



Elizabethtown College

Biology Newsletter

Fall 2005

2005 Biology Alumni Reunion and Alumni Award at the October 15th Homecoming

The department will present the **Dr. Charles F. Farver-Apgar and Dr. Bessie D. Apgar Biology Alumni Award** during the 2005 Homecoming festivities. The recipient of the 2005 award is **Dr. David K. Kelley**.

Dr. David K. Kelley graduated from Elizabethtown College in 1981, completed medical school at the University of Pittsburgh's School of Medicine in 1985, completed his residency in Internal Medicine at Baylor College of Medicine in 1988, and received a Masters degree in Public Administration from Penn State University in 1999. He is Board Certified in Internal Medicine and Certification eligible in Geriatrics.

He was in private practice of internal medicine for four years (1988-92), was an Assistant Professor at Penn State University's College of Medicine for six years (1992-98), worked for Aetna Health Inc. as a Pennsylvania medical director for six years (1998-04), and recently became the Chief Medical Officer for the Pennsylvania Department of Public Welfare's Office of Medical Assistance Programs.

Throughout his career Dr. Kelley has been concerned with the quality of health care especially in underserved populations. While in medical school he was involved in studying the effects of diabetes in Hopi and Navajo Native Americans in Arizona. While in private practice he served as a board member and provided medical services at Hamilton Health, a Federally Qualified Health Center for the underserved in Harrisburg, Pa. As the Director for Clinical Quality Improvement, he oversaw the quality and utilization management at Penn State's Hershey Medical Center. While on faculty at Penn State he participated in a volunteer clinic for the homeless and transient population at Bethesda Mission in Harrisburg. At Aetna, he was responsible for utilization and quality management for central and northeastern Pennsylvania. He continues to see underserved patients at Pinnacle Health's Diabetes Clinic in Harrisburg.

In his current position, Dr. Kelley oversees the clinical and quality aspects of the Medical Assistance Program that provides health benefits to over 1.7 million recipients. The program serves Pennsylvanians with low-income, disabilities, and the fragile elderly population. His current priorities are to modernize the program's Fee-For-Service program, improve access to preventive health care and periodic screening procedures, improve access to dental care, develop programs to address childhood obesity and smoking cessation, and develop a state-wide preferred drug list.

Dr. Kelley is married for 19 years, has three children, attends St Patrick's Cathedral in Harrisburg, and lives in Roberts Valley just north of Harrisburg. He enjoys gardening, hiking, tennis, and bicycling.



New Ways to Stay in Touch

For the first time, some alumni will be receiving this information via the Web. In an effort to reduce our paper usage, we'll be posting the Newsletter on the Department web pages for all of those interested; <http://www.etown.edu/biology>.

If you received a paper copy this year and would like to switch to online viewing, please email Nancy Sabulsky (sabulsnk@etown.edu) or Tom Murray (murrayte@etown.edu).

You can also stay up to date with Department activities by subscribing to news from the department posted on our web page. In the weeks and months ahead we'll be posting announcements of speakers and events, and those of you with Internet access and a news service can receive our news directly!

2005 PAS Presentations

Twelve biology students, pictured below, presented the results of their research projects at the annual meeting of the Pennsylvania Academy of Science. Their presentations were well received by the meeting participants and for some, served as the basis of their Honors in Biology defense.



PAS attendees from left to right: Anne Gordon, Heather House, Amie Shaffer, Josh Mundorff, Rob Burke, Joe Szulewski, Kristen Kuc, Amit Prasad and Stephen Burkholder. Erin Gundersen, Jill Gutekunst and Tom O'Brien were missing for the picture.

Summer 2005 Student Research Activity

Five students performed research this summer with ETown faculty both at Pomona College in California and at Elizabethtown College. Their research was gratefully supported by the Dorothy Lyet Research Endowment, the National Science Foundation (Dr. Bridge's grant), and the continuing generosity of Dr. E. Jane Valas.

Alicia Alcamo - Alicia Alcamo spent ten weeks this past summer at Pomona College in Claremont, California completing a research internship under the direction of Dr. Diane Bridge (Elizabethtown College) and Dr. Daniel Martinez (Pomona College). The focus of her research was to use gene expression to evaluate development in the basal eumetazoan, *Podocoryna carnea*. This animal is well-suited for studying the evolution of body organization, since its life cycle includes both a sessile polyp stage and a free-floating medusa stage. Whole mount RNA in situ hybridizations were performed in order to characterize expression of three developmental regulatory genes whose roles in polyp development is well understood—homeobox genes from the Emx and NK-2 families and a FoxA2 gene. Results to date provide evidence for parallels in development of the oral end of the polyp and medusa, as well as for a loss of aboral patterning mechanisms during the evolution of the medusa.

Alex Theophiles —Alex spent this summer at Pomona College in Claremont California, researching with Dr. Bridge. His research topic included ascertaining the areas of expression of the Receptor Tyrosine Kinases involved in Vascular Endothelial Growth Factor transmembrane signal transduction in *Hydra magnipapillata*. The lab at Pomona is headed by Daniel Martinez. Three other students were also working in the lab, two from Pomona College, and Alicia Alcamo.

David Hamel – Over the past two summers, Dave has worked closely with Dr. Coren and other students at E-town to aid in the construction and characterization of a new human genomic library. Dave continued working to identify the presence of the p53 gene in several clones from Dr. Coren's first PAC library using a combination of bioinformatics, RFLP mapping and PCR.

Robert Burke and Yasunori Nagahama — Rob and Yas worked in Dr. Coren's lab arraying bacterial colonies containing fragments of human genomic DNA inserted into the pJCPAC-Mam2 vector. Four hundred and seventy three 96-well plates were completed. The

A Special Thank You

*To the Biology Students
who contributed their
summer research , work,
volunteering, and internship
experiences for the
Newsletter.*

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library under construction will be used as a tool for investigating gene regulation in mammalian cells.

Off-Campus Summer Research/Internships:

Once again many of our students spent this past summer in research laboratories, pursuing internships, gaining experience, “on the job”, or volunteering in a biology-related field. The biology students who responded to our survey summarized their past summer’s experiences below and on the following page:

Abbas Alibhoy – Hershey Medical Center as a participant in the Summer Undergraduate Research Internship Program (SURIP).

Steven Choc – University of Toledo Environmental Research Center in an REU(Research Experience for Undergraduates) program this summer studying the utility of hydroponics in the bioremediation of arsenic.

Audrey Hitz – “This summer I worked as a Chiropractic Assistant/Front Desk personnel for Fields Chiropractic in Lebanon County. The doctor, Dr. Daniel Fields, has been in practice for 12 years and is located off East Penn Avenue in Cleona. My job included receptionist-like work, filing clerk, calling insurance companies, preparing paperwork for the doctor, preparing and cleaning the treatment rooms, and developing x-rays! (That was the best part!) I enjoyed working with and for Dr. Fields and I now have a better understanding of the medical profession and insurance companies too!”

Jessica Hoagland - “This summer I had a research assistant position at Penn State College of Medicine in Hershey. I worked in the Ophthalmology Research Laboratory under Dr. Thomas Gardner. During this approximately eight week experience I worked on compiling treatments for diabetic retinopathy, for the labs later use, and also researched transversely sectioning the layers of the retina.”

Krysten Jones – Fox Chase Cancer Center as a summer assistant working in a laboratory. The specific project investigated the effect of temperature (and perhaps also buffer composition) on the quaternary structure distribution of various PBGS proteins.

Laura Kubica – “This summer I volunteered at the Institute of Living in Hartford, CT for the Olin Neuropsychiatry Research Center. I began as a volunteer under the supervision of Michael Stevens, Ph.D.. With Dr. Stevens, I worked on an adolescent ADHD study which was trying to determine how medicines, such as Aderall and Concerta, affect the brain and in which parts. I sat in on MRIs, EEGs and interviews as part of this study. In addition, there were responsibilities with database entry and phone calling. Also, I was MRI certified. For the second half of the summer, I worked at the research center under Kent Kiehl, Ph.D. on an adult psychopathy study. This study dealt with cocaine users and how their brain function differed between the current users, past users and non-users. Again, I was able to sit in on MRIs, EEGs, and interviews. The studies still are not finished.”

(student research continued)

Rachael Levine – Summer Internship at Greifenstein Farm that started in March 2005. Greifenstein Farm is a horse breeding farm located in Elizabethtown. Rachael worked with mares and their foals, learning current breeding practices.

Linda Nilsson – The Pennsylvania State University, College of Medicine, Hershey, PA, this summer as a Laboratory Research Intern at the Gittlen Cancer Foundation Institute. Linda worked on a project examining a family of RNA/DNA helicases. She also will help to establish an assay suitable for use with nuclear extracts, as well as examine the mechanism of action of a relatively specific inhibitor. The project will involve molecular biology, as well as routine laboratory techniques such as subcellular fractionation, electrophoresis, and protein purification.

Stephanie Petry – “During this summer, I volunteered at the Lebanon Outpatient Surgical Center located in Lebanon, Pennsylvania. Weekly during my vacation, I was able to experience the inner workings of this medical facility. I spent the majority of my time at LOSC helping nurses prepare the “Pre-op” area and handle patients in the recovery room. On one occasion, I had the privilege of observing a surgery in the “OR” which was an amazing experience.”

Anthony Rizzardi – Internships/shadowing experiences at Ashland Regional Medical Center in Ashland, PA, at Geisinger Medical Center, Danville, PA, and two family practices (one in Shenandoah, PA, and one in Frackville, PA). At all of these medical centers and clinics, Tony worked in many primary care fields, such as family practice, internal medicine, and pediatrics. He was also finishing his EMT training and certification.

Laura Sheridan ‘08 – “This summer I had the wonderful opportunity to shadow at Winthrop University Hospital in Long Island, NY, about five short minutes from my house. After having volunteered there for four years, I was able to get started and become more involved. Twice a week I shadowed PAs and doctors on rounds and patient visits. The most rewarding aspect of the summer was when I went into surgery. I scrubbed in and was able to watch from a very close distance. The first surgery was a brachial left arm surgery where they basically replaced the artery, and a carotid endorectomy. It was wonderful and I hope I have the chance to do it again.”

Kristen Wagner—”Volunteering with the Dolphin and Sea Lion Show at Hershey Park was such a wonderful experience. Even though there was a plethora of cleaning jobs to be done, there was always time for fun! Between cleaning the stage, observing water tests, preparing fish, medically taking care of the animals and making sure things were running smoothly; the animals were always willing to play. It was great to see how happy all the visitors were to see the dolphins and seal lions and it made me feel good that I had a hand in their joy. The animals had a great time too! They were always excited to see crowds of people cheering for THEM! It is a great job for anyone who loves animals and doesn’t mind getting their hands dirty once in a while!”

Michelle Erney – Worked at Perkiomen Animal Hospital this summer shadowing the 5 practicing Veterinarians.



Proposed façade of the Science Mathematics and Engineering Center

Faculty and Staff Activities

The Biology Department Faculty had another tremendous year. In addition to teaching their full load of courses, they were extremely active both professionally and in service to the College. The faculty received great support from Dr. David Bowne, Dr. Jodi Yorty and Dr. Debra Frielle who provided adjunct help during the year.

The faculty presented 14 papers and posters at scientific meetings. Eight of those presentations were with students at the 2005 Pennsylvania Academy of Science meeting and the rest were at a variety of national and international conferences in their discipline.

They served as reviewers of manuscripts in major journals, reviewed grants for outside agencies and have chaired sessions at meetings. They submitted or collaborated on several hundred thousand dollars worth of grants submitted to NIH, NSF, PA DEP and the Whitaker Foundation.

Jane Cavender's competitive renewal of her \$150,000 NIH grant was funded. Three time grant awardees are not typical, and Jane's research competes with the best research institutions in the nation!

In addition, department faculty initiated new programs like the 3+3 DPT program with Thomas Jefferson University and new agreements with PCOM. They served on campus wide committees and were leaders on campus wide initiatives. And as always, they served as advisors to more than 160 current students and even greater numbers of alumni.

Biology Department Research Seminars

Beginning in the Fall of 2004 the Whitaker Foundation sponsored a Research Seminar Series for the Biology Department. We invited four speakers to campus, two in the Fall Semester of 2004 and two in the Spring Semester of 2005.

Kathleen Maguire-Zeiss: "*A Convergent Pathobiological Model of Parkinson's Disease*". Dr. Maguire-Zeiss obtained her B.S. from Albright College in 1981 and her Ph.D. from the Pennsylvania State University College of Medicine, Department of Pharmacology in 1987.

Jennifer Stanford: "*A Tale of Two Proteins: Regulation of Cdc25 and Wee 1 in the Normal and Checkpoint Arrested Xenopus Egg Cell Cycles*". Dr. Stanford obtained her B.S. from Elizabethtown College in 1999 and her Ph.D. from the Harvard Medical School in 2004. She is currently a Teaching Fellow in Cell Biology at Harvard Medical School.



Dr. Stanford presenting her research.

(Seminar speakers continued)

David Hart: “*Strategies for reducing the ecological impacts of dams: a progress report on dam removal and dam operation.*” Dr. Hart obtained his B.A. from the University of California at Santa Cruz and in 1979 received his Ph.D. in Ecology from the University of California at Santa Cruz at Davis. He is currently Vice President of the Academy of Natural Sciences in Philadelphia.

Jeffrey Pufnock: “*The RET Kinase as a Mechanistic Link Between Thyroid Autoimmunity and Thyroid Cancer.*” Jeff obtained his B.S. from Elizabethtown College in May 1998 and worked for one year with Merck Pharmaceuticals as a bio-technician producing Pneumovax vaccine. He is currently attending graduate school at Thomas Jefferson University in Philadelphia.

In addition to those four speakers, **Dr. Richard Rest**, Professor Microbiology and Immunology at Drexel University College of Medicine, presented a talk on *Anthrax: History and Bioterror Weapon*. Amit Prasad '05 worked for Dr. Rest over his junior summer and contacted him last Fall, inviting him to share his research at Elizabethtown College. The presentation was sponsored by the Biology Club, Medicus and *Beta Beta Beta*.

Twenty-Seventh Annual College Awards Ceremony

Once again biology students and faculty received several awards at the 2005 College Awards Ceremony.

Congratulations to:

Distinguished Student Awards - Anne A. Gordon, Amie L. Shaffer

Ginger Groff Memorial Scholarship—Alicia M. Alcamo

Service Learning Award for Faculty/Staff— Dr. Jonathon Coren

College 2004-2005 Scholars—Included 14 Biology majors!

SIFEdicus CAMP: Think BIG

The 2005 Elizabethtown College SIFEdicus Camp took place from the August 15th to the 19th. Jessica Hoagland, Laura Kubica, Curtis Nolt, and Yas Nagahama from the Medicus club worked in conjunction with students from S.I.F.E. to run a summer science and business camp named “Think BIG”. Inner city students from Lancaster and Harrisburg traveled to the college to learn about physics, biology, chemistry and economics, creating their own store and much more! One of the highlights of the week was the biology lesson taught by Dr. Wohl. The week ended with parents joining their students on Friday for a graduation ceremony complete with diplomas given by Provost David Parkyn. The camp was started by Bozho Todorich '03, and has continued the past four years. It was designed to inspire and show kids that there are many opportunities beyond what they can see, and give them a chance to experience college for a week!



Students from the SIFedicus camp pausing for a picture.

New Roles for Alumni

On April 22, 2005, The Elizabethtown College Biology, Chemistry and Biochemistry, and Physics and Engineering Departments held a joint student research symposium. Alumni from the area were invited to attend. The afternoon began with a pizza luncheon enjoyed by all. The event showcased student research from the departments and allowed alumni to interact with students and faculty. Nineteen students presented posters. Five of those posters helped the students below earn “Honors in Biology”.



2005 Honors in Biology Recipients from left to right: Heather House, Amie Shaffer, Anne Gordon, Josh Mundorf and Amit Prasad.

On April 21st, 2006, the next Biology/Chemistry research symposium will be held. Stay tuned for more information from the Alumni Office!



Elizabethtown College

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From the Chair...

It was a loud and dusty summer in Esbshade Hall as much needed ventilation work turned the building into a construction area. As this issue of the newsletter indicates, the students and faculty in the department had another great year and we are particularly proud of the 29 graduates who joined the alumni ranks last May 21st.

The department participated in a highly successful review by the Council on Undergraduate Research and that will set the stage for many discussions this year on the challenges the department faces in the future. We'll be discussing curriculum, recruiting the best faculty and students, and maintaining our programs as we continue to await our new facility.

We are excited about the arrival of eighty new first year students this fall. Those eighty students come from ten states and bring many talents to the College and to the Department. One new challenge for those first year students will be a fall semester that has both Biology and Chemistry courses. After several years of waiting one semester to begin Chemistry, we have gone back to what many of you likely experienced during your time at Etown.

As we enter into another academic year, I urge all of our alumni to continue to stay in contact with us. Your suggestions, ideas, internship and shadowing opportunities all continue to help strengthen our program. With "Educate for Service" in mind, I ask that you think about ways you can help the current students in the department.

I am particularly grateful to those who support our scholarship and building fundraising efforts. We can't do it without your help. I look forward to seeing many of you at Homecoming this fall.

TEM 9/05
