Francis S. Collins Commencement Speech

by Eric Park

Dr. Francis S. Collins, director of the Human Genome Research Institute at the National Institutes of Health, was the commencement speaker at Final Exercises on May 20. Raised in nearby Staunton, Collins graduated from the University of Virginia in 1970 with a degree in chemistry. He later earned his Ph.D. in Chemistry at Yale University and an M.D. at the University of North Carolina. His work led to the identification of various disease-associated genes including cystic fibrosis. In 1993, Collins was appointed to the NIH and NHGRI succeeding Dr. James Watson, co-discoverer of the DNA structure.

Collins delivered an exhortation to the 5,523 graduates to “seek a balanced life” and emphasizing four decisions they have to make. The first was choosing what your life’s work will be and what you can contribute. He mentions, “It has been said that the purpose in life is a life of purpose.” Collins also advised the Class of 2001 to realize their spiritual faith. Noting that contrary to the misconceived notion, there is no conflict between a “show me the data” scientist and a person who believes in God. He urged the graduates to not make the mistake of facing their “spiritual impoverishment” until a personal crisis or advancing age approaches. Love should be made a “priority of the highest order,” Collins said. He warned them against dwelling too much on physical differences, such as skin color. Collins emphasized that “At the DNA level, we’re all 99.9 percent the same.” The final suggestion for the graduates to take with them is to have fun in their lives. “Life is full of tragic and sober moments, so it is necessary to keep your sense of humor,” he said. To underscore the point of having fun, Collins concluded his speech by bringing out his acoustic guitar and singing a parody about college life.

After Collins finished singing the Frank Sinatra rendition of “My Way” to a standing ovation, UVA President John T. Casteen, III noted that, “At 35 or so of these I’ve attended, I have never heard an encore demand for a speaker.”
Externship Experiences

Protein Solutions, Inc.
by Larry Lanning

Through the Biotechnology Training Program, I recently had the opportunity to conduct an externship at Protein Solutions, Inc. (PSI) located in Charlottesville, Virginia. PSI is a biotechnology company that specializes in dynamic light scattering (DLS) equipment for characterizing biochemical solutions with regard to molecular size and weight. Their products are most commonly applied in biomedical and biopharmaceutical research including applications involving proteins, peptides, biopolymers, surfactants, and vaccines. PSI also has a second office in London allowing for easier customer support and product marketing throughout Europe.

During my externship at PSI, I was in charge of writing a proposal for a new application of their existing light scattering technologies. While working on this project I actively met with the research & development, marketing & sales, and applications & support personnel. This proposal was recently distributed, presented, and discussed during a company-wide conference. My externship at PSI not only gave me experience working in a research & development environment, but also taught me skills necessary for effectively communicating in a business setting. The knowledge I gained about dynamic light scattering has already benefited my current Ph.D. work examining bacterial motility using related light scattering techniques.

Merck-Stonewall
by Thomas Gervais

My industrial externship was conducted with Merck & Co., Inc. at their Stonewall manufacturing facility in Elkton, VA. Merck & Co., Inc. is a leading research-driven pharmaceutical products and services company, which discovers, develops, manufactures and markets a broad range of innovative products to improve human and animal health. I worked in the Technical Operations department from January to May 2001 as a team member on the new anti-fungal launch project. I was responsible for performing installation, operational and performance qualifications for the project's treated water and process HPLC systems in accordance with cGMP practices.

My efforts were a part of a larger endeavor to qualify and bring on-line the new facility to manufacture the new anti-fungal drug. As part of my duties, I had to resolve mechanical, instrumentation and automation issues associated with these systems which involved much communication and teamwork with many different groups at the Elkton facility. In addition, I wrote standard operating procedures and conducted operator training sessions on the use of the before mentioned water system. In my time at Merck, I learned much about bulk pharmaceutical production and also the importance of diligent documentation. Also, I believe that my communication and collaboration skills and control systems knowledge were greatly enhanced during this externship.

Welcome to the New Recruits

A warm Biotechnology Training Program welcome to four new trainees who were recently admitted to the BTP.

Linda Risko is in Biomedical Engineering working with Bill Guilford. Linda completed her BS degree at the University of Maryland. Patrick Martin is a Cell Biologist in the lab of Anne Sutherland. Patrick is a graduate of Virginia Union University and has been active with the PVCC Biotechnology program as a teacher.

Shannon Beck harkens from the Laurie lab in Cell Biology and is also a native Canadian (from Saskatoon) where she graduated from the University of Saskatchewan. Lorin Henrich is a Microbiology student in Deborah Lanigan's and David Brautigan's labs. Lorin received her Bachelors degree from Virginia Tech, and is a licensed Medical Technologist.
Company Spotlight: Biotage, Inc.

by Lorin Harrich

ON MAY 30, BTP STUDENTS PARTICIPATED IN A visit and facility tour with Biotage, Inc., a local subsidiary of the successful biopharmaceutical company, Dyax Corp. Biotage is quickly becoming a market leader in production of high quality, disposable chromatography columns and custom automation systems designed for small molecule purification. Biotage’s pre-packed FLASH cartridges eliminate the need for time-consuming column packing, while the Quad Personalized Purification system provides customized automation of the entire purification process, from sample injection to data integration. These patented systems and products help to streamline drug discovery by increasing purification speed and efficiency. Biotage has responded to the pharmaceutical industry’s need for improved purification and, along with Dyax, has been rewarded with $20 million in current sales.

The morning began with talks from Timothy Redden, Senior Director of Corporate and Foundation Relations, and Gene Block, Vice President for Research and Public Outreach. Students and Biotage participants learned how both of these offices demonstrate their commitment to develop and maintain strong ties between the university and industry. Gordon Laurie, director of the Biotechnology Training Program, and Klaus Ley, subsequently provided an overview of the BTP and described the program’s missions and goals. Next, students and UVA faculty heard exciting talks from Biotage representatives. David Patterson, President, and Peter Rahn, Vice President, outlined the company’s history, goals, and the success of its’ products. Students learned that the key to Biotage’s success lies in providing a high quality product that fills a market niche. During lunch, students and Biotage representatives were free to interact and an informal question and answer session soon developed.

After lunch, students and faculty toured the Biotage headquarters on Avon Street Ext. Participants enjoyed observing the research, development, and assembly of custom automated chromatography instruments and the production of the successful FLASH disposable cartridges. During the tour of the Biotage facility on River Road, students and faculty surveyed product assembly, packaging, and shipping. Biotage representatives also revealed plans for a brand new facility at the North Fork Research Park. This larger facility is required to meet the demands of Biotage’s increased growth.

This event was a resounding success! BTP participants learned about key attributes of a successful company and Biotage representatives had the opportunity to recruit potential externs and strengthen the communication between Biotage and the University of Virginia.
Biotecnology Trainees’ Recent Conference Presentations

"Quantitative Characterization of Bacterial Transport in Glass Micromodels"
Larry Lanning and Roseanne M. Ford
Program for Interdisciplinary Research in Contaminant Hydrology Annual Meeting.
Charlottesville, VA September 2000

"Neutrophil Morphological Regulation of Selectin Binding in Shear Flow"
Eric Y.H. Park, McRae J. Smith, and Michael B. Lawrence
2000 BMES Annual Fall Meeting
Seattle, WA October 12-14, 2000

"Quantitative Characterization of Bacterial Transport in Etched Flat-Plate Glass Micromodels"
Larry Lanning and Roseanne M. Ford
Annual AIChE Meeting
Los Angeles, CA November 12-17, 2000

"Neutrophil Microvillus Regulation of Selectin Binding in Shear Flow"
Eric Y.H. Park, McRae J. Smith, and Michael B. Lawrence
Experimental Biology 2001 Conference
Orlando, FL March 31-April 4, 2001

"Direct Measurement of Wall Shear Rates in Venules in vivo"
Michael L. Smith and Klaus F. Ley
Experimental Biology 2001 Conference
Orlando, FL March 31-April 4, 2001

"Leukocyte Rolling Velocity in vivo is determined by Wall Shear Rate, Not Wall Shear Stress"
Michael L. Smith, McRae J. Smith, Michael B. Lawrence, and Klaus F. Ley
Experimental Biology 2001 Conference
Orlando, FL March 31-April 4, 2001

"Enantioselective Synthesis and Separation with Equilibrium Conversion Using Immobilized Whole Cells"
Thomas R. Gennato, John L. Gainer, and Giorgio Carra
American Chemical Society National Meeting
San Diego, CA April 1-5, 2001

"Conformation and a New Modeling Approach to Hydrophobic Chromatography"
Tara L. Titze, Jennifer M. Sokol, Jennifer L. McNay, John P. O’Connell, and Erik J. Fernandez
American Chemical Society National Meeting
San Diego, CA April 1-5, 2001

"Conformation and a Generalized Modeling Approach to Hydrophobic Chromatography"
Tara L. Titze, Jennifer M. Sokol, Jennifer L. McNay, John P. O’Connell, and Erik J. Fernandez
PRPP 2001 Symposium
Washington, D.C. May 16, 2001

Later that evening, members of the Program were invited over to the Laurie’s residence and treated to a delicious lasagna dinner. The Monopoly board was brought out for a little post-dinner entertainment. The game surfaced up a competitive spirit out of everyone that was hidden before now. It is a good thing that we decided to focus our careers into implementing technology and innovation for biological problems and not into real estate acquisition.