THE NICHE

Department of Biology Student-Faculty Newsletter

Volume 4, Number 3 College of William and Mary *April 1992*

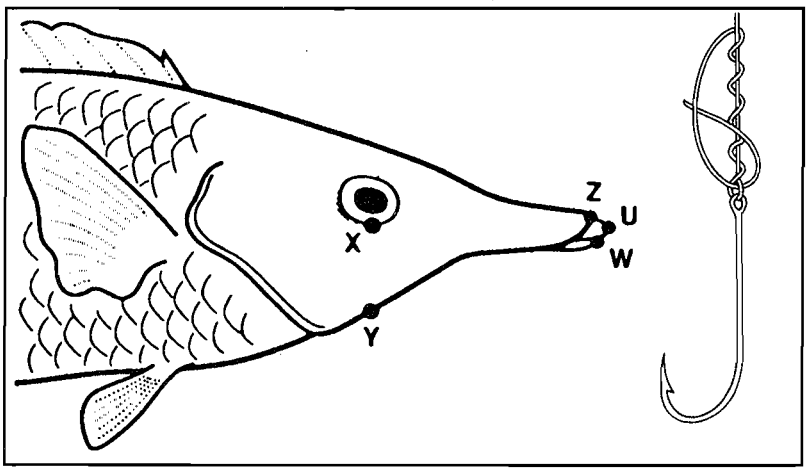
Four Retiring Biology Faculty Members To Be Honored At Department Banquet

Retiring Professors **Black, Brooks, Byrd,** and **Hall** will be honored by the Department of Biology at a formal dinner on May 4th. After introductions by, respectively, Professors **Grant, Scott, Beck,** and **S. Ware,** the retiring faculty members will deliver "farewell" remarks to their assembled colleagues and guests. The four together will present the last departmental seminar of the academic year entitled "**A Celebration of Life (Sciences): 128 Years of W&M Biology....**" on Friday, April 24th, at 4 PM. Profiles of retirees and comments by two begin on next page.

New Vertebrate Biologist to Join Faculty in Fall

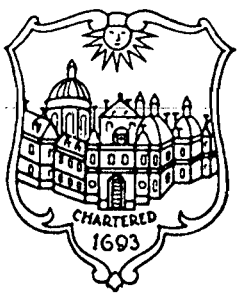
Dr. S. Laurie Sanderson accepted the Department's offer of a tenure-track Assistant Professor position to begin this Fall. Currently one of only 20 University of California President's Fellows in the UC system, she is in the Institute of Theoretical Dynamics and Division of Environmental Studies at the University of California at Davis.

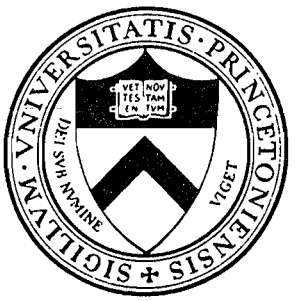
A native of Hawaii, she is a Phi Beta Kappa graduate of the University of Hawaii, and received her Ph.D. at Harvard in 1987, where twice she received a Certificate of Distinction in Teaching. In addition to teaching duties at Harvard and Davis, she has taught at Discovery Bay Marine Laboratory, University of the West Indies, and was Ship's Naturalist on a cruise to the Southwest Pacific. In both 1985 and 1988, Dr. Sanderson was a NOAA Aquanaut engaged in saturation diving investigating among other things the optimal foraging behavior in goatfish and the effects of water movement on coral respiration.



In 1986-87, she was an American Fellow of the American Association of University Women, and since 1985 has participated in a number of programs in Boston and Davis for elementary and high school students of science.

Lead author of a 1990 *Scientific American* article, "Suspension-Feeding Vertebrates," and a 1991 *Science* paper, "Fluid Dynamics In Suspension-Feeding Blackfish," Dr. Sanderson will teach Vertebrate Biology this Fall. She says she is looking forward to working with the Department's excellent students in class, field, and laboratory. Her husband **Mark Patterson**, also a biologist, will be joining the School of Marine Science. The Department looks forward to the arrival of the two California biologists sometime this summer.





Princeton Professor Visits Department As Part Of Undergraduate Assessment

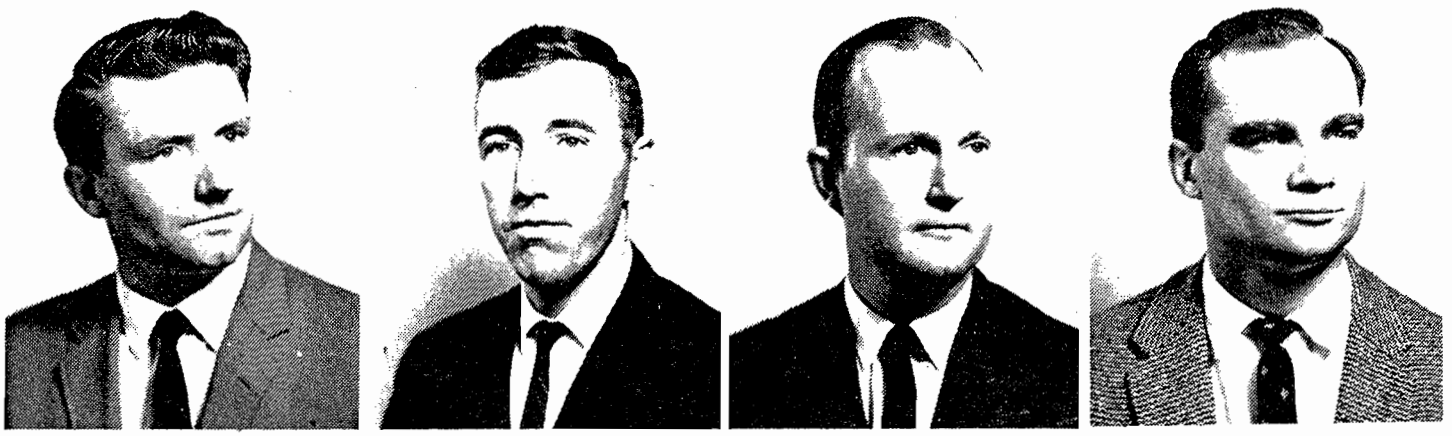
Dr. Malcolm S. Steinberg, Henry Fairfield Osborn Professor of Biology at Princeton University, visited the Department all day on March 24th as part of the university-mandated undergraduate assessment program. Steinberg met with faculty and students in the Department, as well as with **Dean of the Faculty David Lutzer** and **Dean of Undergraduate Studies Clyde Haulman.**

Steinberg's charge was to assess and evaluate William and Mary's undergraduate program for Biology concentrators. He will write a report of his findings and recommendations which will be incorporated into the assessment document the Department is preparing. **Professor Norman Fashing,** who is leading the assessment effort in Biology, says the report will include data collected from Biology alumni, current seniors, and other sources, and will be presented to the Dean and College's Assessment Committee sometime next month.

Results of the assessment project will be reported in the first issue of **THE NICHE** next Fall.

BIOLOGY

WILLIAM & MARY



photos from William and Mary Yearbook, 1967

Dr. Black From Cal Tech

By Lisa Jones

Dr. Black first arrived at William and Mary from Pasadena, California in 1959 without ever having visited the east coast. As a post-doctoral student at the California Institute of Technology, his doctoral advisor informed him of a job opening for a liaison between the Virginia Institute of Marine Science and the Department of Biology, and it was in this capacity that Dr. Black was hired by the College. He still holds this joint appointment, making him the only biology faculty member who is also a true faculty member at VIMS. For a time, when there was a joint PhD program between William and Mary and the University of Virginia at VIMS, Dr. Black also found himself appointed as a faculty member of the University of Virginia --unfortunately without a salary.

The view from the door of his first office in the basement of Washington Hall was of shelves of *Biological Abstracts* covered with a blue fungus that flourished in the un-air conditioned Williamsburg climate. At that time there were only five faculty members in the biology department and Dr. Black's National Science Foundation Grant made him one of very few faculty with federal grants support. During his first years at the college Dr. Black conducted his research at VIMS. Later he taught and did research in the quonset huts behind the campus center, which housed the Biology Department before the construction of Millington.

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William & Mary

Through the years Dr. Black has taught courses in Cell Physiology, Experimental Embryology, Comparative Physiology, and Invertebrate Development, as well as Developmental Biology and parts of Introductory Zoology. Dr. Black's research career at the college began with an interest in the biochemical changes during sea urchin fertilization and included a bit of travel as it evolved. In 1964, he spent the summer in Bermuda with his family, teaching and doing research. He returned to the University of Washington, where he had received his degree, for six months in 1967. He also spent three summers at the Gulf Coast University of Texas Marine Lab.

A Jack of All Trades

From an interview with Erika Shugart

After thirty years at William and Mary, Dr. Jack Brooks summed up his experience this way: "I've just really enjoyed teaching because the students are so good." Although he has thoroughly enjoyed his career at the College, he's looking forward to doing "something different," to continuing his nature photography and travelling. This summer he'll return to Australia, leading another group of William and Mary students through the outback.

Dr. Brooks' first duties were to teach Human Physiology. Since then he has initiated a number of courses, from Vertebrate Biology and then Evolution to the current Human Biology course. He also helped start the College-wide Honors Colloquium in the early 1960's, the program that preceded the present Charles Center programs. He thinks the College recently has tended toward over-emphasizing graduate research at the expense of the undergraduate program. "What makes William and Mary great?" he asks. "The undergraduate program."

One thing he misses is the willingness of students and faculty to take time off to go camping in the mountains. He figures he's been on 15-20 Biology Club camping trips, mainly in the 1960's and 70's. He has good memories of hiking and camping with students and a number of other faculty such as Gus Hall, Bruce Grant, and Larry Wiseman. He thinks both students and faculty have changed, that students are more competitive now and have little time for weekend camping trips. But he's not complaining, only observing.

In 30 years, Professor Brooks has taught over 9,000 undergraduate students and directed about 15 graduate students, a number of whom have gone on to Ph.D.'s and faculty careers of their own. "I enjoy keeping up with current knowledge in my specialities," he says, glancing around his office filled with books and journals.

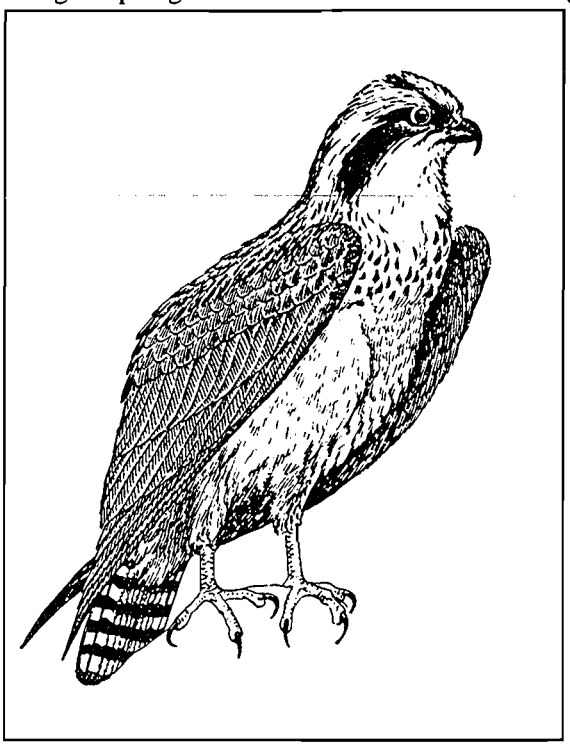
Although he has loved his job at the College, Brooks says "I'm glad I'm retiring," because now he can do many of the things he's wanted to try if he only had the time. For the first two or three years after retirement he says he "will play it by ear," travel and concentrate on his new avocation, photography. But he will remain a Jack of all trades, for next Fall he'll be back to teach General Zoology in the new curriculum. He just can't pull himself away.

Ornithologist Is Spelled B-Y-R-D

By Amanda Allen

From the looks of his office, it would appear that Dr. Mitchell Byrd will be retiring in May. The tables which once housed foot high stacks of reports and papers (out of which he claims to always be able to "put my hands right on" anything) are almost clear; their emptiness a tell-tale sign that the Byrdman is putting things in order. In reality, retirement after 36 years at William and Mary, during which he served as department chairman and professor of comparative anatomy and ornithology, will only be an end to classes and a chance "to get his work done."

If anybody could be in a state of perpetual motion, Dr. Byrd is. Hours outside of the classroom are spent flying for bald eagle nest surveys, coordinating the Virginia peregrine falcon hack sites, hiking hundreds of miles in search of nesting falcons, monitoring osprey populations, banding migrating raptors on the Eastern Shore of Virginia, serving as a consultant for and developing plans for species and habitat preservation, working with the Department of Game and Inland Fisheries, editing the bird chapter in the new *Virginia's Endangered Species* book and, as the list is endless, continuing a conservation quest of the highest order.



Though it may be difficult to catch him in his office, Dr. Byrd's efforts focus on campus issues as well and, from personal experience, students have always been welcome to tag along on an eagle survey or some other adventure out in the field (with field rule #1 being: always pack a hearty lunch which, no matter how delectable, will never match the delicacies of his own "magic table"). In my two summers as a hack site attendant for him in the mountains, he never hiked up without a backpack full of offerings.

While ornithology may be his specialty, Dr. Byrd is a strong proponent of diversity and his own Renaissance knowledge and interests cover all facets of biology from bones to botany to birds. As noteworthy as his knowledge is his sense of humor and he often ignites his class with some straight faced comment like "one rarely sees a rooster at high altitude." After hiking the trails of Shenandoah National Park for over 40 years and never seeing a bear, he adamantly proposed "that there are no bear in Shenandoah National Park", though I have not heard that comment since he was bluff charged by a black bear sow last summer.

After retirement this May, Dr. Byrd will continue to work out of his office on the second floor and even with all his clearing out of papers this semester, I am sure that by next semester those foot-high stacks of papers will accumulate again. But, then again his office would not be the same without them, nor will the biology department without him.

Peripatetic Professor Hall

By Angie Wonsettler

Professor Gustav Hall has spent much of his time, outside the classroom, traveling the world. He has visited thirty seven countries on five continents as a botanist, a birdwatcher, and as an assistant on various biological field trips. When asked about his travels he remarked that the most exciting places he had visited were Peru, Tanzania, and Rwanda.

Professor Hall described his trip to Peru as the most exciting place in the Western hemisphere. The first morning he and his fellow birdwatchers traveled to a remote stretch of the coast in nothing more than a Volkswagen Beetle. When they arrived they found a large colony of seals, Humboldt penguins, and one lone condor waiting for a dinner of seal, penguin, or "any person who happened to slip off the cliffs". The group moved on to the flats where they were greeted by thousands of Chilean flamingos flocking under the rising sun. From the flats they continued on through a mountain pass to an altitude of 16,000 feet. Although this area was not accommodating to low altitude lungs (Professor Hall stated that it was difficult to walk twenty feet without losing your breath), it was home for llamas and their herdsmen. Among the high altitude lakes, the birdwatchers saw many unique types of waterfowl and shorebirds. Another exciting adventure of Hall and fellow birdwatchers was being taken at machete point by the Yarinacocha Indians to their village on an oxbow lake in the Amazon basin and charged with trespassing. Their punishment for this crime was payment of a two dollar apiece fine, later waived.

Doctor Hall also remarked on his adventures in Tanzania and Rwanda. While in Tanzania, he visited the Serengeti Plain which was inhabited by over three million large animals including wildebeest, zebras, and lions close at hand. The Virunga Volcanos of Rwanda provided Hall with the opportunity of viewing the mountain gorillas. Before the trip the group was given instructions to follow in the presence of the gorilla" similar to those which you would follow in a faculty meeting" including: crouch with your head low, don't make any sudden movements or noise, and if a gorilla takes something from you don't attempt to take it back. Hall and friends hiked up to the area where the gorillas lived to be greeted by a 400 pound silver-back male screaming a warning call. When asked if this was frightening, Hall stated that he was more afraid of the native guides than the gorillas.

Incidental to these trips into the depths of nature, Professor Hall has also visited many cultural centers including the Great Pyramids in Mexico, the Alhambra in Grenada, Spain, the Paris Opera, and the Topkapi Palace in Istanbul.

In response to retiring, Professor Hall remarked that he is anxious to move on from being a college professor so that he can become more cultured and better traveled. It is sarcastic remarks like these that remind us of the incredible diversity and beauty of this world that we should all strive to see. Appreciation of "worlds" other than our own is the key to preventing ethnocentrism, and Professor Hall is an example of that fact.

By Professor Robert E. L. Black

In the Beginning there were no computers, Xerox copiers, air conditioners, secretaries, research space, departmental budgets, faculty research leaves, or much of anything else. The Department of Biology was without form and was void, and darkness was upon the faces of the faculty. Then President Paschall anointed Dr. Moses A. Byrd to be Chairman, and he begat many, many faculty members. And the President appeared to Byrd over a burning corncob pipe and commanded him to lead his Children out of the Land of Darkness (Washington Hall basement and the old quonset huts) into the Promised Building, flowing with distilled water (and sometimes rain). And the faculty begat many, many students. And such students they have been, even unto the second generation!

After lo, these many years we have begun to recognize that man does not live by equipment alone, and that computers, autoclaves, centrifuges, desk-top publishing and PCR machines are not sufficient to bring us into the Kingdom of Everlasting Knowledge. Like camels, we are experiencing some difficulty in going through the eye of our needle. Our faith is smaller than the size of a grain of mustard seed. Yet behold! One among us has arisen, who spreads a message of redemption; some say he is a messiah, but others think he is only a Wiseman from the East. Some would like to behead him, because he stirs up the people, but surely Another would follow him with the same message: Spread the Word to the non-science heathen and to the unconverted in the high schools! Glory to Biology on High!

Graduating Senior

by Professor G.W. Hall

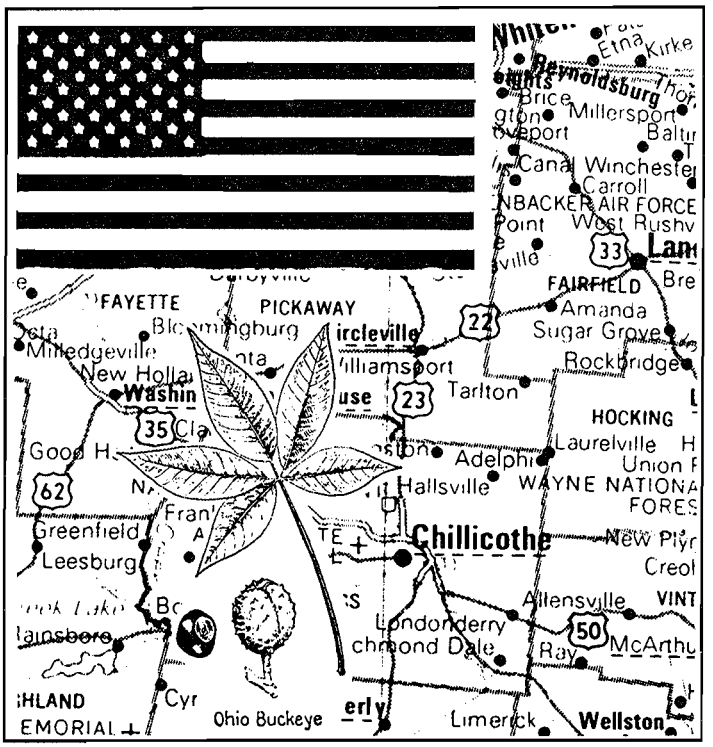
He who looks at a leopard through a quill will see only one spot.

Williamsburg Virginia being what it is, I take a certain perverse pleasure in my carpet-bagging, lower class, hillbilly roots: Chillicothe, in those same southern Ohio hills that sent Virginia Generals Sherman, Sheridan and Grant.

My parents lived with my widowed grandfather; perhaps if grandmother had lived, I would have become attracted to kitchenly things: aprons and mixing bowls, shaking and baking, and gone on to become a "real" scientist, a chemist, say, or at least a physiologist.

Instead I was much attracted to the cases of wildlife stuffed by my great grandfather, a captain in the Union Army (you know, the one that fought under the *American* flag), and my grandfather regaled me with tales of wildlife such as the clouds of Passenger Pigeons he had seen as a boy. (A modern equivalent soon will be to brag you have seen a Virginia oyster! "Even nostalgia ain't what it used to be".) I was shortly into a semi-feral boyhood, roaming and collecting in the rich mixed mesophytic forests of the Appalachian Plateau and Glacial Till Plains with relict peat-bogs and prairie potholes that all come together at Chillicothe.

Ohio University was radically different from William and Mary. Admission was wide-open with selection by a very heavy flunk-out rate. No General Biology as such was offered and General Botany was structured almost like a tutorial --there were 6-8 independent sections, each presided over by a prof who alternated between lecturing and lab exercises as he saw fit. Biology curriculum was heavily organismic and phylogenetic and we spent much time carefully dissecting and drawing dead living things (whereas a "modern" biologist spends most of his time working with living (?) dead things such as amorphous brown pastes from the bottoms of centrifuge tubes).



It does seem in that time and place there was more *hope* than *fear* that a "liberal" education would *liberate* one to more enlightened views on religion, politics, society, et al. We even came to believe that human progress was inevitable.

An Air Force ROTC commission, in lieu of Korea, came with me classified as a "Psychological Warfare Officer," the closest they could come to "botanist" and assignments in the lower Rio Grande Valley and West Germany. (Also ROTC kept my Presidential aspirations alive.) Four years of graduate work at Indiana was a very high quality experience, enhanced by their world-class cultural resources, especially in music. How-

(continued on following page)

Graduating Senior *(continued)*

ever, 30 years ago Indiana was already well ahead of William and Mary today in subverting undergraduate education to the research careers of faculty.

I interviewed at the College on a sunny February day in 1963, quite impressed with the youthful enthusiasm of the faculty taking control of the department and with the soft, pastel, almost dream-like beauty, almost like a Monet painting, of the campus. Actual working conditions in the Department were deplorable, it all jammed into just the basement of Washington Hall on lab furniture made at the Virginia Penitentiary. The only faculty still remaining from that spring are the three other retirees: Mitchell A. Byrd Is My Name and Bird Is My Game was much less into Bald *or* Eagles, working primarily on fish parasitology. "Cactus Jack" Brooks was a mere, precocious youth, callow and glabrous. Robert (Dean of Perpetual Hope) Black showed little of the poetic, almost Scriptural eloquence he now presents.

In 1968 the Department got a major boost with the opening of Millington Hall; Jack and I were the first to move classes over, he giving the first lecture in the new building, myself conducting the first lab. Social life of the department had a vigorous outdoor bent into the early 80's --regular picnics with Jungle Rules Volleyball (Carl Vermeulen and I showed up for classes on crutches after one such game), two camping trips a year to Cape Hatteras and several backpacks a year to the Blue Ridge and beyond. Brooks made something of a fetish of getting the best backpacking equipment; Grant and I showed him, via several mountain snowstorms, what counts is not the equipment so much, but the MAN inside.

The Clonal Williamsbourgeois environment, with its smug conservatism and preoccupation with warming over Death (albeit beautifully) can be a challenging place to live up to Thoreau's dictum not "to find at the end of your life you have not lived." It is not just that butterflies often pupate into caterpillars here; Death could be the only adventure you have left!

As a hillbilly, I have found myself in particularly desperate need for *rocks*, and most of my best recent memories are of that quest. Breathing them in (!) in the ashes raining on erupting volcanoes in Guatemala and Costa Rica. Up through the incredibly diverse flowery meadows and boulder fields echoing with the cries of the Himalayan Snowcock, in the massive Tien Shans of Kirghizia. Out into midnight blackness on the slopes of Mt. Kinabalu (Borneo), on a futile chase of the Moss-forest Frogmouth calling up on the ridge --elusive bird, that frogmouth, there is still no adequate type specimen, just fragments. Probably no one will earn his Administration research overhead off it; why does Nature create such worthless trash anyway?

If Williamsburg is the Center of the Universe, please drop me off At The Edge! The arthritis and sinusitis I have picked up in 29 years in its dank environs are easily medicated, but my Graduating Senioritis is flaming utterly out of control.

Bulletin of The College of William and Mary in Virginia

VOLUME 63 APRIL 1969 NUMBER 7

Biology

PROFESSORS BYRD (*Head of the Department*), BALDWIN, BLACK, AND CHESTER JONES.[1] ASSOCIATE PROFESSORS BROOKS, CALLARD, COURSEN, HALL, MANGUM, MATHES, AND TERMAN. ASSISTANT PROFESSORS GRANT, SIMONS, SPEESE, VANWINKLE, VERMEULEN, AND WARE. LECTURER GAPP.

Enrollment Demand Opens New Lab Sections

Both Cell Biology and Aquatic Ecology opened new laboratory sections to accommodate extra students. Animal Physiology has added enough new slots to allow the course to increase by about 75%.

The new curriculum begins this Fall. Only after new students register during the summer will the Department know what kind of total demand it will have for the new majors (Biology 203) and non-majors (Biology 100) courses.

New Phi Beta Kappa Members

Congratulations to Five new Biology PBK members from the class of 1992: Gina Adrales, Tara Atkins, Jennifer Hollar, NICHE co-editor Lisa Jones, and Elizabeth Wolff. As is typical, the fraction of new members who are Biology majors (about 15%) is greater than the fraction of all undergraduates who are Biology majors (under 10%).

TOP TEN LIST

The Top Ten Millington Hall Bio Quotations

10. "Negative fitness is a fate worse than death."
Dr. Grant

9. "Hey, I'm a fun-guy!"
Dr. Coursen

8. "Meter off the green."
Dr. Brooks on photography

7. "Another day, another pointer."
Anonymous about Dr. Mathes

6. "Mother Nature's a bitch!"
Dr. Hoegerman

5. "Hey, gringo!"
Dr. Hall

4. "Time to get out of this rat hole."
Dr. S. Ware

3. "Life . . . acknowledge it and move on."
On the door of Room 2

2. "Who will give me five dollars to bite the head off this lizard?" *Dr. Brooks*

1. "If you don't know anything about biology, you're an illiterate scum." *Dr. Wiseman*

Compiled by Amanda Allen and Sally Hunsucker

FIND THE LISTED WORDS IN THE GRID

allele artery behavior bone carbon cell chelate crustacean cytoplasm DNA gene lysis lysosome mandible meiosis meristem mimic mitosis oxygen petal phytochrome ribosomes root seed sepals shell stamen stem stomata synapse teeth tropism vein xylem zygote

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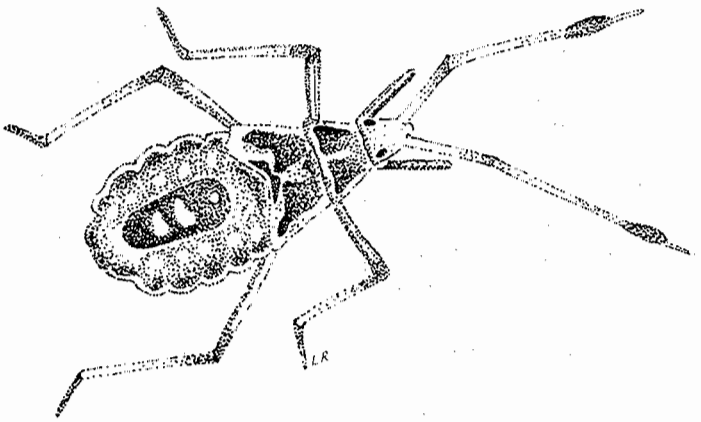


MONEY Magazine Ranks "Biologist" Number One Occupation in America

By Lisa Jones

If you thought chemistry majors were getting all the good jobs, think again! **"Biologist"** was rated number one in *Money* magazine's list of the best jobs in America (p. 68, February, 1992 issue).

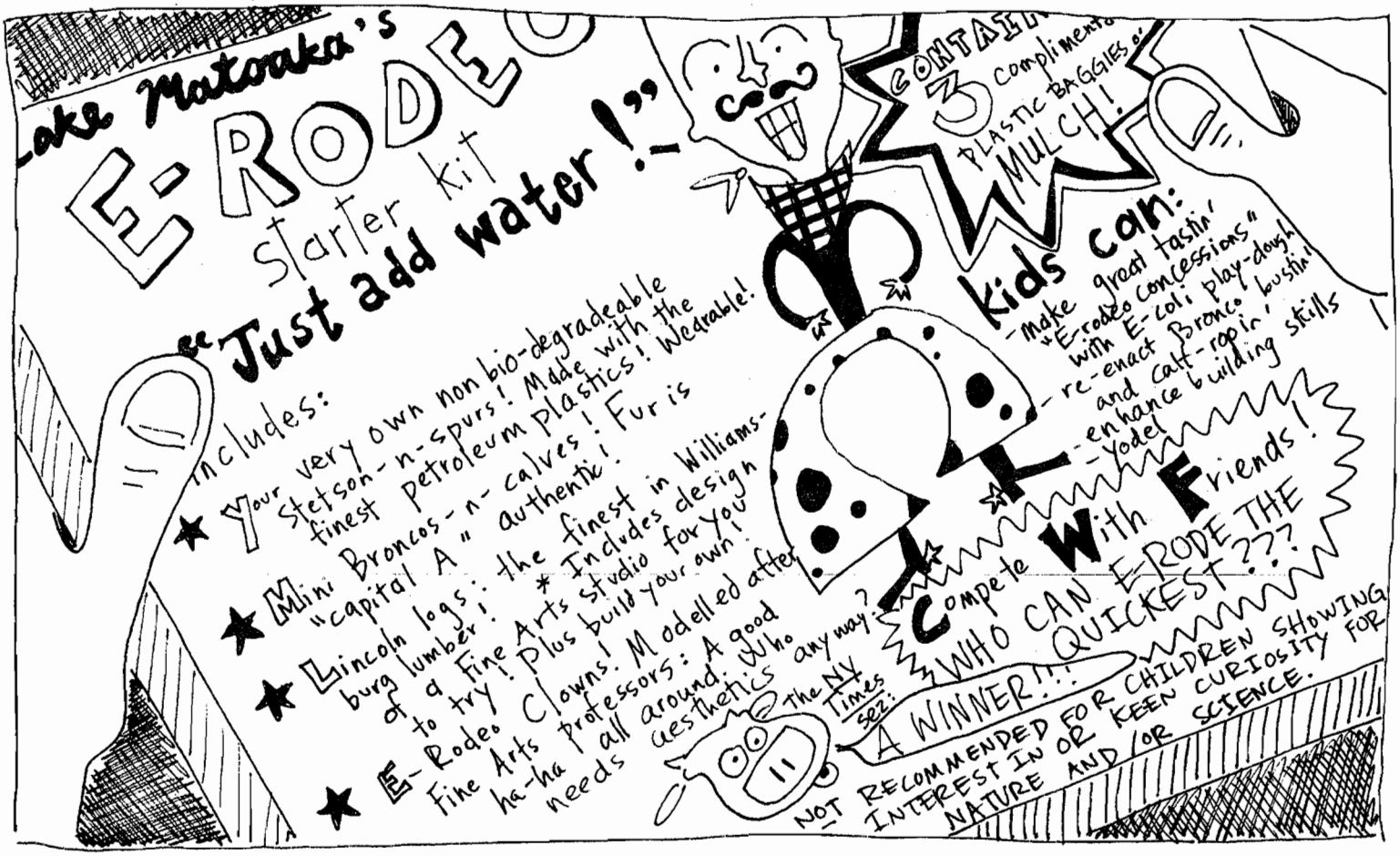
Occupations were ranked by a formula that considered annual earnings, security, prestige, satisfaction and future growth in the field. "Biologist" was rated *excellent* in the areas of job prestige and satisfaction, and *good* for job security. A biologist's annual earnings, at the 90th percentile of salaries, are now $64,531. Some other highly ranked biology-related jobs are physician (third), pharmacist (seventh), veterinarian (tenth), dentist (eighteenth), lab technician (42nd), and physical therapist (50th).

Biology Honor Society Selects Seventeen New Members

Seventeen new members of Phi Sigma, the Biological Honor Society for undergraduates, were initiated in April: **Christopher Beck, Linda Chin, Derek Dickinson, Nancye Donahoe, Amelia Entingh, Michael Fitch, Benjamen Haas, Thomas Johnson, Yoonah Kim, Laura More, David Norton, Noelle Parsons, Barbara Piasecki, Elizabeth Rottenmaier, Daniel Shillito, Mark Stoetzer,** and **Danielle Tillman.**

New members elected as their President, **David Norton. Barbara Piasecki** was elected Vice-President. **Laura More** and **Noelle Parsons** were elected Treasurer and Secretary respectively. The officers have begun discussions of how to increase Phi Sigma's activities.

Phi Sigma also has awarded $165 to each of three students to help fund their research projects next year. **Katherine Ann Barnoski** will study chemical inhibition of the formation of the K-antigen in *E. coli* with **Dr. Vermeulen.** Working with **Professor Beck, Matthew Campbell** will work on the determination of abundance and species diversity of migrating fall and wintering avian species on the Chesapeake Bay Bridge Tunnel Island. **Barbara Piasecki** will work in **Dr. Wiseman's** laboratory on a project begun at NIH on the effects of retinoic acid on endothelial cells.



Bio Club Helps Plan Local Nature Trail

By Chris Beck

Two years ago, the Clayton-Grimes Biology Club -- then under the esteemed leadership of Jonathan Akin -- was asked by James City County Schools to help in the construction of a nature trail at one of their new elementary schools.

D. J. Montague Elementary School has a wooded plot adjacent to the school that was ideal for a nature trail. When originally contacted, the Biology Club was told that a grant of $500 was given to finance the construction of the trail. Members of the club then proceeded to research nature trails and their construction with great interest and unrestrained fervor. They even rolled out of bed early on several Saturday mornings to investigate the woods to plan the path of the trail through areas of immense biological interest, such as a tree struck by lightning, rotting logs, and a woodpecker's hole. However, enthusiasm soon waned due to the bureaucracy associated with all such projects. All attempts to get involvement from high school biology students or the elementary school students were halted in the red tape of liability and parental consent. The nature trail remained dormant.

This year the go-ahead was finally given for the Biology Club to construct the trail as they saw fit and with the resources they had. Once again, this time with some new recruits, members headed out to plan the route of the trail. The trail was marked. Construction was finally begun, the trail being cut through the woods with rakes, shovels, hatchets, and the sweat from the members brows.

The results were beautiful. A three feet wide path edged with fallen trees. One weekend morning while busily at work the group was greeted by a one Mr. Moff. It turns out that Mr. Moff is the teacher who heads the D. J. Montague Nature Trail Committee comprised of a group of fifth graders. Much to the Club's surprise the Committee had elaborate plans drawn up by an architect and several thousand dollars worth of funds with which to work. Well, so much for all that work they had done.

Recently, Chris Beck and Jonathan Akin, now the esteemed senior advisor for the Club, met with the committee. Luckily, it turns out that the route that has been adopted for the trail is that originally laid out by the Club. Currently, members of the Biology Club are acting as technical advisors to the Committee, and are actively involved in research on the interesting biology of the nature trail.

Ultimately, the trail will be lined by numerous informative signs, teaching stations, activity stations like plaster casting of animal tracks, and an outdoor classroom. Members of the Club now look back and laugh about what has happened, knowing that things must get better and feeling reassured that the nature trail may be in place by the time the 5th Grade Committee members are taking BIO 101.

HONORS AND GRADUATE RESEARCH

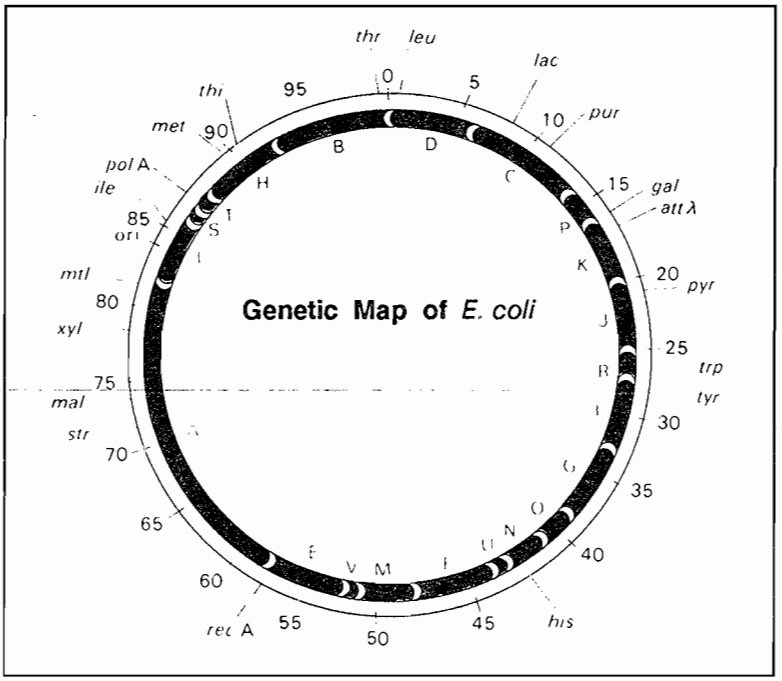
By Sally Hunsucker

Undergraduate students are able to get a taste of research through both Honors and non-honors research projects in the Biology Department. Although Honors research means more responsibility and a greater time commitment than non-honors research, many students feel that it is well worth the effort.

Carolyn Eaton works with both **Dr. Hoegerman** and a professor from VIMS, **Dr. Graves**. She is studying the mitochondrial DNA of spot, a saltwater fish. Although she finds it a big time commitment, she enjoys the research.

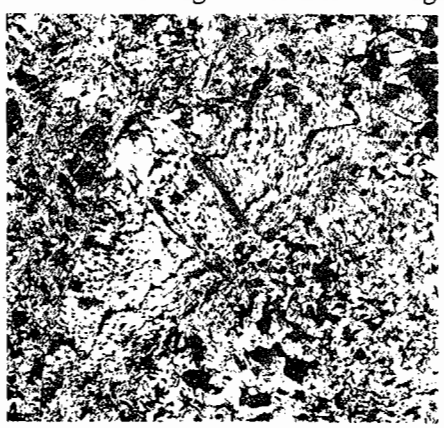
Patricia Gollin, who works with **Dr. Scott**, is using the transmission electron microscope to study mitosis in coralline red algae. She hopes that this will help establish new criteria for the classification of these algae. Gollin likes getting the detailed pictures of the cells and seeing the components that make up their structure.

Marion Lisa Jones is working with **Dr. Phillips** on a project to isolate suppressor mutations for the SHF gene in *E. coli*. She finds it a very useful lab experience.



Genetic Map of *E. coli*

Thu Le is studying frog spinal cord regeneration with **Dr. Guth**. She is trying to find a way to make the cells repair themselves or regenerate after damage. Le says that she has learned a lot from the experience and is now able to make pretty good slides of the spinal cord. She says that honors research is more responsibility than non-honors research, but that the thesis is yours, not the professor's.


Can you find the peppered moth?
from Grant and Howlett, 1988

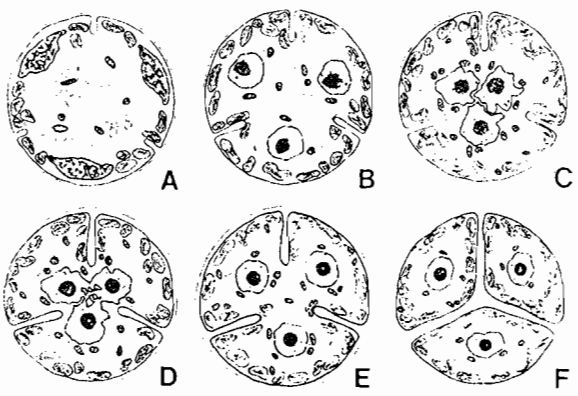
Matt May is also working with Dr. Guth, studying nerve regeneration in the central nervous system of amphibians. He finds the work fascinating because nerve science is exciting and everything discovered is a contribution to science. May has published papers in both his honors and non-honors research courses; he approached both in the same way.

Mohamed Noor is studying *Biston betularia* moth larvae with **Dr. Grant**. The larvae are either green or brown in color, depending on the type of plant they live on. Noor is attempting to find out when their color becomes permanent by moving them back and forth between willow and birch leaves. He likes research on processes that actually occur in nature.

Steve Rottenborn, who is working with **Professor Beck**, is studying shore bird communities in agricultural fields on the Eastern Shore. He is concentrating on the associations between the species of shorebird and the cover type. He says the best thing about the research is an excuse to be on the Eastern Shore while doing something that is worthwhile.

Stephen Stanziale is working with Dr. Guth. He is studying the control of local factors and cell body priming on the regeneration of peripheral nerves in rats. Stanziale says that the experience has been interesting and he thinks it is important to have one-on-one faculty attention.

Elizabeth Wolff is conductng a descriptive study of a hardwood forest with **Dr. Stewart Ware**. She finds that going out in the woods and collecting the data is the most fun, and is eager to see everything come together when the data is analyzed. However, she is not too excited about actually writing the final paper.



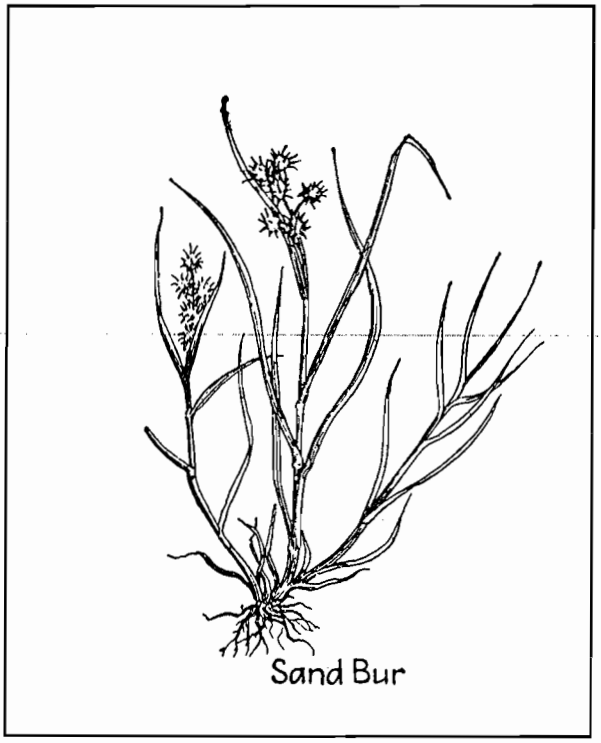
Movement of nuclei in ceramialean algae.
from Scott and Broadwater, 1990

Diana Zombek is working with Dr. Phillips to construct a mutant of *E. coli* having two heat shock proteins that are expressed conditionally. She will than study these heat shock proteins in the bacteria. She had to learn that *E. coli* are not as easy to manipulate as a textbook would lead you to believe. Despite some setbacks, Zombek says she enjoys the research.

Graduate students in the Biology Department also pursue a variety of research topics. *(continued on next page)*

Craig Bailey worked with Dr. Scott to study the characteristic ways that coralline algae cells divide and how much nuclear DNA different species contain. Bailey defended his Master's thesis on April 17th. Because the same species of algae can look very different, it is hard to use morphological characteristics to classify algae. Division is highly conservative, and Bailey hopes to use these differences to classify the algae.

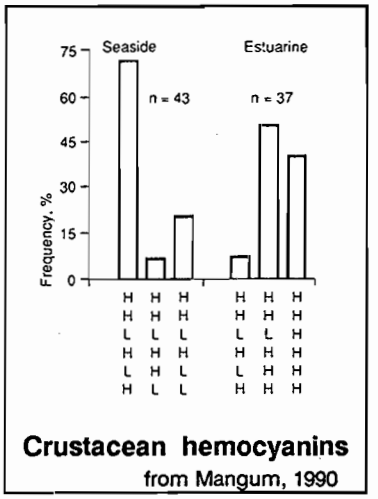
Tim Boyer, who is working with **Dr. Terman**, is studying female reproductive inhibition in the white-footed mouse, *Peromyscus leucopus novebaracensis*. A previous study had found that when an adult female and a young female were in the same cage, the young female was inhibited from reproducing. Other studies found that this did not happen. Boyer repeated this experiment. His results seem to show little difference in the reproductive potential of the young female rats in the presence of the adult females.



Steven Goss is conducting ultrastructural studies of *Glaucosphaera vacuolata*, an algae. He is working with Dr. Scott to classify this species, which may or may not be a red algae. Goss is just beginning and is looking forward to using the electron microscopes.

Heather Jones is working with Dr. Ware and a professor at VIMS, **Dr. Silberhorn**. She is looking at interdunal plant communities at False Cape State Park. Jones is comparing the dominant plants at six sites to see if there is a difference. She likes the chance to get out of Williamsburg and go to the beach, but does not like the chiggers and other bugs she encounters.

Robin Parnell, working with Dr. Grant on the larvae of the *Biston betularia cognataria* moth, defended her Master's thesis earlier this month. These moths can have different colors which depend on the environment. Parnell was trying to find out whether the color of the larvae depends on what they eat or on what they see. The research was a big time commitment because the caterpillars needed to be fed every day.



Crustacean hemocyanins
from Mangum, 1990

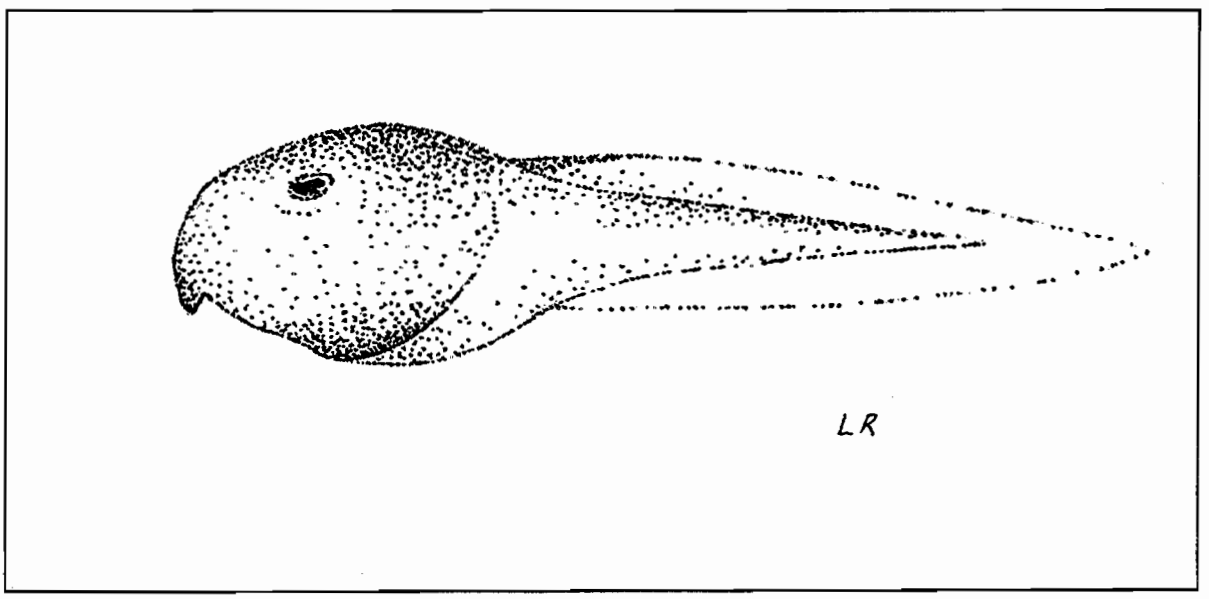
Dan Shelly will be working on the physiology of hemoglobin in croaker fish with **Dr. Mangum**. Croaker fish have polymorphic hemoglobin, and Shelly plans to use gel electrophoresis to determine the frequency of each morph in the population. He then plans to look at the oxygen carrying capacity of the morphs. Shelly enjoys the chance to interact with the professors at VIMS.

Craig Tumer is working wih Professor Beck on the nesting habitats of Great Blue Herons. He is looking at twelve colonies, noting the species of trees used, the circumference and height of these trees, and the height of the nests in the trees.

Christina Wilson is working with Dr. Scott on ultrastructural studies of the red algae *Rhodosorus*. She is studying the mitotic process. These algae undergo seasonal division, but the process is not well documented. Wilson loves working on the electron microscopes, which she describes as "taking a walk through cells." About her research in general she says "this is fun!"

Students interested in doing research should talk with faculty members as soon as they can. Or, if they don't know who to talk with, see the Department Chair who has a collection of reprints from various faculty for student use and a sample listing of the kinds of research students have published in the past.

As one biologist has said: "Mechanism can be inferred from observation, but it can only be proved through experimentation."



Immunology Course Has Molecular/Cellular Emphasis

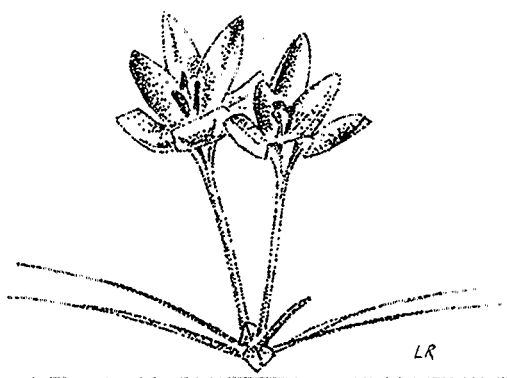
By Dan Stimson

Most biology students are aware that a major overhaul of the biology curriculum is now in its final stages of development. Many, however, are not familiar with one minor change in the curriculum which has been implemented already - unless they have experienced it firsthand or heard about it from friends, that is. The word circulating through the halls of Millington is that the Immunology course offered by our Biology Department is "challenging" and "difficult." But most enrolled in the course seem to agree that the class is a valuable learning experience.

Dr. Beverly Sher, who currently teaches the course, is in large part responsible for its transition from a medical emphasis to a molecular emphasis. According to Dr. Sher, the textbook formerly used as class reading material was the same as that used by the Medical College of Virginia. Required reading in Dr. Sher's class is a textbook used in immunology courses at Harvard and MIT. Dr. Sher, who matriculated at the University of Colorado at Boulder and received her Ph.D. at Caltech, is teaching the course according to the Caltech format. Consistent with Caltech instructional methods, Dr. Sher assigns problem sets in order to help students achieve a better understanding of lecture material. She claims that her experience with Caltech education convinced her that requiring students to complete problem sets, as opposed to having them memorize information, would be an effective way of promoting their "understanding of the molecular basis of modern immunology." When asked what insights she would like students to gain from the course, Dr. Sher replied that, in addition to attaining an appreciation for molecular immunology, her students should "be able to read *Nature's* News and Views section, and understand what is going on."

Dr. Sher suggested that many students initially expected the class to maintain its former reputation as a more medically oriented course, but that they seemed to adjust to the course's shift toward a more in-depth treatment of cellular and molecular immunology. **Erika Shugart**, a student in the class, appreciates the rigor of the course "because [students] learn something."

Shugart and other students have generally expressed approval with the course's new molecular emphasis and with Dr. Sher's teaching style. Shugart conceded that although she found the assigned problem sets difficult, they were quite effective in reinforcing her understanding of class material. **Don Doherty**, another student in the class, admitted, "It's a really difficult class, but anyone who takes it is going to have a good appreciation of modern experimental methods in immunology."



Pre-Med Students Gain Experience At Williamsburg Hospital And At First Med

By Laura Romano

While most Biology majors delay in choosing a specific career path, there are others who are already acquiring invaluable work experience. In particular, several students with an interest in medicine are volunteering at the local Williamsburg Community Hospital and/or participating in William and Mary's Shared Experience Internship Program.

The Shared Experience Internship Program introduces students to a professional environment where they may better assess their aptitude and interest in a specific career. Students considering Medical School may apply for an internship at First Med, a minor emergency care center in Williamsburg. Successful applicants are required to work approximately twelve hours per week for eight weeks.

As is the goal of a Shared Experience Internship, "First Med is a good place to get hands-on experience," claims **Danielle Curitore**. Although her primary function as an intern is to observe, Curitore has learned various techniques such as identifying infections and reading blood pressure. Furthermore, she has learned to manage some of the equipment. Curitore hopes that the experience will contribute towards her future as a physician.

In addition to providing practical work experience, an internship at First Med may also be emotionally rewarding. Sometimes discouraged by the difficulty of the classes required for a Biology major, **Kristen Albright** often doubts her ability as a physician. However, "seeing the doctors {work} has been motivational," claims Albright. For junior **Yoonah Kim**, an internship at First Med has yielded self-confidence. Kim is excited about the "potential to take on more responsibility" as the semester proceeds.

Not only does Albright participate in the Shared Experience Internship Program, but she volunteers at the Williamsburg Community Hospital as well. Her duties at the hospital include making up beds and assisting the nurses. Senior **Hugh Berckmueller**, who volunteered at the hospital last year, performed similar tasks and even prepared surgical trays. Berckmueller suggests that volunteering at the hospital is "good experience with what a hospital is like...before going to Medical school." He will attend Cincinnati Medical School next fall.

As an intern or hospital volunteer, students may explore an interest or verify a career choice. Perhaps more importantly, however, their work is emotionally satisfying. "I always walked away with a good feeling," says Berckmueller.

Biology Class of '92 Faces Life After Millington With Confidence

A number of seniors have shared their plans for next year with **THE NICHE**. If you are in the Class of '92 and did not respond to our request, please let us know what you will be doing and send us your address so we can put you on the newsletter mailing list next year. Good luck to all our graduates!

Amanda Allen will be going to graduate school, but hasn't decided where yet. **Diana Zombek** will also be in graduate school, in her case the Ph.D. program in Biology at University of California at San Diego. The University of Southwestern Louisiana's graduate program will welcome **Jonathan Akin** this summer. **Shelly Miller** will be attending the University of Pittsburgh Program in Ecology and Evolution. **Sarah Blackstock** will be working on her Ph.D. at Carnegie Mellon.

Patty Gollin will be attending graduate school at Washington University in the Program in Molecular Cell Biology and Biochemistry, Division of Biology and Biomedical Sciences. **Kimberly Pieslak** will be in the Ph.D. program in the School of the Environment at Duke.

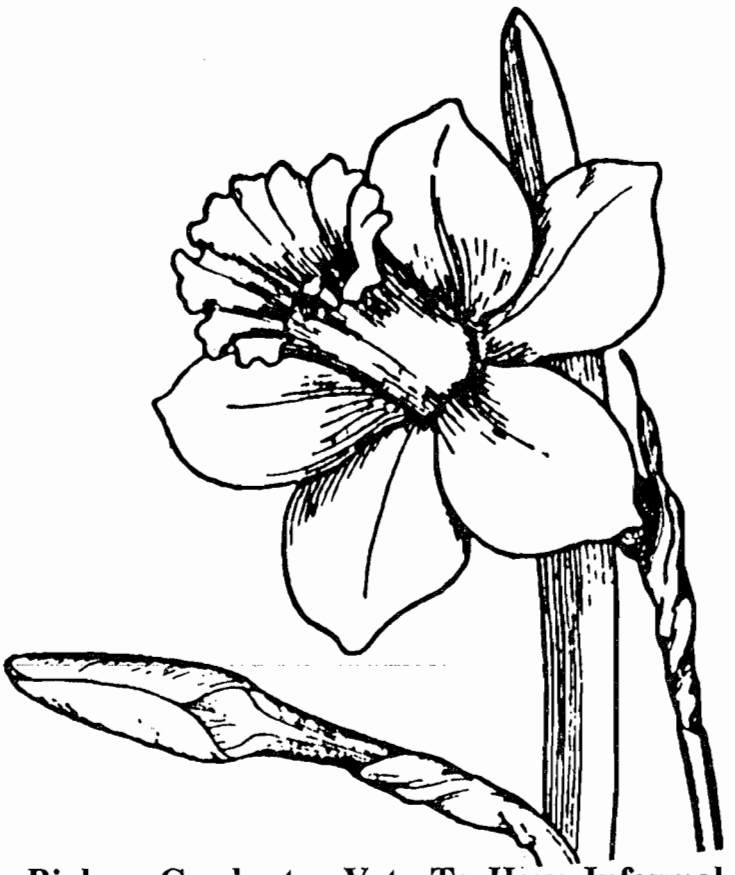
Brandon Brooks will be working at animal clinics, taking a year off before vet school. **Alyssa Thompson** will also be working in a veterinary hospital and taking courses in preparation for vet school the following Fall. **Angela Wonsettler** will be spending a Year on Three Seas doing marine biology and taking courses at Northeastern University, Friday Harbor in Washington state, and Discovery Bay in Jamaica. **Heather Rupp** will also be actively pursuing a career in marine biology with plans to attend graduate school in a year.

Meenu Talwar joins an increasing number of our graduates who go on to law school, Georgetown in this case. Graduate school in microbiology and immunology at Medical College of Virginia is **Charlene Johnson**'s plan. **David Limbrick** will also be at MCV working in molecular genetics in the Neurology section. Working in D.C. will occupy **Annikki Stierna**.

UVA Medical School will be **Kimberly Cathey**'s home for the next few years. **Shanna Verma** will be attending Eastern Virginia Medical School. **Thu Le, Tonia Farmer, Jill Podelco, Jennifer Isenhour** and **Matt May** will be working toward their M.D.'s at Medical College of Virginia. MCV's Dental School will be home base for **Melissa Nazareth**. **Kelly Browne** will be attending Baylor College of Medicine in Houston. Both **Gary Bennett** and **Lara Wheeler** don't yet know which medical school they will be attending. Robert Wood Johnson Medical School in New Jersey is **Nick DiProspero**'s destination. After working at NIH this summer, **Stephen Stanziale** will be attending Vanderbilt University Medical School this Fall.

Rebecca Robbins hopes to be teaching high school science. **Scott Madar** will be working on a Master of Health Science in Industrial Hygiene at Johns Hopkins. Norwalk, Connecticut will be home to **Ellen Huminski** who will be working at Stew Leonard's. **Adrian Argento** hopes to find work with a pharmaceutical company in Madrid, Spain. **Ruth Ann Brien** will be working for the Army Corps of Engineers in Norfolk.

And finally, like a few others probably, **Charity Kirby** says she's "unsure" what she'll be doing next year.



Biology Graduates Vote To Have Informal Diploma Presentation

Lengthy Reading Of Names Rejected By Seniors

The Department asked 103 seniors slated for graduation in May if they would prefer to have a formal diploma presentation ceremony in Millington Hall after the William and Mary Hall ceremony, or a less formal ceremony as the Department has followed in the past. Only 10 seniors voted to hold a formal ceremony. Therefore, following the wishes of students involved, the Department will continue with its punch-and-cookies reception and will not add an additional time-consuming ceremony in addition to the long ceremony held at the Hall.

We hope those few seniors and their families who wanted a formal presentation will enjoy the reception and the one-on-one giving of diplomas in an informal setting. The faculty know how important this occasion is to students and their families and friends. Everyone wants the day to be special for all.

THE NICHE

Department of Biology Student-Faculty Newsletter

BIOLOGY

WILLIAM & MARY

Adviser: Lawrence Wiseman

Co-Editors: Sally Hunsucker and M. Lisa Jones

Staff: Amanda Allen, Chris Beck, Laura Romano, Chong Shin, Erika C. Shugart, Dan Stimson, Natalie Weber, and Angie Wonsettler

THE NICHE

Department of Biology Student-Faculty Newsletter
College of William and Mary

Good Luck And Best Wishes To

Our Graduating Seniors

Our Graduate Students Who Have Finished Their Degrees

Our Four Retiring Faculty Members:

Professor Mitchell A. Byrd {36 years of service to the Department}

Professor Robert E. L. Black {33 years of service to the Department}

Professor G. R. "Jack" Brooks {30 years of service to the Department}

Professor Gustav W. Hall {29 years of service to the Department}

THE NICHE
Department of Biology
College of William and Mary
P.O. Box 8795
Williamsburg, VA 23187-8795

TO: