

BEACON Newsletter

Biomedical Engineering Alliance for Connecticut

January 1, 2000

A Report to Industry

NIH Plans Increases for Biomedical Engineering

As a first step in increasing support for BME, NIH funding will be flowing at an increased rate in 2000 for existing programs. The National Institute of General Medical Sciences (NIGMS), for example, is inviting researchers with current grants to apply for supplemental funding to expand their research by building collaborations with "physicists, engineers, mathematicians, and other experts with quantitative skills" to help them analyze complex biological systems. The National Center for Research Resources (NCRR) which received the highest percentage increase of any NIH institute or center in the Administration's proposed 1999 budget, plans to spend at least \$35 million in 2000 on shared instrumentation grants to groups of NIH-supported researchers who get together to buy high-end research devices (compared with \$28 million in 1999). It also plans to increase its nearly \$1.5 million in new technology-development pilot projects or proof-of-principle grants. It is believed that NIH's growing enthusiasm for bioengineering will continue.

BEACON Establishes a Five Year Plan

As the new century approaches, it is envisioned that innovations in medical technology and biomedical science are going to have a significant, positive effect on the economy in Connecticut; and BEACON will be one of the major driving forces behind these discoveries in Connecticut universities and companies. With this vision in mind, BEACON has established a 5 YEAR PLAN for the period 2000 – 2005, which includes:

- [1] Establishment of a BEACON Education Site in Hartford.
- [2] A Whitaker Development Award for The University of Connecticut to facilitate the addition of new BME faculty and graduate students.
- [3] Creation of a BEACON Outreach Program.
- [4] Development of BEACON Research and Incubator Space.

Beacon has been in existence since January 1997, established using a 3-year, \$1 million award from the Whitaker Foundation. During the past 3 years, significant progress has been made in

Integrating all of the BME course offered by participating institutions, adding new BME faculty members and by establishing liaisons with industry (industrial internships, collaborative research grants, etc.), as well as, obtaining institutional commitments to keep the program solvent after January 1, 2000.

A logical next step for BEACON is to establish a physical presence on the campus of Hartford Hospital, at the medical end of the "Learning Corridor" between Trinity College and Hartford Hospital – one of the three medical center nodes being established in the city of Hartford. The purpose of such a facility would be to enable BEACON to better serve in its role of facilitator/stimulator of collaborative research efforts between academics, clinicians and industrial colleagues. In this role, BEACON would be a resource for industries seeking academic or clinical expertise to assist on specific projects, for clinicians looking for companies that may be interested in their creative ideas, and for researchers from both academia and industry interested in collaborating on projects of mutual interest.

One possible location for such a facility is the White Hall Building on the Institute of Living campus. In 1998, as part of an effort to secure funding from the NSF to establish a Science and Technology Center (STC), it was proposed that the building be renovated so that it contained a state of the art auditorium, conference room classrooms, and office space for several BEACON personnel including the Director, Program Coordinator and an Industrial Liaison officer. Although funding for the STC was not forthcoming, the idea remains valid.

At this time, BEACON is pursuing support from The Whitaker Foundation to renovate the White Hall Building and integrate into that application an outreach program to the educational institutions under construction in the Learning Corridor. The new director of the Learning Corridor, Dr. Jeffrey Osborn, has been actively involved and enthusiastic about these plans.

Whitaker Pays BEACON a Visit

In order to provide The Whitaker Foundation an opportunity to review these BEACON initiatives, Dr. John Linehan, Vice

President of The Whitaker Foundation, paid BEACON an informal site visit on December 1, 1999. J. Bronzino picked him up at the airport that morning and took him on a quick tour of Hartford, including The Learning Corridor and site of

the future BEACON educational facility. After this brief tour, he then took J. Linehan to The Smith House to meet the BEACON Site Steering Committee. Also in attendance for this luncheon meeting was Senator John Fonfara, Mayor Michael Peters, Hartford School Superintendent Anthony Amato, Hartford Public Schools Lead Principal, Joan Harte, and one of our corporate sponsors, James Walls, Vice President of R&D, from Kendall Healthcare. After the meeting, on the way back to the airport, John Linehan

* BEACON, The Biomedical Engineering Alliance for Connecticut, Collaborative Team: Trinity College, The University of Connecticut at Storrs, The University of Connecticut Health Center, The University of Hartford, Hartford Hospital, The Connecticut Children's Medical Center, John Dempsey Hospital, The Yale-New Haven Hospital, Baystate Health System

community support for BEACON, The Learning Corridor, and the proposed BEACON Outreach Program, and mentioned that BEACON should consider applying for a Leadership/Development Award. Plans are underway to continue this dialogue with The Whitaker Foundation and submit a preliminary proposal for either a Special Opportunity or Leadership/Development Award by March 1, 2000.

Dr. Robert A. Levine, Clinical Professor of Laboratory Medicine, Yale University School of Medicine, Consultant to Becton Dickinson & Co.

Topic: "Optimizing Strategic Partnering Using Biology As A Metaphor"

Dr. Sohi Rastegar, Program Director, Biomedical Engineering National Science Foundation, Topic: "NSF Bioengineering and Environmental Systems (BES) Division Funding, Research, and Grant Opportunities"

BEACON COURSE OFFERINGS – SPRING 2000

BEACON Drug Delivery Symposium

On September 14, 1999, BEACON presented the second annual BEACON Symposium "Drug Discovery, Design and Delivery".

It was held at the Aqua Turf Club in Plantsville, Connecticut.

This symposium was held in conjunction with Connecticut Innovations Inc. (CII), as part of their major industrial exhibit and awards event which immediately followed the symposium. The approximately 140 individuals (including 30-40 students) were treated to in depth presentations that provided insights regarding the "state of the art" in this important field of activity.

To provide some appreciation of the scope of the Symposium, a brief outline of the final program is provided below.

Welcome, Dr. Joseph D. Bronzino, Director of BEACON

Introductory Remarks, Dr. Mary Ann Epstein, Program Chair

Keynote Speaker, Dr. Alexandros Makriyannis, Director of Center for Drug Discovery, University of Connecticut
Topic: "New Therapeutic Agents: The Road to Discovery"

Session One: Drug Discovery and Design

Dr. Charles Manly, VP Discovery Technologies, Neurogen Corporation

Topic: "Combinatorial Chemistry, Data-Mining, Targeted Synthesis And Screening: New Paradigms In Drug Discovery"

Dr. Douglas Lauffenburger, Division of Bioengineering and Environmental Health - MIT. Topic: "Cell Engineering Analysis As A Guide To Drug Design"

Dr. Mariano Garcia-Blanco, Duke University, Topic: "Post-Genomic Complexity: Alternative Splicing And Prostate Cancer Progression"

Dr. Paul Sweetnam Senior Director of the Department of Research Technologies, Bayer Corporation, Topic: "The Role Of High Through-Put Technology In Drug Discovery"

Session Two: Drug Delivery

Dr. Michael Cima, Department of Material Science and Engineering - MIT

Topic: "Microchips In Drug Delivery"

Dr. Cynthia Sung, Human Genome Sciences, Rockville, Maryland
Topic: "Tissue Penetration Of Protein Drugs"

Dr. Steven Goodman, Center for Biomaterials, University of Connecticut Health Center, Topic: "Optical Fabrication Of Nanoscale Drug Delivery Devices"

Dr. Krzysztof Bankiewicz, Molecular Therapeutics Division, National Institutes of Health, Topic: "Potential Intracranial Delivery Systems"

Session Three: From Bench To Market: Effective Partnering

Mr. Mark Farber, Esq. Patent Attorney, Topic: "Intellectual Property And Strategic Partnering".

Proceedings for this symposium were published and are available upon request.

Educational offerings through BEACON continue to expand, thereby, increasing the availability of BME curriculum to working professionals. See below:

Spring 2000

Biofluid Mechanics (undergraduate)

M, W & F 9:30-10:20AM University of Hartford

Introduction to Biomedical Engineering (undergraduate)

T, Th 2:00-3:15PM

W Lab 12:00-1:30 Uconn, Storrs

Physiological Systems II

M 6:00-9:00PM Trinity College

Biosensors

T 6:00-9:00PM Trinity College

Physiological Modeling

W 6:00-9:00PM Trinity College

Advanced Ultrasonic Imaging

Th 6:00-9:00PM Trinity College

Analysis of Electrical Signals From the Brain

T 6:00-9:00 Trinity College

Clinical Instrumentation Systems

Th 6:00-9:00PM Trinity College

Biodynamics

Th 6:00-9:00PM UCHC

Finite Element Analysis

Th 7:00-9:45 UHartford

Industrial Internship Opportunities

The Whitaker Foundation has provided support to increase the number of BME graduate student from UConn engaged in industrial internship activities. If a company elects to support one graduate intern, Whitaker will provide monies for ½ of the second intern within that company. Companies interested in pursuing these opportunities should contact Dr. John Enderle (860) 486-5521 or Jenderle@bme.uconn.edu ASAP.

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