

Department of

Biology



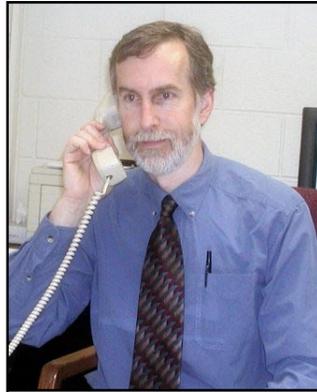
VIRGINIA POLYTECHNIC INSTITUTE
AND STATE UNIVERSITY

Vol. 1, No. 1

Spring 2003

VIEW FROM THE DEPARTMENT

Welcome! Please enjoy this new issue of the Virginia Tech Department of Biology newsletter. Why are we writing to you? We seek your advice, welcome your friendship, and offer you a standing invitation to visit us in Blacksburg. In other words, we want to keep our connections with you strong. After all, you are part owners of our programs.



Dr. Robert H. Jones
Department Head

If you visit your Department of Biology, what will you see? Many new faces, for one thing. Undergraduate majors now stand at about 1100 and graduate students at 80. Faculty and staff are retiring, including nine since 2001, and more will be retiring over the next several years. New hires have followed, increasing the diversity of our Department's programs and people. Derring Hall was painted inside and out (yeah!), and new buildings are popping up all over the Virginia Tech campus, including one between Derring and Hahn Halls.

Some things remain the same. Each year, our undergraduate and graduate students seem to win more university and national awards than any other department on campus. Upwards of 85% of our undergraduates applying to medical schools are accepted. Our faculty, graduate students, and staff are frequently recognized for excellence in research, teaching, and student advising.

On the surface, some recent challenges we have faced seemed to be insurmountable. Budget cuts are real and have been painful. The campus is still in the throes of a major reorganization. Our department has a shortage of space for research and teaching. Until recently, many leadership positions on campus were unfilled. Finally, as we all know too well, the post 9/11 world is not the same place we once knew. However, I find the old cliché that *challenges are often opportunities in disguise* still rings

true. To meet the budget challenge, we are ramping up research grant applications, turning to our colleagues in other life science departments to coordinate teaching programs, and looking for partnerships with other scientists in the university and in industry. The recent bond initiatives approved by Virginia voters in November 2002 will result in a new biology building. New campus leaders are emerging who appreciate the value of forming partnerships and the need to relate our work to world events.

One additional opportunity has emerged, i.e., the chance to reach out to YOU. You share many of the same challenges and issues that we do, although in different settings and contexts. You know the value and meaning of a university education, and you know quite well how Virginia Tech can best serve our state and nation. It's always a good time to reach out to our Biology Alumni. Please read this newsletter and, by all means, please drop us a line with your thoughts, or better yet, come by.

Sincerely,
Robert H. Jones, Head

Alumni Advisory Board

In fall 2001, a new partnership between the Department of Biology, alumni and friends was formally initiated. A charter was drafted and approved to create The Biology Department Advisory Board of Virginia Tech. The Board's goals are to build stronger relationships and improve communication between alumni, friends, faculty and students. Although all of the charter Board Members have B.S. degrees in Biology from Virginia Tech, their careers have taken a variety of directions, including medicine, insurance, biological science research, intelligence, and computer programming. The Board has been meeting twice a year to provide advice to the Department, develop strategies to advance the Department's mission, and strengthen career networks for students. Anyone interested in being part of this group should contact Dr. Jones at rhjones@vt.edu, or (540) 231-5712.

Tech Biology on the Road

Professor **Fred Benfield** will be spending spring semester as a Visiting Erskine Fellow in the Zoology Department at the University of Canterbury in Christchurch, NZ. He will be doing research on New Zealand streams and helping zoology faculty develop an intensive field course in stream ecology.

Biology Professor **Art Buikema** and Entomology Professor Rick Fell took 12 students to South Africa last summer for a study abroad course on ecology and culture of the area. They are teaching the course again in summer 2004 and will add to the material they developed last year. **Art** returned to Zimbabwe in summer 2002 to present workshops to faculty from the National University of Science and Technology on MS Powerpoint, web development and teaching strategies. He also gave talks on toxicity testing and biomonitoring to the Zimbabwean Water Authority, taught strategies to teachers from a private woman's secondary school, and lectured on the American classroom to Zimbabwean students leaving to study in the US.

Professor **Klaus D. Elgert's** research program is expanding beyond cancer immunology. Robert Grange (and his group; Department of Human Nutrition, Foods and Exercise) and Klaus will present research at the national meeting of the 2003 Experimental Biology meeting on genome profiling of inflammatory markers during Duchenne's Muscular Dystrophy, a severe and progressive skeletal muscle wasting disease. Also, with colleagues in the College of Veterinary Medicine, he is analyzing the immunological responses of macrophages during Brucella infection using Affymetrix murine microarrays.

Graduate student **Maria Faini** attended the Cold Spring Harbor Molecular Genetics of Bacteria and Phages Meeting last August with her graduate advisor, Assistant Professor **Ann Stevens**. They presented a poster at this gathering of scientists who study diverse aspects of prokaryotic growth using the tools of molecular biology, genetics, biochemistry, and structure analysis.

Last July during the annual herpetological society meetings in Kansas City, Associate Professor **Tom Jenssen** made an invited presentation at the symposium on Contemporary Herpetological Research. Because he is journal editor for *Herpetologica*, Dr. Jenssen also conducted a workshop at the meetings with Ken Dodd on "Publishing in Scientific Journals: Process, Do's, and Don'ts."

Professor **Anne McNabb** and graduate student **Bob Maher**, attended the Society for Environmental Chemistry and Toxicology meeting in Salt Lake City last fall and

presented in the session on thyroid toxicology. In January, they both presented papers at the Society for Integrative and Comparative Biology meeting in Toronto.

Professor **Erik Nilsen** will spend a year at the University of Hawaii as the G. P. Wilder Chair in Botany, a position for distinguished botanists. While he is in Hawaii, Erik is working with the Bishop Museum of Honolulu on an NSF sponsored study of rhododendron diversity, ecology, and leaf anatomy in Papua New Guinea.

Professor **Steve Scheckler** was an invited keynote speaker in July 2002 at the International Palaeontological Congress, Sydney, Australia, where he spoke on the expansion of early terrestrial ecosystems and the rise of the first forests at the Jane Gray Memorial Symposium (Conquest of the Land -Terrestrialisation). Virginia Tech was the only institution to have two keynote speakers at this conference, which was attended by over 1000 researchers from all over the world (Richard Bambach of Tech's Geological Sciences was the other). Steve also gave research papers this past year at the Botanical Society of America Meeting in Madison Wisconsin, and at the Geological Society of America's National Conference in Denver, Colorado.

University Distinguished Professor **John Tyson** and several of his students and colleagues (Laurence Calzone, Chris Hong, Andrea Ciliberto, Emery Conrad, Kathy Chen, and Jason Zwolak) are spending time this semester at the Institute for Advanced Study un Budapest, Hungary, where John (along with Bela Novak of the Technical University of Budapest) is organizing a Focus Group on Computational Cell Biology.

Jeff Walters, Bailey Professor of Biology, will attend the Red-cockaded Woodpecker Symposium in Savannah, Georgia, along with five graduate students and eight technicians from his research group. These symposia are held every ten years, and this will be the fourth. Jeff will present three papers, and each of the graduate students will present a paper as well.

Professor, and immediate past Head of the department of Biology **Joe Cowles**, is on sabbatical in New Zealand and Australia from January to early summer 2003. In New Zealand, he is working in Dr. Clive Ronson's microbiology and genetics lab at the University of Otago. In Australia Dr. Cowles will be working at the University of Queensland with Dr. Peter Gresshoff, Professor of Molecular Genetics and Genomics in the Botany Department.

Chang Named to Head One of University's Restructured Colleges

By Clara Cox

Lay Nam Chang, interim dean of the College of Arts and Sciences and former head of the physics department, has been named the dean of the university's College of Science following an in-house search that began in December. Chang's appointment to lead the college, which is evolving from the College of Arts & Sciences as part of Tech's restructuring, was effective March 10.

"Dr. Chang's energy, scholarship, leadership experience, and passion for achievement, combined with his commitment to the goals of diversity and excellence made him the ideal choice to head the College of Science. He has demonstrated that he is prepared to face the challenges and opportunities that lie ahead, and we look forward to his leadership over the next three years," Vice President for Academic Affairs and University Provost Mark G. McNamee said in announcing Chang's selection.



Dr. Lay Nam Chang

In his new position, Chang will help establish the new college, define its vision, enhance the quality and diversity of employees and students, create an administrative infrastructure, lead the college's participation in the university's capital campaign, create a climate that encourages all members of the college community to contribute to the college and university goals, serve as a member of the university's leadership team, develop internal and external relationships that will promote the college's programs, and provide entrepreneurial leadership for the growth and development of academic, research, and outreach programs in the sciences.

The College of Science will include the departments of biology, chemistry, economics, geological sciences, mathematics, physics, psychology, and statistics.

"The idea of starting a brand-new College of Science is really quite exciting, and I am honored to be part of the team that will be putting this unit together. We are fortunate to be living at a time when progress in science and technology is making possible what we could only dream about only a short while ago. I look forward to working with everyone at all

levels and backgrounds to achieve our collective goal of reaching top-tier status," Chang said.

Chang, interim dean of Arts and Sciences since November 2001 and physics department head for six years before that, joined the Virginia Tech faculty in 1978 after working on the physics faculty at the University of Pennsylvania for seven years. He received his Ph. D. in theoretical physics at the University of California at Berkeley. He has conducted research at MIT and the University of Chicago and has been a visiting scientist or visiting instructor at institutions of higher education in Denmark, British Columbia, Singapore, and the United States.

As interim dean of Arts and Sciences, Chang initiated discussions that eventually led to the definition of goals of two colleges emerging from the College of Arts and Sciences; managed the two rounds of budget reductions without losing sight of the possibilities for these two colleges; maintained the momentum in activities promoting diversity; initiated several cross-college collaborations in critical technologies, life sciences, arts, humanities, and social sciences; and established regional alumni advisory groups for the two colleges.

(This article appeared in the March 14th, 2003 edition of The Spectrum and appears with permission.)

Alumni in the news

We intend to highlight the accomplishments and important milestones of our alumni. For example, did you know that **Dr. James R. Pratt** (Ph.D. 1984, student of Professor John Cairns) was recently named Dean of the College of Arts and Sciences at Idaho State University? Do you have some news you would like to share? If you have any comments or updates, please feel free to send them by email or mail to:

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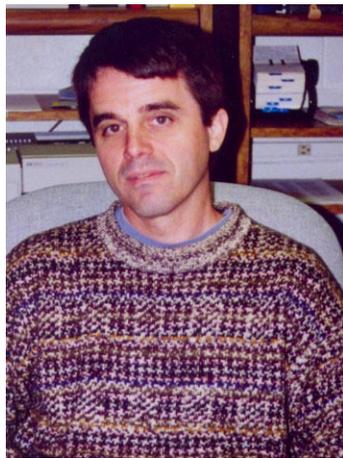
Milestones



Dr. Duncan M. Porter receives the Queen's Anniversary Prize

In November it was announced that the Darwin Correspondence Project, of which **Duncan Porter** is Director, had won a **Queen's Anniversary Prize**. The prizes are given to recognize and reward "the outstanding contribution that universities and colleges in the United Kingdom make to the intellectual, economic, cultural, and social life of the nation." The prize was awarded at Buckingham Palace in February. Coincidentally, the Project was featured in an article in the November/December issue of *Humanities*, the magazine of the National Endowment for the Humanities.

Volume 13 of *The Correspondence of Charles Darwin*, co-edited by Duncan Porter, was published by Cambridge University Press in December.



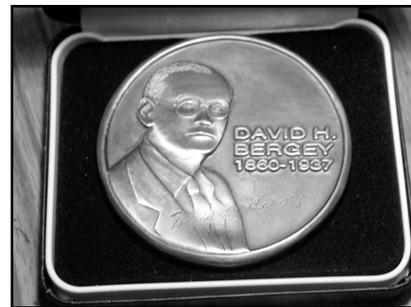
Dr. Jeffrey R. Walters

Jeff Walters received the **Elliott Coues Award** from the American Ornithologists' Union at the society's meeting in September in New Orleans. Jeff was presented this research award, which is given for "meritorious contributions having an important influence on the study of birds in the Western Hemisphere," in recognition of his work on red-cockaded woodpeckers. Jeff also continues to serve on the National Research Council's Committee on Restoration of the Greater Everglades Ecosystem (CROGEE).

Blue Ridge Public Television featured **Robert (Bob) Benoit** in its Blue Ridge Education series regarding the **Council for Advancement and Support of Education Award**. The segment, comprised of an interview with Robert and footage from his ethics class, aired in February. Bob also won **Virginia Tech's prestigious Wine Award** for teaching excellence in 2002.

Art Buikema had an award winning paper "Active learning with online context-based modules" that he presented at the 13th International Conference on College Teaching and Learning. Dr. Buikema has followed Bob Benoit's lead by winning the Wine Award for teaching excellence in 2003.

Dr. Noel Krieg has been awarded the **Bergey Medal for Distinguished Achievement in Bacterial Taxonomy**. Bergey's Manual of Determinative Bacteriology and now Bergey's Manual of Systematic Bacteriology have been the definitive source of information for bacterial taxonomy for 80 years. Noel has contributed repeatedly as an author, an editor, and for a number of years now on the board of trustees. This award recognizes both his scientific contributions and his longtime service to the field. We are extremely lucky to have Noel continuing to teach a course in microbial diversity for us.



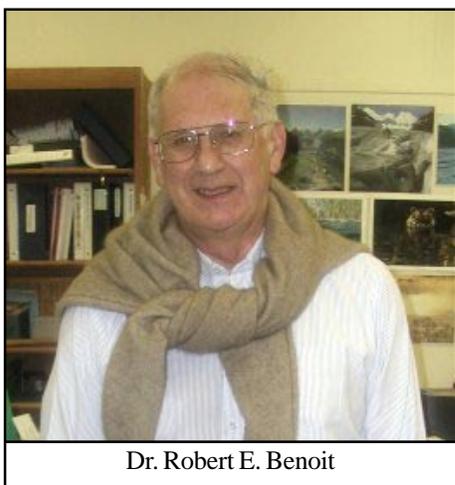
The Bergey Medal for Distinguished Achievement in Bacterial Taxonomy

Seniors who graduated at last spring's commencement ceremony (2002) voted **Bill Claus** the most influential professor during their time at Virginia Tech. Bill said, "When I think back through past acknowledgments of my work, I am more proud of this recognition than any other."

Two of our top biology graduate students have been honored this year. **Tracey Slotta** has been selected as the 2002-2003 recipient of the university's Graduate Student Service Award. **Rebecca Ablner** has been selected as the recipient of the university's Graduate Teaching Assistant Excellence Award for 2002-2003. Both will be recognized at the Graduate Education Week Awards Banquet.

Comings & Goings

In the last two years, seven faculty have retired including **Curtis (Curt) Adkisson**, **Robert (Bob) Benoit**, **Bill Claus**, **Albert Hendricks**, **Orson Miller**, **Bruce Parker**, and **Al Youston**. Bob Benoit and Bill Claus are award winning teachers, and both are still teaching general microbiology on a part time basis. Al Youston is a renowned microbiology researcher, and served as the leader of our microbiology group. Curt Adkisson taught many of our vertebrate biology classes and researched bird behavior. Albert Hendricks is an aquatic biologist who helped manage the department's space and teaching schedules, and is now helping part time by teaching freshman biology. Orson Miller and Bruce Parker are world-class botanists; Orson taught mycology and is now living in Idaho, and Bruce studies algae and is now coordinating our seminar series and the OWLS



Dr. Robert E. Benoit

group. Staff retirements include our Advising Office Secretary **Shirley Hale** and Office Administrator **Dee Lee**. Shirley was known and loved by thousands of students for her compassion and steady demeanor in the face of many crises. Dee brought organization to our administrative staff and departmental operations, and played a lead role in building the department's reputation as a well-functioning, service-oriented unit with a positive work environment. We also note the departure of our Academic Advisor **Susan Haymore**, who accepted a position in the dean's office of the College of Arts & Sciences

New faculty and staff hires include **Dr. Lynn Adler** (Assistant Professor, Ecology) **Dr. Zhaomin Yang** (Assistant Professor, Microbiology), **Dr. Steve Melville** (Associate Professor, Microbiology), **Dr. Paige Warren** (Research Assistant Professor, Ecology), **Tina Pavlik** (Office Administrator), **Betsey Waterman** (Academic Advisor), **Laila Queral-Kirkpatrick** (Research Specialist), and **Robyn Vaden** (Fiscal Technician).



Dr. Jack A. Cranford, Assistant Department Head stands proudly with care package items gathered by the department for U.S. Troops in Iraq.

Jack Evans has taken on extra responsibilities in advising and is now in the faculty ranks with a title of instructor. **Jack Cranford** has stepped into the role of Assistant Department Head, working with **Bob Jones**, the new department head taking over for **Joe Cowles** in August 2002.

Congratulations to **Zhaomin Yang** on his recent marriage to **Jenny Wang**. We are also proud to welcome **Chloe Guinette**, who was born to **Jill Sible** and **Denis Guinette** on Friday, March 21st at 2 pm.

OWLS

In January 2003, Emeritus Professors **Bruce Parker** and **Ernie Stout** established a club of biology emeriti to help build relationships between the Department former biology students (our alumni). The OWLS (Older Wiser Learned Scientists) meet about once a month, usually over lunch, during which Bob Jones (Department of Biology Head) or other Virginia Tech faculty discuss recent developments and new directions proposed or planned. The OWLS' membership will be increasing as more biology faculty retire. Present members are: Curt Adkisson, Bob Benoit, John Cairns, Bill Claus, Alan Heath, Noel Krieg, Al Hendricks, Buck Holliman, Orson Miller (in Idaho), Bruce Parker, Bob Paterson, Harry Steeves, David Stetler (in California), Ernie Stout, Bruce Wallace, David West, Al Youston.

Did you know

Biology students have won many of the top university, national and international scholarships and awards including Rhodes; Marshall; USA Today All America Academic Team; Barry M. Goldwater; University Woman of the Year, Jack Kent Cooke, Morris K. Udall; German Club Rising Sophomore, Junior and Senior; Pfizer Research Fellowship; College of Arts and Sciences Outstanding Senior; University Graduate Teaching Award, University Graduate Service Award, University Honors Scholarship; Pamplin Scholarship, and many more.

Our current and emeritus faculty include two members of the National Academy of Science, one University Distinguished Professor, Two Alumni Distinguished Professors, and one endowed chair (the Bailey Professor of Biology).

Investments in our department are multiplied! Our faculty obtains many research grants from national agencies and corporations. These grants account for 45% of the Department of Biology's total budget. Research dollars are used for discovery and student training, AND they help to support the state's economy in many ways.

Researchers in the Department of Biology are:

- unlocking the secrets of biochemical interactions between host tissues and mixtures of different strains of infectious microbes; this knowledge can be used to fight complex infections that have proven difficult to treat
- learning how stream ecosystems process nutrients and toxic substances, which can identify new ways to overcome pollution
- determining how novel structures and functions have evolved in bacteria, spiders, insects, fish, plants, lizards, birds and mammals; these discoveries often lead to spin-off technologies and economic growth
- discovering how native and introduced species cope with environmental stress; this information can help improve our capacity to deal with negative impacts of global climate change

For more on our Department's Student Research Topics, go to <http://www.biol.vt.edu/graduate/index.html>

Virginia Tech Biology Alumni and Friends

Your gifts to the Department of Biology and alumni projects have helped us move forward in our quest for excellence. Thank you! We are seeking your continued support for graduate student fellowships, undergraduate scholarships, and various program initiatives. We are also seeking large gifts to equip the new biology building, and establish chaired faculty positions. Your gifts are tax deductible. For information about estate planning, special gifts or company matching programs, please contact Daniel Palmer, Assistant Director of Development for the college (dapalmer@vt.edu).

We need your support to help our students and faculty.

*Make check payable to the Virginia Tech
Foundation, and write on check
"for Department of Biology"*

I would like my contribution to be distributed as indicated below:

1. \$ ___ for graduate student fellowships
2. \$ ___ for undergraduate scholarships
3. \$ ___ for program initiatives to achieve excellence in research and teaching
4. \$ ___ for lab equipment

**Send your contributions to:
Virginia Tech Foundation, Inc.
201 Pack Building Mail Code 0336
Blacksburg, VA 24061**

The Department of Biology web site is getting a makeover!

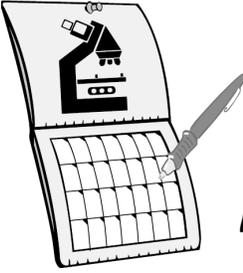
Visit us on the web at <http://www.biol.vt.edu> to see our new look. The site is a work in progress due to the large number of pages, but any and all comments and suggestions would be very welcome. Please email your comments to tinap@vt.edu or call (540) 231-5712. Thank you!

Focus on Research

Biology faculty Jill Sible and John Tyson have recently found experimental evidence to verify predictions of a mathematical model concerning the regulation of irreversible transitions into and out of mitosis (the division of genetic material during the cell cycle). The commitment to mitosis must be an all-or-nothing decision, otherwise deleterious mutations result. This research highlights the power of pairing experimental and computational biology to understanding complex processes. Mathematical modeling of the cell cycle and other biological events may some day lead to previously unidentified targets for therapy of cancer and other diseases.

The results of this work have been published in an upcoming issue of the *Proceedings of the National Academy of Sciences* (volume 100, pp. 975-980, 2003), one of the most prestigious journals in science. Sible is an Assistant Professor and specialist in the field of developmental biology, and Tyson is a University Distinguished Professor specializing in computation biology. Tyson has been developing mathematical models to describe the cell cycle for many years, but only recently have experimentalists collaborated to test the validity of these models. Co-authors of the PNAS article are Wei Sha, who completed her master's degree with Sible and is now a Ph.D. student at the Virginia Bioinformatics Institute at Virginia Tech; Jonathan Moore of the Cancer Research United Kingdom London Research Institute; Katherine Chen, a senior research scientist at Virginia Tech; Antonio Lassaletta, an undergraduate student in mechanical engineering who is studying with Sible; and Chung-Seon Yi, a postdoctoral associate with Tyson. The research has been funded by NIH, DARPA-BIOSPIICE, the Carilion Biomedical Institute, and Virginia Tech.

For more information, please see:
<http://www.biol.vt.edu/faculty/Sible/jslabhome.htm>
<http://www.mpf.biol.vt.edu>



Mark your calendars for a special Biology alumni event in Blacksburg, April 24, 2004.

More on this in our fall newsletter issue.

Please help us by updating your address and providing comments and items of interest for future newsletters: (email to pavliktp@vt.edu **OR** write below and mail to Dr. Robert Jones, Department of Biology, Virginia Tech, Blacksburg, VA 24061.

Your Name _____

Class _____

Mailing Address _____

Email _____

Notes/comments _____



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