

Bio-Link

Connection

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

Twelfth Annual Summer Fellows Forum

Bio-Link's annual Summer Fellows Forum 2010 was once again hosted by the National Center located at City College of San Francisco (CCSF) from June 1 through June 5 at the Clark Kerr Campus conference site in Berkeley, California. Sixty-nine Fellows (our largest group to date yet!) comprised of community college instructors and high school teachers from across the nation participated in the weeklong forum. The forum entitled "Connecting Bio-Link to Vision and Change" consisted of a variety of concurrent workshops, informal meetings, an eventful industry tour at Bio-Rad, and at the conclusion of the forum the elegant annual dinner banquet.



Bio-Link Fellows pose for a group photo after a very interesting afternoon tour at Bio-Rad in Hercules, CA.

As in the past, this year's forum afforded each fellow the opportunity to profile their program at their school or college, to network and to share ideas and discuss issues that will continue to build the link between education and industry. The fellows participated in workshops given by both bay area and national guest lecturers, who donated their time and supplies. Thank you to all the presenters, everyone appreciated your efforts! Once again this year, a complete list of the forum presenters and workshops, along with many of the workshop PowerPoint presentations are available for review on the Bio-Link website.

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Forty others from CCSF and bay area industry also attended Bio-Link's 12th Annual Dinner Banquet on June 4. CCSF's **Dr. Alice Murillo**, Vice Chancellor of Academic Affairs greeted and welcomed the fellows and guests. Bio-Link Director, **Dr. Elaine Johnson** introduced keynote speaker, **George Cachianes**, Science Faculty Member from Abraham Lincoln High School in San Francisco, whose talk was entitled "A View From the Trenches - One High School Teacher's Perspective on Science Education". George was a Fellow at our very first Forum in 1999, therefore it was incredibly special to have him return to as our speaker.

If you are interested in attending the 2011 Forum, save the dates of June 6-10 on your calendar and watch for upcoming announcements and registration information on the Bio-Link website or in the *Connections* Spring 2011 Issue.

- Lisa Huffman-Martinez
National Center



Drs. Elaine Johnson and Bart Gledhill (right/center), Bio-Link Director and Deputy Director present a plaque of appreciation to keynote speaker, George Cachianes (left), at Bio-Link's 12th annual Summer Fellows Forum dinner banquet.

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www.bio-link.org

A Year of Change and New Visions Ahead



The Bio-Link Next Generation National ATE Center for Biotechnology and Life Sciences is in full swing for the second year. How time flies! We celebrated the activities of 2010 starting with the highly successful Seventh Annual Community College Program Day on May 2 in conjunction with the BIO International Convention in Chicago.

This was followed by the 12th Annual Summer Fellows Forum the first week in June where we examined Bio-Link connecting with the publication, "Vision and Change: A Call to Action" which was released by the American Association for the Advancement of Science (AAAS) Annual Meeting in February 2010. I am very happy to report that this year there will be a one-day Community College Forum at the AAAS Annual Meeting in February 2011 in Washington, DC.

Bio-Link is making progress in the Synergy Project for scalability using the Bridge to Biotech as a model for scalability through the Bio-Link Clearinghouse. The 13 ATE Centers that are involved in the Synergy Project had a very productive working conference in San Francisco in June. Immediately following was the National Biotechnology Educators Conference organized by the Bay Area Biotechnology Education Consortium (BABEC). Bio-Link was one of the Executive Producers at the Second Annual HI-TEC Conference in Orlando, FL in late July and will be again in July 2011 when HI-TEC comes to San Francisco.

I would like to thank Farah Movahedzadeh of Harold Washington College in Chicago for nominating me for the John L. Blackburn Exemplary Models Award from the American Association of University Administrators (AAUA) for work with Bio-Link. I met Farah at the Community College Day and she was one of this year's Bio-Link Summer Fellows. I will receive the award and deliver a presentation about Bio-Link at the AAUA annual conference on November 5 in Washington, DC.



The Synergy Collaboratory (a collaborative laboratory) for Research, Practice and Transformation provides transformative, problem-based, and research-rich "collaboration opportunities for productive dialogue and investigation of effective methods of achieving scale. The National Science Foundation has funded this project that focuses on equipping 13 ATE Centers to better realize the potential of scale and impact of their work. Bio-Link is one of the 13 ATE Centers participating in this scaling project and is using the successful City College of San Francisco's Bridge to Biotech (B2B) as the project to be scaled-up and disseminated to other interested colleges.

The B2B program is a vocational program serving underprepared students who wish to engage in education in the Biotechnology field and pursue a career in life sciences research either in Biotechnology companies, or academic or government research labs. The B2B primarily serves an economically disadvantaged and diverse

population of students, most of them adults without any scientific background but with prior work experience, and who wish to transition to the biotech field. In addition, the B2B program has an optional entry-level internship and job preparation component which leads to a Biotech Laboratory Assistant Certificate. The B2B program has a track record of high retention and completion rates, and the program has already been adapted at other colleges, including Austin Community College and Salt Lake City Community College.

Biotechnology Faculty at City College of San Francisco, who has been coordinating the B2B's internship program, will be representing the Bio-Link team in the Synergy project. They will work with the B2B director, Edie Kaeuper, using the Synergy tools to create a realistic scale-up plan for the B2B over the next few months. The team expects to begin working with its first cohort of colleges in 2011.

For any questions about the Synergy project or the B2B program, please email Laurence Clement at lclement@ccsf.edu

*– Laurence Clement, Ph.D.
City College of San Francisco*

Seventh Annual Community College Program Day

On May 2, 2010, three organizations – Bio-Link, Northeast Biomanufacturing Center and Collaborative (NBC²) and National Center for the Biotechnology Workforce (NCBW) – joined forces to offer the Seventh Annual Community College Program (CCP) Day in conjunction with the Biotechnology Industry Organization (BIO) 2010 International Convention in Chicago, Illinois. The full day program featured four sessions to showcase community college biotech workforce efforts. The session topics included: “Emerging Biotech Programs”, “External “Accreditation/ Certification” for Biotechnology – A Goal or a Digression?”, “Faces of Success”, and “Regional Bioscience / Biomanufacturing Collaboratives”. The CCP was once again well attended with over 60 professionals who participated. All four sessions featured expert panelists leading in biotechnology workforce development represented by both industry and academia from throughout the U.S.



The “Faces of Success” Panel (photo above) was moderated by Jo-Anne Hongo, Scientific Manager at Genentech, Inc. and Elaine Johnson, Director of Bio-Link with remarks from Gail Maderis, President and CEO of BayBio, with panelists: Joseph Guillory, Research Associate, Genentech, Inc.; Camilo Rojas, Lab Assistant II, Scripps Florida Research Institute; Kasey Schuster, Biotechnology Resource Coordinator for the State of Utah; Mica Welsh, Research Associate, NCBW; and Marilyn Johnson, Coordinator of Instructional Technology, Pasadena City College.

Bio-Link Exhibits at BIO 2010

Bio-Link took place in exhibiting with more than 1,700 companies, and 180,000 sq. feet of exhibition space, at the famous McCormick Place Convention Center for the BIO 2010 International Biotechnology Convention & Exhibition in Chicago, Illinois, from May 3 thru 6. BIO is a spectacular event in itself, with astounding attendances – 15,322 attendees from 65 countries and 49 states, 125 breakout sessions across 17 tracks, a record number 17,100 partnering meetings and two keynote luncheons with guest speakers that included former Presidents Bill Clinton and George W. Bush and former Vice President Al Gore, among other high-level speakers. And of course one cannot forget the State Receptions and then fantastic Opening and Gala Receptions hosted at the Field Museum and the Museum of Science and Industry in architecturally gorgeous downtown Chicago.



Bio-Linkers (left to right) Marilyn Johnson, Lisa Seidman, Jeanette Mowery, Lisa Huffman-Martinez, and Elaine Johnson pose for a photo at the Bio-Link booth at BIO 2010.

Each exhibitor displayed organizational literature and handed out fantastic giveaways ranging from flashdrives to fancy pens to hand sanitizers to t-shirts to earphones. This year, Bio-Link gave away 3-in-1 flashlight/whistle/key chains and Post-it notepads with our logo imprint. Several exhibitors raffled off incredible prizes such as iPads, iPods, GPS Navigation Systems, Omaha Steaks and Starbucks giftcards.

The Bio-Link booth had about 1,000 attendees who stopped by for information and many new contacts were made. Much thanks to Bio-Link’s assistants Kathie Whelchel, Marilyn Johnson, Lisa Seidman, and Jeanette Mowery for their tireless support in the exhibit hall.

- Lisa Huffman-Martinez
National Center

Fellows Forum Highlights



Summer Fellows Forum Participants

Northeast Region

Matthew Christian
Lara Dowland
Judith Fitzpatrick
Amrutha Kuraguntla
Danielle Thompson
Edgar Troutd
Sonia Wallman

Southeast Region

Luz Arroyo-Cruz
Deborah Davis
Linnea Fletcher
Misty Gish
Toby Mapes
Kevin Pegg
Russ Read
Johanna Weiss
Bill Woodruff

North Central Region

Farrok Asadi
Diana Bradner
David Brooks
Elizabeth Clayton
Mary Ellen Kraus
Joseph Lowndes
Ryan Mahlberg
Farah Movahedzadeh
Jeanette Mowery
Robin Robatcek
Lisa Seidman
Becky Staerk
Thomas Tubon
Barbara Wenger
Kathie Wheelchel
Luanne Wolfigram
South Central Region
Jennifer Ausland

Jennifer Chancellor
Chas Downey
Rob Hatherill
Shelley O'Grady
Cory Robinson
Diana Spencer
Kathy White

Northwest Region

Adrienne Houck
Josephine Pino
Sandra Porter

Southwest Region

Johanna Anton
John Carrese
Laurence Clement
Jim DeKloe
Bob Del Vecchio
Bart Gledhill
Tamara Goetz

Frances Grau-Brull
James Harber
Colleen Hough
Chris Humbert
Elaine Johnson
Edith Kaeuper
Stan Kikkert
Angela Merchant
Suzanne Montgomery
James Price
Ashley Riggleman
Jennifer Rilea
Gina Sanzenbacher
LK Sengupta
Susmita Sengupta
Xan Simonson
Anu Suresh
Janice Toyoshima
Orenda Tuason



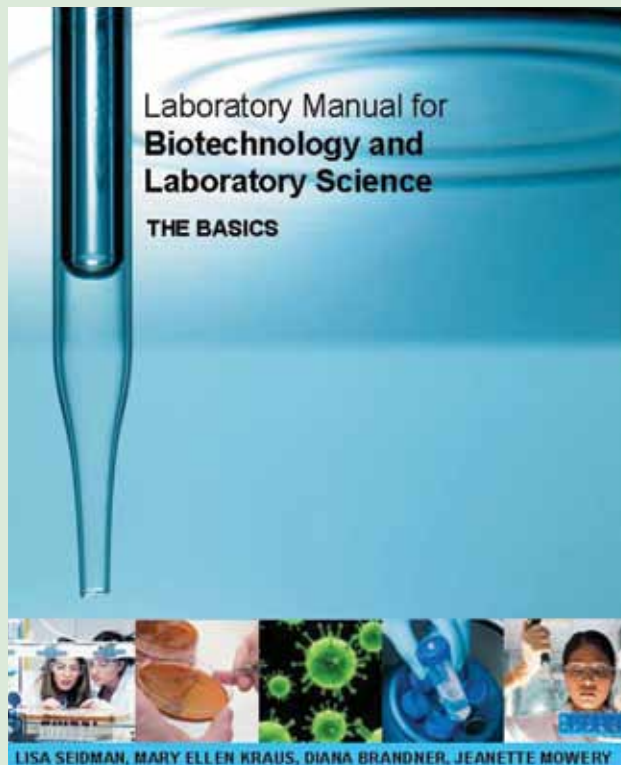
New Biotech Lab Manual

The faculty of the Biotechnology Laboratory Technician Program at Madison Area Technical College have just completed writing a new laboratory manual entitled "Laboratory Manual for Biotechnology and Laboratory Science: The Basics." The manual will be published by Benjamin Cummings and will be available for Spring 2011 classes. This laboratory manual has evolved over many years and its development was very much influenced by conversations and interactions with Bio-Link colleagues. The manual is organized to help students master fundamental laboratory skills in a cohesive and systematic way. The authors believe that students are most successful when their specialized coursework (such as molecular biology or bioprocessing) is built on a strong foundation of knowledge, skills and attitudes. Eight units cover the fundamental principles and techniques of:

- Safety
- Documentation
- Metrology (measuring weight, volume, and pH)
- Spectrophotometry
- Preparing Biological Solutions
- Performing Assays
- Basic Biological Separation Methods (centrifugation, chromatography, and electrophoresis)
- Growing Cells (bacterial and mammalian)

Woven throughout the manual are activities and discussions that guide students in developing a thoughtful approach to laboratory work including planning effectively, recognizing and solving problems, and analyzing and interpreting numerical and non-numerical data.

- Lisa Seidman, Ph.D.
Madison Area
Technical College



Save the Date!

Bio-Link's 13th Annual
Summer Fellows Forum

June 6-10, 2011

Clark Kerr Campus, Berkeley, CA

Info and Registration at

www.bio-link.org

Discover Puerto Rico Biotechnology

Dr. Jose Perez-Jimenez, PI of the NSF funded ATE Grant, Primer Tropical Bioprospecting Venture at CETA (DUE-0903274) invited me to speak at his forum, "Careers in Biotechnology" for high school teachers and their students. The forum was held at the theater in Barceloneta, one of two biotechnology hubs on the island, on September 16, 2010. The event was being sponsored, not only from funding from this grant, but also by a grant obtained from AMGEN, and a FISPE-Pathways for Advanced Biopharmaceutical Manufacturing (P116V090048).



Photo courtesy of Gwendolyn Morgan

Approximately 300 students turned out for this event, which is a 15-fold increase from last year. Obviously the two-week summer workshop held for teachers in 2009 was a success, as they did a great job of recruiting students to come to the forum. It was a lively group, partially based on interest but the Spanish pop music also perked up the group. I was the only individual to deliver my "Bienvenidos" at the event in English, while everyone else, including the students were bilingual, the rest of the event was communicated in Spanish. This emphasized the need for "mainlanders" to become bilingual as we are all part of a global community and Biotechnology is an international venture. Although my Spanish is rusty, I was able to pick up the main ideas of the presentations, and since the speakers were all dynamic, I observed the audience's reactions.

The program began with a brief biotechnology overview given by Professor Jose Diaz, from the Universidad del Turabo who holds a Masters in Microbiology, has worked in the industry, and is now working for Dr. Perez. Sra. Roseline Velez, a Math teacher at Escuela Luis Melendez Rodriguez, gave a presentation in which you would have thought she was a microbiologist. She certainly

learned a lot last summer! Engineering Professor Jannette Perez, also from Turabo, presented on Engineering careers related to Biotechnology. To close out the presentations a professor from the Design Department spoke about Biomimicry, which the students seemed especially interested in.

During my trip, I visited CETA (http://www.suagm.edu/ut_pr/ceta/index.html) with Jose Perez and Jose Diaz. This both state of the art bioprocessing and pharmaceutical fill equipment facility is used by the 4-year/2-year system. We immediately started to think of the short courses they could be offering to the larger community that includes individuals from mainland U.S., as airfare to Puerto Rico is fairly inexpensive and direct flights from several mainland cities are readily available. I also suggested that they consider marketing their pharmaceutical fill curriculum, as it is not that common to find a combo program, biotech and pharmaceuticals.

Later I had the honor to meet the Chancellor at the Universidad de Turabo, faculty members, and a representative from the biotechnology industry, Vilma Bonilla Chathelineaud, President of BioPharma Training

Services. We discussed their future plans and interests; they strongly support projects that promote economic development and encourage students to go into STEM related careers. I realized that they also have a lot to offer to the global Biotechnology community. BioPharma Training Services in conjunction with the 4-year/2-year educational institutions provides cutting-edge biotechnology related training for industry at sites that correspond to the two biotechnology company hubs on the island.

So why couldn't mainlanders take advantage of this and also get to stay in a beautiful tropical location? If you want to find out more about biotechnology in Puerto Rico, email Dr. Perez-Jimenez at ut_jperezjm@suagm.edu or contact him at 787-743-7979 ext 4279.

- Linnea Fletcher, Ph.D.
Austin Community College

HI-TEC 2010 HI-LIGHTS

The Second Annual HI-TEC Conference took place at the Omni Shoreham in Orlando, Florida from July 26-29, 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. It is an opportunity for community and technical college educators and stakeholders seeking professional development opportunities, educational materials, collaborative ventures, and insights into emerging market trends to develop and advance the technical workforce of the 21st century.

Bio-Link presented the back-by-popular-demand session "Technicians Speak About Technical Education" that featured four technical professionals from different fields who provided insights into their technical education. The "Technicians Speak About Technical Education" Panel (photo at right) was moderated by Terryll Bailey of The Allison Group and Elaine Johnson of Bio-Link, with panelists: Adam Copley and Steve Kane, both from United Space Alliance, Kennedy Space Center in Florida, Julie Hietschold of Collin County Community College District in Frisco, Texas, and Mica Welsh from the National Center for the Biotechnology Workforce in North Carolina. They spoke candidly about their skill preparation, about technical careers and what is important for educating the technical workforce.



Bio-Link was once again a Co-Producer for this year's conference and also exhibited in the two-day Technology Showcase. HI-TEC will be held at the Hyatt Regency Embarcadero in San Francisco from July 25-28, 2011 and planning is already underway to make next year's conference even more informative and enjoyable. For more information visit the HI-TEC website at highimpact-tec.org.

- Lisa Huffman-Martinez
National Center

The Science Godmother



I have found a great deal of enjoyment promoting science to a class of second graders at Mississippi Elementary school students. My visits are possible because of my friendship with this particularly special teacher, Deborah Nygard. I donate advertising items from biotech conferences that go into their prize box, where they can earn them through various point generating activities. I also point out the websites on each promotional item, and since the classroom has a Smart Board, we can look up the companies and see how their products and discoveries are solving problems in all areas of science.

At the end of the year we have a nature day at the local community college, which is within walking distance. The students are able to see what college is like as well as visit the nature area, which is right by the Mississippi River. College faculty and students from the Biology Club lead nature walks for bird, tree and bug discoveries. I love visiting this class because these kids become so excited about their discoveries. It is easy to segue into a discussion of science as a discovery process and invite them to be the next generation of scientists.

- Kathie Whelchel
Bio-Link Consultant

HI  TEC

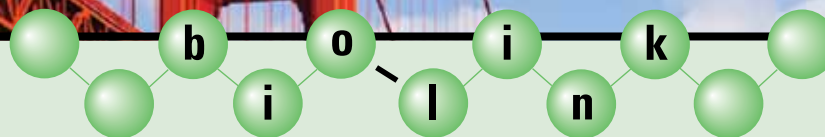
Save the Date!

High Impact Technology Exchange Conference

Educating America's Technical Workforce

July 25–28, 2011 • Hyatt Regency • San Francisco

www.highimpact-tec.org



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.

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