Conservation Biology Major

THE DEPARTMENT OF BIOLOGY continues to expand, and it’s exciting to see. One such expansion is the recent addition of our Conservation Biology major. Drs. Andy Madison and James Huggins, with their passions for wildlife and the environment that surrounds us, are the driving forces behind this program. Says Dr. Madison, “Conservation Biology is a science that examines the natural world around us, looking at the big picture of the inner workings of the environment and our impact on it.” As Christians, we have a God-given responsibility to understand and care for all of creation, and it is this idea that challenges us to work in the field of Conservation Biology.

Students in the program are given tremendous field experience as they travel to places such as Jekyll Island in southern Georgia and Great Smoky Mountains National Park in eastern Tennessee. Working with Dr. Huggins in the raptor rehabilitation center housed on Union’s campus also provides key experiences for students. Injured hawks, owls, falcons, and eagles are nursed back to health in this facility with the goal of releasing them back into the wild. Some birds, being too injured to survive in the wild, are used in education programs in schools and for other groups.

Research within the Conservation Biology program is also highly specialized. Most projects require field research such as conducting an inventory of small mammals at a state park, using radio-telemetry to examine the survival of box turtles, and much more. A wide variety of career paths are available to those with a Conservation Biology degree. Graduate level degrees are often required in addition to the Bachelor’s degree, which provide students the opportunity to continue on in such diverse career paths as wildlife ecology, policy coordination, private land conservation, or conservation genetics. State and federal agencies, industry, and conservation organizations are the most frequent employers of those with Conservation Biology degrees.

We anticipate this being a challenging but very rewarding course of study. As you meet prospective students, please encourage them to consider our new Conservation Biology Major at Union!

Chair’s Corner

Whee! We thought moving into White Hall was a challenge (and it was!), but the work that has gone on since February 5th has been Herculean! The men and women who have worked extremely hard to construct the 15 new dorms, as well as repair Jennings Hall, deserve our thanks. But there have been many more exciting changes for Fall 2008, than just the building that’s going on. As we told you in the Spring, Mrs. Crosett retired at the end of last year, and we do miss her, but we are excited to introduce you to Mrs. Tamara Popplewel. Mrs. Popplewel is our new Instructor, and she has been teaching Bio 100 labs (non-majors biology) and Biology 112 labs (Introductory Biology for science majors), as well as overseeing teacher education, among other things. Read more about her in this issue. We also have a new Department Secretary, Mrs. Erica Tuns. We look forward to telling you more about her in an upcoming issue!

Another new beginning for Union is the start of the first class for the Pharmacy School. This has had a significant and growing impact on our department, as more students are arriving for pre-pharmacy courses. If you know any prospective students who are interested in pre-pharmacy, send them our way! In addition to our support of the pharmacy program, we are continuing to work on offering students a variety of opportunities for research projects. Learn more in this issue about one of these projects being led by Dr. Marc Lockett. We’ve also included articles on some of our previous students. I think you’ll find these to be encouraging and interesting. Union grads really do go on to do great things!

Additional growth to the program comes in the form of our Conservation Biology Major headed up by Drs. Andy Madison and James Huggins. Both of these faculty members have a passion for what they do and student interest continues to grow as they hear of this opportunity. We are also looking forward to hiring a new faculty person to help with the Conservation program and a second new faculty member to teach immunology and similar courses.

And there’s much more! We’re excited about the upcoming school year, and would love to invite you to add comments and details on the pictures that have already been uploaded.

Mark Bolyard

Non-profit Org. U.S. Postage PAID Permit # 608 Jackson, TN
Mrs. Tamara Popplewell

THERE ARE MANY NEW FACES in the Biology Department this year with a record number of incoming freshmen biology majors. One such face is Ta-

mara Popplewell. No, she is not a new student, but the newest faculty mem-
ber of the Biology Department. She has taken on some of the responsibilities of Mrs. Crossett, who retired earlier this year. Mrs. Popplewell graduated from Union University in 1998 with a double major in Biology and Psychology. She also received her MAEd from Union and has additional graduate course work at Mississippi State University in General Biology. For the past nine years, she taught Biology classes at Milan High School. She has now returned to Union as an Instructor of Biology and will be teaching general biology labs and methods courses for those seeking secondary education licensure.

While at Union, Mrs. Popplewell met her husband, Robin Popplewell, a 1997 graduate of Union University. They have been married for ten years and have an eight year old son, Davis, who already loves Wildlife Biology. Mrs. Pop-
plewell is a member of West Jackson Baptist Church where her husband serves as Minister to College Students. When asked what she hopes to ac-
complish at Union, she said, “I want to foster a love for biology in my students and help them better see God’s hand in designing what it is we are studying—by integrating faith and learning.” She went on to say that she wants her students to “see biology in a way that they have never seen it or understood it before.”

Mrs. Popplewell said that she knows her spiritual gift is teaching and that her passion is for biology. She said that she knows God has called her to this mission field of college students and that she is looking forward to a future at Union.

Jonathan and Melissa Gray

“THE MIND OF MAN PLANS HIS WAY, but the Lord directs his steps.” These words from Proverbs 16:9 are how Jona-
than Gray chooses to describe the path his life has taken. Jonathan graduated from Union University in 2000 with a major in biology. Looking back, he asserts that he was well-prepared academically for a field that involved molecular biology and ge-
etics. As a freshman, he hoped to pursue in cancerous cells. While working at St.

Jude was a unique opportunity, Jonathan found some factors that conflicted with his faith. The lab he worked in was doing experiments with Human fetal retinae from aborted fetuses at different develop-
mental stages, and while he understood the importance of having it to compare to retinoblastoma samples, he did not like working with aborted human fetuses. Also, his faith was challenged when he included Colossians 3:22-23 to describe his work ethic on his self-
evaluation during his annual performance review and was asked to remove it, being told it was inappropriate.

In 2006, he joined Transnetyx, Inc. in Cordova, TN as an Assyay Design Specialist. There, he uses molecular diagnostics to screen for genes of interest. Transnetyx has markets all over the United States, as well as in Europe, and performs genotyping using high-throughput automation. Jonathan currently resides in Collierville with his wife, Melissa Gray, who also graduated from Union University with a major in chemistry.

Dr. Marc Lockett

Assistant Professor of Biology at Union University, is seeking to involve students in research on parasitism and blood coagulation. It has been shown that some parasites, such as ticks, mosquitoes, and biting flies, have inhibiting blood coagula-
tion in their salivary glands to assist in feeding. These inhibitors not only assist the organism during feeding, but have also been used clinically to control blood coagula-
tion.

Dr. Lockett, along with Dr. James Hug-
gins, University Professor of Biology at Union University, is involved with a proj-
ect to study hippoboscid flies, which infest owls of West Tennessee. There is very little research on the biology and ecology of these flies or the mechanism used during feeding. Biology major Jessie Daigle has begun working on this project and is developing protocols for the establishment of a stable salivary gland cell line derived from the hippo-
boscid flies with the hope of eventually isolating an inhibitor of blood coagula-
tion.

Dr. Lockett’s research background is in parasitology from Murray State in Kentucky where he completed his undergraduate and master’s degrees. During his Ph.D. research at the Uni-

versity of Tennessee at Memphis, he examined the structure of Tissue Factor Pathway Inhibitor (TFPI). TFPI is an inhibitor of the TF/Factor Va/Xa complex that initiates blood coagula-
tion. Dr. Lockett is planning to set up a longer-term host/parasite interaction research program. He is seeking to discover the extent to which the ability to inhibit host coagulation determines the host range in hematophagous parasites. In other words, if tick inhibi-
tors are effective on deer and less effec-
tive on rabbits, how does this aid the tick in selecting a host? He also plans to investigate novel inhibitors using various protein techniques. Dr. Lockett intends for this longer-term program to have opportunities available for a student to work for 3-4 years in research on a certain project. The goal is to have ongoing projects that students can plug into rather than developing their own short-term projects.

Dr. Mike Smith

Dr. MIKE U. SMITH, PH.D. (Class of 1972) was one of 486 scholars nation-
wide recently named as Fellows of the American Association for the Advance-
ment of Science (AAAS). Dr. Smith re-
ceived this distinction for distinguished research and leadership in teaching and learning genetics, problem solving, evolution, and the nature of science and for service in HIV prevention. Only seven people in education nationwide received this honor for 2008.

Mike is Professor of Medical Educa-
tion and Director of AIDS Education and Research at the Mercer University School of Medicine (MUSM), Depart-
ment of Internal Medicine in Macon, GA where he has been on the faculty since 1985. He is also an adjunct professor of the Emory University Center for AIDS research in Atlanta. Mike also recently raised money and arranged for a ship-
ment of $250,000 of medical supplies to be sent to the Baptist Hospital in Sanjiva, Zimbabwe. Dr. Smith visited Baptist hospitals, seminaries, hospices, etc. in 2006 and established a program to send MUSM students to work in bush hospitals and clinics there as soon as the political situation stabilizes.

Mike is currently involved develop-
ing a program to teach youth with HIV to be peer counselors for other HIV+ you-
teen. He is also the lead investigator in a program sponsored by the Centers for Disease Control and the Indian Health Service to revise a peer educator train-
curriculum he developed earlier for HIV/STD prevention among rural youth. The new curriculum, called Na-

tive STAND (Students Together Against Negative Decisions), will be tailored for Native American youth across the U.S. Mike has one son, Art, who is in the U.S. Army Military Police and stationed in Korea. Mike has one grandson, Caleb Michael, born June 26, 2008.