating oftentimes thoughtful and stimulating ways to convey their disciplines to students. Very few share those efforts with others. *The Forum* newsletter now provides a vehicle for such sharing and will begin accepting descriptive articles of 1,000 words or less. Once again, I would encourage you to share your creativity with us all through this medium. For further information, contact Dr. Devlin directly by phone: (215) 448-7947 or FAX: (215) 448-3722.

Beginning with our Summer, 1992 issue, we will be featuring a series of articles on *Clinical Correlations in the Basic Sciences*. Gabriel T. Virella, M.D., Ph.D., Professor of Microbiology and Immunology at the Medical University of South Carolina has graciously accepted the role of Guest Editor for this series. In the next three issues of this newsletter, two 750-1,000 word articles will appear, each describing clinical correlations in a basic science discipline.

The Summer, 1992 issue will begin with *Clinical Correlations in Microbiology and Immunology*, written by Dr. Virella, and *Clinical Correlations in Biochemistry and Molecular Biology*, author as yet undesignated. The series will continue in the Winter, 1993 issue with ... *Pharmacology* and...*Pathology*, and conclude in the Summer, 1993 issue with ...*Anatomy* and... *Physiology*. It is our intent that each article broadly address clinical correlations within the unique parameters of the discipline and describe the writer's own efforts. If your wish to be considered for authoring one of these articles, please contact Dr. Virella directly by phone: (803) 792-4421 or by FAX: (803) 792-2464.

Recent changes in the path to medical licensure in the United States have raised many questions for basic scientists regarding the new Step 1 Examination and its implications for our individual disciplines. In this issue, we are pleased to present a very special *Invited Article* by Drs. Swanson, Case, Melnick, and Volle from the National Board of Medical Examiners, which reviews these changes in light of their potential impact on our educational mission.

Also in this issue, are the complete abstracts and proceedings of the Fourth Annual Meeting of the National Basic Science Education Forum, which was held during the AAMC meetings in Washington, DC this past November. Our theme this winter was *Basic Sciences in the Clinical Years*, and was moderated by Richard M. Hyde, Ph.D., Southern Regional Director. This session was one activity directed toward the BSEF Project led by Dr. Hyde, *Integration of the Curriculum: Defining the Role of Basic Scientists in the Clinical Educational Setting and Clinicians in the Basic Science Educational Setting*. I would remind everyone that all four Regional Directors are seeking individuals to contribute ideas to our four *Current BSEF Projects* (see Page 5).

Yes, good things are happening. And through sharing our talents we will make the BSEF an even more effective and viable faculty organization dedicated to resolving issues and progressing the cause of quality medical education. Join us and become involved. Your voice can make a difference!

PROCEEDINGS of the FOURTH ANNUAL MEETING
of the
NATIONAL BASIC SCIENCE EDUCATION FORUM

A total of 57 participants attended this two-hour session in the Washington, DC Hilton Hotel on November 13, 1991. Roger Koment, Ph.D. opened the meeting with a welcome and overview of this year's theme *Basic Sciences in the Clinical Years*. This relates to the broader topic of *Curriculum Integration* which is one of four major topics determined at the Third Annual Meeting to be priority issues for BSEF consideration.

Following a report on current membership, recruitment progress, regional chapter activities, and a description of the newly created newsletter, Dr. Koment introduced Richard Hyde, Ph.D., Southern Regional Director of the BSEF. Dr. Hyde led the remainder of the meeting, introducing our six speakers and guided audience discussion following each presentation.

Abstracts of the six presentations are printed on the following page.

PROCEEDINGS of the FOURTH ANNUAL MEETING

A RETURN TO THE BASIC SCIENCES

John T. Hansen, Ph.D. (Acting Chair of Neurobiology and Anatomy) and Sharon K. Krackov, Ed.D. (Director, Curriculum Development Office), University of Rochester School of Medicine and Dentistry, Rochester, NY 14642.

A major curricular objective at the University of Rochester School of Medicine is to provide for our students a broad understanding of the sciences basic to the practice of clinical medicine. Implicit in this broad objective is a thorough integration of basic and clinical science, not just for students moving forward through the curriculum but also for advanced students who wish to return to the science basic to their clinical study. Consequently, a formalized approach that specifically "reintroduces" students and residents to the basic sciences is an evolving part of our curricular planning.

Currently, our fourth-year students and selected residents, depending upon the program, may return to the basic sciences by participating as small group facilitators in case-based clinical exercises. Additionally, students and residents may return as teaching assistants in our more laboratory intensive courses such as human anatomy or histology. Finally, fourth-year students may select basic elective courses that offer opportunities for in-depth study in a basic science discipline. These experiences have been very positive both for the advanced students and residents as well as for the first- and second-year students. Especially noteworthy is the way in which the more advanced students act as positive role models for the junior students. Moreover, these opportunities provide a chance for first- and second-year students to gain an appreciation for the importance of basic science material as it relates to clinical practice.

Further implementation of programs targeted toward a return to the basic sciences at Rochester will include the following initiatives: (a) Each clinical department will develop a written set of educational goals that deal with basic sciences and this material will be included in clerkship syllabi; (b) Clinical pathophysiological conferences will be jointly developed by basic and clinical science departments; (c) Basic scientists will be included in clinical rounds and clinical case-based teaching; and (d) We will continue to train fourth-year students as facilitators for small group case-based exercises and laboratory teach. (Portions of these efforts were supported by a Planning Grant from the Robert Wood Johnson Foundation)

A SURVEY OF BASIC SCIENCE COURSES WITHIN THE CLINICAL YEARS

Richard M. Hyde, Ph.D., Department of Microbiology & Immunology, University of Oklahoma College of Medicine, Oklahoma City, OK 73190.

A survey was conducted in the fall of 1991 to determine the extent to which basic, Science courses are currently being taught during the Clinical years of undergraduate medical education. A questionnaire was mailed to all medical schools in the U.S. Of the 30 responses, 24 had one or more such courses, while 4 schools had required courses that varied in length from two weeks to three months. The most frequently covered subjects were Anatomy (8 schools had courses), Pharmacology, Biostatistics/Epidemiology, and Pathology (3 schools each). A research experience in a Basic Science was reported in 6 institutions. The number of students participating in Basic Science electives varied from a handful to as much as 75-80% of the class.

Microbiology is offered in 2 of the responding schools. The number of students electing to participate is small (two to four per year). The courses offered included Directed Readings in advanced topics such as Microbial Genetics and laboratory based experiences, either in a specific research area or in clinical microbiology. In our institution (University of Oklahoma College of Medicine in Oklahoma City) we normally have two to four students each year who take a one month elective in "Problems in Diagnostic Microbiology" or in "Bacteremia".

PROPOSAL FOR A CLINICAL PHARMACOLOGY ELECTIVE FOR FOURTH YEAR MEDICAL STUDENTS

Charles D. Puglia, Ph.D., Department of Pharmacology, Medical College of Pennsylvania, Philadelphia, PA 19129.

The goal of the proposed elective course is to prepare students to utilize current information about pharmacokinetic and pharmacodynamic characteristics of drugs to safely and effectively institute therapy and manage patients receiving those drugs.

The elective in clinical pharmacology will be conducted over a 2 week period. During that time, students will use case descriptions in a small group, problem-based learning format to enable students to identify areas where more information and understanding is needed. Students will then develop strategies and identify resources necessary to answer key questions concerning drug action and kinetics. They will evaluate a variety of drug information available from a wide variety of sources (manufacturers, texts, and reviews, as well as original articles) during unstructured time blocks following small group meetings. Students will integrate information regarding drug action and kinetic properties into clinical decision making.

Resource faculty will be available to answer questions during a scheduled consult time.

Each focus area will end with a faculty-guided patient rounds which will demonstrate examples of key issues related to each covered area. The focus will be on drug classes which have been identified as having broadest relevance to students entering a variety of residency programs.

PROCEEDINGS of the FOURTH ANNUAL MEETING

NEW BASIC SCIENCE TEACHING OPPORTUNITIES

William R. Galey, Ph.D., Department of Physiology, University of New Mexico School of Medicine, Albuquerque, NM 87131.

Several strong trends in medical education have elicited concern from Basic Scientists that the sciences on which medical practice is based will not be adequately learned by medical students. The trends which elicit these concerns include: 1) increased emphasis on clinical problem based learning, 2) decreased number of basic science lectures, 3) increased emphasis on non-classroom learning, and 4) integrating of basic science learning into the clinical environment.

The challenge presented by new curricular designs is to insure that students are exposed to the clinically useful aspects of the basic sciences. Some opportunities for insuring basic science learning are as follows:

In Problem Based Learning Tutorials—make sure Basic Science faculty are: 1) involved in the development of the problem, and 2) are active as tutors.

In Clinical Skills courses—integrate the learning of relevant basic sciences, (I.e., anatomy, physiology, pathology) into the learning of particular maneuvers or skills.

In Ambulatory Clinics—develop post-clinic tutorials where clinic patients seen by students are used to learn basic sciences, as well as clinical medicine.

In Ward-Round teaching—have Basic Scientists present to bring up basic science learning issues relevant to patient management issues.

In Rural or Non-Medical School learning environments—work to insure basic science learning is one of the educational goals and make sure Basic Scientists are involved in monitoring student activities in such settings.

In-depth experiences for students to participate in basic science research can be devised for traditional vacation and holiday periods to further stimulate basic science learning.

In Graduate Training (residency programs) - advanced courses in basic sciences may be very important and appreciated by house officers and programs.

THE DEMISE OF A POPULAR PHARMACOLOGY ELECTIVE

Joanne I. Moore, Ph.D., Department of Pharmacology, University of Oklahoma College of Medicine, Oklahoma City, OK 73190

Prior to 1985, basic science departments at the University of Oklahoma College of Medicine offered only research electives for medical students. In 1985 the Department of Pharmacology introduced a three week elective **Directed Readings in Pharmacology** which could be paired with a three week clinical elective to complete a rotation period. The Pharmacology elective was relatively non-structured, non-stressful and was tailored to meet each student's interests. Initial references were provided by the faculty to get students started with their literature review. Although Individual faculty differed in their conduct of the elective, most met with students to discuss the readings, prepared take-home essay questions specifically to direct readings into special or controversial issues, and asked for new references to update the readings lists. Students interviewing for residencies often selected this elective as they could keep up with their readings while traveling. The curriculum again was modified in 1990 by changing rotations from six weeks to one month and reducing the total curricular time in the fourth year. The most drastic reduction occurred in elective time which was cut from 1440 to 522 hours. The Pharmacology elective was cut from three to two weeks to accommodate the new rotation schedule. Although more than 75% of fourth year students previously enrolled in the pharmacology elective, after the curriculum was changed rarely elected our course and usually only after a Dean requested special arrangements for a student. Although several factors probably contribute, the most likely cause for the demise of our popular Pharmacology elective is that there are no other two week clinical or basic sciences courses which students can select to fill out a monthly rotation.

BEDSIDE BIOCHEMISTRY

Murray Saffran, Ph.D., Department of Biochemistry & Molecular Biology, and Roberto Franco-Saenz, M.D., Department of Medicine, Medical College of Ohio, Toledo, OH 43699.

In most programs of the return to the basic sciences in the clinical years, the students come to the basic science departments for lectures and seminars. Our program differs in that a basic scientist goes to the hospital and participates in clinical teaching rounds in the medical clerkships. Generally a session begins with the presentation of a case by one of the students. The basic scientist participates in the discussion and draws attention to the basic science aspects of the case, usually by questions-and answers. This functions as a recall of the pertinent basic science material as well as an opportunity to add new information that was not taught or not available when the students studies the basic sciences. We have found that most clinical problems illustrate biochemical principles that are relearned in a practical setting with more understanding and much less resistance than in a formal lecture setting. Some examples include sickle cell disease and hemoglobin structure, diabetes mellitus and intermediary metabolism, cardiac infarct and muscle structure, as well as clotting reactions and lipids, etc. The sessions are given once in every medical rotation. Faculty requirements for each group of 6-10 students in this program are a physician and a basic scientist who is comfortable in the clinical setting and who is not afraid to say "I don't know. Let's look it up together."

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2. Integrating Basic Science and Clinical Teaching for Thrid-Year Medical Students. L.G. Croen, P.D. Lief, and W.H. Frishman. *Journal of Medical Education*. **61**:444-453, June 1986.
3. Clinical Anatomy for Surgical Residents: A 10-Week Course. J.R. Osuch, K.B. Dean, R.E. Carrow, and R.E. Dean. *Clinical Anatomy*, **1**:205-211, 1988.
4. One Day Review of Surgical Anatomy for Third-Year Medical Students: Improved Knowledge Acquisition and Retention. F.M. Ilgenfritz, J.R. Osuch, R.E. Carrow, J.B. Babel, V. Bonet, and J.C. Gruenberg. *Current Surgery*, **47**(6): 407-410, 1990.
5. Integrative Virology for Senior Medical Students. R.W. Koment. *Academic Medicine* **66**:139-140, 1991.

CURRENT BSEF PROJECTS

At the Third Annual Meeting of the Basic Science Education Forum held on October 23, 1990 in San Francisco, four issues were defined that we are addressing in various ways. Each of our regional Directors has volunteered to coordinate efforts for one topic. If you have interests and opinions and/or wish to work with others toward the resolution of one or more of the following, please contact the designated individual. Our long-term goal is to create workable solutions to these problems.

TOPIC 1

Integration of the Curriculum: Defining the Role of Basic Scientists in the Clinical Educational Setting and Clinicians in the Basic Science Educational Setting.

Contact: Richard Hyde, Ph.D.

TOPIC 2

Information Overload: Defining Essential Curricular Objectives.

Contact: Alix Robinson, Ph.D.

TOPIC 3

Problem Based Learning: Defining the Role of Basic Scientists in Optimizing Basic Science Content within a PBL Program.

Contact: Bill Galey, Ph.D.

TOPIC 4

Defining Evaluation Standards: Criteria and Consistency.

Contact: Roger Koment Ph.D.

BSEF MEMBERSHIP

Northeast	86
Central	183
Southern	80
Western	52

ANNOUNCEMENTS

FOURTH EDUCATIONAL STRATEGIES WORKSHOP—1992

The Association of Medical Microbiology and Immunology Chairs announces the Fourth Educational Strategies Workshop to be held at the Ocean Creek Resort and Conference Center in Myrtle Beach, SC, April 25-29, 1992. For further information contact your Microbiology Chair, or Hugh Pross, M.D., Ph.D., Program Chair, Department of Microbiology and Immunology, Queen's University, Kingston, Ontario, Canada K7L 3N6, (613) 545-2451, FAX (613) 545-6796, or Robert Fulghum, Ph.D., Co-Chair, Dept. of Microbiology and Immunology, School of Medicine, East Carolina University, Greenville, NC 27858-4354, (919) 551-2703, FAX (919) 551-3104.

FELLOWSHIP in MEDICAL EDUCATION RESEARCH

The Central Region GEA is sponsoring a one-year Fellowship in Medical Education Research (F-MER) for faculty. Fellows will attend two 2-day workshops (concurrent with AAMC in the fall and the central regional meeting in the spring), complete an educational research project in collaboration with a faculty advisor/mentor, participate in a proposed electronic journal club, and serve as adjunct reviewers for the Central Region Research in Medical Education (CRIME) abstracts. For further information contact the Fellowship Program Committee by calling Deborah Simpson, Ph.D., Chair, or Matthew Zagumny, M.A. at the Medical College of Wisconsin (414) 257-8207. *Currently open only to Central Region members.*

1992 SPRING REGIONAL GEA MEETINGS

NORTHEAST

Baltimore, MD March 30 - April 1, 1992
*Integrating Basic Science and Clinical
Education: Breaking Down the Barriers*

For details on BSEF activity phone:
Alix Robinson, Ph.D.
(315) 464-5870

SOUTHERN

Macon, GA March 26-28, 1992
*The Medically Underserved: What can
Medical Education do to help?*

For details on BSEF activity phone:
Richard Hyde, Ph.D.
(405) 271-2133

CENTRAL

Lincolnshire, IL April 9-11, 1992
*Medical Educators: Reaching for the
Future*

For details on BSEF activity phone:
Roger Koment, Ph.D.
(605) 677-5174

WESTERN

Asilomar, CA April 26-29, 1992
Preparing Leadership for Change

For details on BSEF activity phone:
William Galey, Ph.D.
(505) 277-0620

BASIC SCIENCE EDUCATION FORUM

NATIONAL DIRECTOR

Dakota, Vermillion Roger Koment, Ph.D. Univ of South
(605) 677-5174

NORTHEAST REGIONAL DIRECTOR

Center, Syracuse Alix Robinson, Ph.D. SUNY Health Science
(315) 464-5870

SOUTHERN REGIONAL DIRECTOR

Oklahoma City Richard Hyde, Ph.D. Univ of Oklahoma,
(405) 271-2133

CENTRAL REGIONAL DIRECTOR

Dakota, Vermillion Roger Koment, Ph.D. Univ of South
(605) 677-5174

WESTERN REGIONAL DIRECTOR

Mexico, Albuquerque William Galey, Ph.D. Univ of New
(505) 277-0620

CHAIR, ELECTRONIC NETWORKING COMMITTEE

St. Louis James Swierkosz, Ph.D. St. Louis Univer-
(314) 577-8448 -8432

CHAIR, INSTRUCTOR SUPPORT COMMITTEE

Ontario, London Marilyn Robinson, Ph.D. University of Western
(519) 661-3478 -2111

EDITOR, THE FORUM BSEF NEWSLETTER

University, Columbus John Curry, Ph.D. Ohio State
(614) 292-9687

ASSOCIATE EDITOR,

An Organization of Basic Science Faculty

Our Purposes:

- ? To come together, both electronically and at our annual meeting, to discuss issues in medical education of common concern to all basic science faculty.
- ? To formulate where possible consensus opinion on issues in medical education which have direct impact on basic sciences.
- ? To begin resolving those issues with others through the vehicle of AAMC and GEA at the national and regional levels

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PLEASE RETURN TO:

Roger W. Koment, Ph.D.
National Director, BSEF
Department of Microbiology
University of South Dakota
School of Medicine
Vermillion, SD 57069
Phone: (605) 677-5174
FAX: (605) 677-5124