

Vol. 11 No. 2 • April 2010

Connection

Newsletter of Bio-Link • The National Advanced Technological Education Center for Biotechnology

ATE/PI Conference: Technicians in the Green Economy

Edgar Troutd (left) and Christoph Winkler of the Institute of Virtual Enterprise at Kingsborough Community College, John Carrese of City College of San Francisco and Luanne Wolfram (right) of Johnson County Community College visited the Bio-Link National Center of Excellence Exhibit during the Showcase Session in October 2009 at the annual ATE/PI Conference held in Washington, DC.



Bio-Link's 12th Annual Summer Fellows Forum

Connecting Bio-Link to Vision and Change

Individuals interested in attending the Forum and can provide their own funding for the Conference Registration Fee (\$650.00 Single Occupancy or \$370.00 Commuter) and all travel costs, should register online (www.bio-link.org) or email and/or call Lisa Huffman at the National Center at lhuffman@biolink.ucsf.edu/415-487-2471 for further information.

Fellows will learn new skills and techniques, examine and test exemplary curriculum models and course material, engage in dialogue about ethical, legal, and social issues in biotechnology and learn how to disseminate this information within their own regions. The weeklong activities include: concurrent workshops, an industry tour, dinner banquet with a keynote speaker, and some free time for sightseeing. Fellows are expected to implement new strategies into their own programs, to lead regional staff development activities, and provide prompt response to follow-up surveys.

Launch Of The Biotechnology Virtual Enterprise

Seventeen faculty members from five Community Colleges gathered in February for a Faculty Development Seminar at CUNY's Kingsborough Community College about the STEM Virtual Enterprise (VE) program. The keynote presentation was from one of the many simulated entrepreneurial STEM-based ventures created by students. GenBioTech VE's students led a discussion of their business model, taking participants through the biology behind their injectable's effects in combating the Niemann-Pick disorder, the funding efforts for the research, and the pricing and marketing efforts for the drug's rollout. All of this work happened over the course of a semester, during the first ever Capstone BioTechnology VE, taught by Kingsborough's Farshad Tamari. Sandra Porter, one of Bio-Link's co-PI and another featured speaker, reiterated the

need for the skills that VE brings to future biotechnicians.

The STEM Virtual Enterprise Program is funded by a grant from NSF/ATE (DUE-0802365). The simulation arms students with the soft- and entrepreneurial-skills demanded in today's workforce – for instance, teamwork, effective communication, and the ability to be flexible – while making concrete use of the content from their STEM major. Evaluation of the work has shown it not only to improve these crucial skills, but to increase recruitment and retention by helping students understand their place within the larger industry. The simulation is flexible; it ranges from being as small as a two-week embedded exercise within an existing course, or as large as a full-semester capstone experience. Kingsborough's project team is looking for additional campuses on which the program can be piloted in BioTechnology or Information Technology.

For more information or to attend the next Faculty Development Seminar, contact the co-PI, Edgar Troutd, edgar.troutd@kbcc.cuny.edu.

Edgar Troutd, CUNY Institute for Virtual Enterprise



June 1 - 5, 2010 • Berkeley, CA

Registration Deadline Extended:

May 10, 2010

CITY COLLEGE OF SAN FRANCISCO

www.bio-link.org



It is hard to believe that Bio-Link will be holding its 12th Annual Summer Fellows Forum from June 1-5, 2010. We have much to celebrate with the growth of biotechnology programs across the nation and with the overall success of the Advanced Technological Education (ATE) Program at the National Science Foundation. We enthusiastically congratulate Dr. Celeste Carter, former Program Director for biotechnology and bioinformatics at Foothill College, on

her appointment as the Lead ATE Program Officer at NSF. Having a strong scientist with community college experience will be critically important as we move forward with ATE activities.

As Bio-Link expands to provide a much wider range of services and products now necessitated by the swiftly changing biotech industry, the Center is also working on the Synergy Project for scalability and connecting with other efforts to improve undergraduate education, particularly at the community and technical colleges. For this reason, the Summer Fellows Forum

theme this year is Connecting Bio-Link to Vision and Change. The publication, "Vision and Change: A Call to Action" was released by the American Association for the Advancement of Science Annual Meeting in February 2010. This Call to Action, with support from the National Science Foundation, provides a summary of recommendations made at a national conference in July 2009. I know that many of you have been a part of the process for improving undergraduate biology education. Certainly Bio-Link has influenced science education in general through materials and techniques developed within its network.

At this year's Summer Fellows Forum we hope to examine the Vision and Change recommendations and, together, explore how the work that we are doing complements both the Vision and Change direction and the National Academies report on the "A New Biology for the 21st Century" which predicts a convergence of individual disciplines. Bio-Link expects to be a part of this process and we have an excellent opportunity to take on a leadership role in this endeavor.

Tribute to Wes Bonds

Bio-Link and the entire biotechnology educational community mourns the loss of a dear colleague, Dr. Wesley Bonds, Jr. A recently retired biotechnology instructor at Western Carolina University, Wes gained nationwide accolades as a creative developer of instructional lessons in genomics, proteomics, DNA sequencing and genetic analysis. Last year he had taught several workshops entitled "Teaching Genetics and Gene Expression Using Microarrays" for Teachers at the North Carolina Biotechnology Center, Alamance Community College and at Bio-Link's 2009 Summer Fellows Forum.

Funded by an NSF grant, Wes developed a very inexpensive microarray system and accompanying lesson plans for classroom use, and was working with teachers in North Carolina and nationwide to develop custom lessons, specific to topics of local interest. Early arrays were far too expensive to use in secondary schools or even in undergraduate education. But Wes helped spur technological advances

that cut these costs dramatically, allowing students to visualize expression of dozens of genes in one brief experiment.

Wes loved people, travel, genes and genealogy. Wherever Wes was, he befriended people with his energy, stories and laughter. He will be deeply missed by all who knew and worked with him.

As Bill Woodruff of Alamance Community College states, "Wes was one-of-a kind, touching hundreds of educators and thousands of students at all levels, in North Carolina and beyond. He truly had a rare passion for genomics, and would think nothing of driving 300 miles to help a teacher run a DNA sequencing gel or microarray experiment. He was one of those unique and inspiring characters we rarely encounter in our lives, but whom we can never forget."



South Central Bio-Link Meeting 2010

June 11 to June 13
Delmar College
Corpus Christie, TX

Registration information
can be found at

http://www.austincc.edu/biotech/southcentral_meeting.php



News from the South Central Region

Tulsa Community College (TCC) has reached some academic milestones and continues to exhibit growth in the outreach to secondary schools. During the spring of 2009, the biotechnology instructors were able to present, for the first time, the last three courses necessary to complete the Associate Degree in Biotechnology: Molecular Biology and Techniques, Biotechnology Proteomics and Instrumentation, and Biotechnology Quality Assurance. This feat marks a huge milestone for the faculty and students. We had our first biotechnology graduate in the spring of 2009! We plan to have seven more graduates by December 2010.



The NSF ATE Stimulating Enthusiasm, Exploration, and Discovery through Biotechnology Education (SEEDBED) grant activities have continued at TCC this year with an extension through Fall 2010. During the Fall and Spring of 2008-2009 school year, the high school outreach team of the project's PI, Project Assistants, and high school science teachers were able to launch the complex wet-lab biotechnology activities into numerous regional classrooms. In February 2009, the project hosted the Biotechnology Learning Extravaganza for High School Students.

Eighty-three high school students and 10 teachers were in attendance from regional schools, as well as 23 students from Tulsa Community College and 15 TCC biotechnology student volunteers. TCC hosted 98 high school students and their 10 teachers to another Biotechnology Learning Extravaganza in March 2010.

Janice Joslin, M.S., Senior Criminalist and J.D. Linkstrom, CODIS State Administrator for the OSBI discussed their careers and educational backgrounds. Dr. Valerie Fuller, discussed her work training officers in Iraq for DNA identification and her work in St. Lucia setting up a DNA testing lab.

In September 2009, TCC received an NIH INBRE supplementary grant through the American Recovery and Reinvestment Act of 2009 for \$.5M to extend our biomedical outreach to more schools. Four workshops have been presented to high school teachers from 23 schools. In addition to the activities of these projects, TCC hosted two workshops for regional college and secondary educators through the Dolan Learning Center at Cold Spring Harbor Laboratory: *Inside Cancer and From Genes to Cognition Online* in June 2009.

South of the Oklahoma border, Austin Community College has completed the first phase of its high school teacher biotechnology education project. In Spring 2009, Angela Wheeler and Jennifer Lazare in the ACC Biotechnology Department developed three online biotechnology courses in collaboration with Collene Sweeney, the Graphic Artist, and Madhavi Soppadandi, the Course Moderator. Then in Summer 2009, three hands-on workshops were developed and delivered by Angela and Jennifer, with help from Marjorie Palmer from Cedar Park High School, in three locations across the state of Texas.

East of the Texas border, Elaine Cox of Bossier Parish Community College graciously hosted the South Central Regional Meeting on May 28, 2009. She had a great turnout for this event, with 47 educators from the high school, community college, baccalaureate, and masters' institution levels, coming from five states. The workshop had very interesting curriculum from pGLO Transformation to Genes Cognition to Plant Cell Culture to Principles of Nano & Micromanufacturing.

Patricia Phelps, Austin Community College
Diana Spencer, Tulsa Community College



JOIN US AT HI-TEC 2010

HI-TEC is a national conference on advanced technical education where technical educators, counselors, industry professionals, and technicians can update their knowledge and skills. HI-TEC uniquely explores the convergence of scientific disciplines and technologies.

For Conference Registration and more information please visit: www.highimpact-tec.org



Professional Development at San Mateo Biotechnology Training Center

2010 DNA is the Flash but Proteins Are the Cash of Biotech Workshop (Amylase)

June 28 – 29, 2010

San Mateo Biotechnology Training Center, San Mateo, CA

Ellyn Daugherty, Biotechnology Educator/Author
Ellyn@BiotechEd.com • www.BiotechEd.com

Featuring new labs and strategies from Biotechnology:
Science for the New Millennium

Ellyn Daugherty, EMC Paradigm Publishing

Sponsored by SMBTC and VWR Education/Sargent Welch

Tentative Agenda

Monday, June 28

- Amylase Gene PCR
- Horizontal Gel Electrophoresis
- Amylase (PAGE) Vertical Gel Electrophoresis
- Introduction to Amylase Western Blot

Tuesday, June 29

- pAmylase Restriction Digestion
- Amylase ELISA
- Analysis of Results
- Biotechnology Courses,
Changing Science Education

Followed by

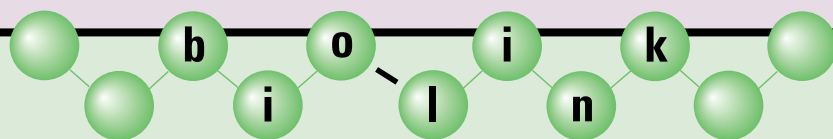
The National Biotechnology Education Conference 2010

June 30 – July 2, 2010

Santa Clara University, Santa Clara, CA

3 days of professional development, industry connections, networking, and skill development

<http://www.babec.org/node/102>



National Center

Dr. Elaine Johnson, Director • Dr. Bart Gledhill, Deputy Director • Lisa Huffman-Martinez, Project Manager

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Bio-Link is committed to program improvement, instructor enhancement, communication, program assistance, and supporting school-to-career activities in the biotechnology area.

For information on

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