PATHOLOGY inSIGHT

Alumni Bulletin of Wake Forest University School of Medicine Department of Pathology

THE FALL EDITION

VOLUME 1, ISSUE 2

OCTOBER 15, 2007

Dr. Buss and Dr. Hartz retire

Dr. Buss

Dr. David Buss and Dr. John Hartz retired this year. Both specialized in surgical pathology and hematopathology, and both served in the Navy before joining the department's faculty.

Looking back on his 30 years here, Dr. Buss noted that it was "time to let the younger people take over." Over the years he's seen steady changes in methods and technology that have led to more specific, better diagnoses – as well as improvements in the treatments available once a diagnosis is made.

While Dr. Buss initially pursued surgical pathology because he preferred it over the autopsy service, Dr. Hartz had decided on surgical pathology and hematopathology from his earliest medical training.

After earning his MD and completing an internship, Dr. Hartz earned a PhD in Biochemistry before completing his pathology residency. He got his first faculty position here 33 years ago. He has been here ever since, and is glad to have settled here. "We've enjoyed living in a smaller city," he said. "It's a nice place to raise a family."

Dr. Hartz is happy to have chosen a teaching career over a private practice. "I've never been very money-oriented," he said. He also noted that anatomic pathology can be "sort of a lonely business," and regarded being around colleagues and residents one of the more pleasant parts of the job.

Dr. Hartz

Neither Dr. Hartz nor Dr. Buss has specific plans for retirement; both think it's "too soon to tell" what they'll want to do once the novelty of it wears off and the details are taken care of.

"Everything changes!" Dr. Hartz observed. He's looking forward to spending more time swimming and listening to music.

Four new faculty join department

The department appointed three new Assistant Professors in Anatomic and Clinical Pathology, and one new Instructor in Comparative Medicine:

Dr. Grier

Dr. Laudadio

Dr. Lewis

David D. Grier, MD, completed his MD at the Medical University of South Carolina, followed by a pathology residency and fellowship in hematopathology at the University of Florida.

Jennifer Laudadio, MD, a Wake Forest graduate ('98), also earned her MD at the Medical College of Georgia, and completed a pathology residency at the Medical University of South Carolina as well as a fellowship in Molecular Genetic Pathology at Oregon Health & Science University. She is interested in the development and use of molecular diagnostics to complement surgical pathology and hematopathology.

Zachary T. Lewis, MD, completed his residency training and a fellowship in hematopathology here after earning his MD at Mercer University School of Medicine in Macon, Georgia.

Jennifer Cann, DVM PhD, (not pictured) was appointed Instructor of Pathology (Comparative Medicine). She completed her DVM at Virginia Tech in Blacksburg, VA, and earned her PhD in the Molecular and Cellular Pathobiology (MacPath) Program here.

INSIDE THIS ISSUE

SPECIAL POINTS OF INTEREST:

- *Dr. Michael Beaty was promoted to Associate Professor of Pathology*
- *New buildings are going up at the Friedberg Campus to house non-human primates.*

More about the $3M Primate Center facility expansion in our next issue.

New house staff arrives...

Dr. Sarah M. Eakin recently graduated from Drexel University College of Medicine in Philadelphia, where she was president of the Pathology Interest Group, a peer tutor, an AOA member, and worked for the Streetside Health Clinic. She and her husband, Marc, have two dogs (Oscar, a pug, and Clifford, a cavalier King Charles spaniel).

Dr. Henry Douglas Edwards ("Bo") worked for several years in the sport aviation industry, but became interested in medicine while working as a hospice volunteer. He graduated from the Mercer University School of Medicine, where he was elected to AOA and the Gold Humanism Honor Society. Bo and his wife, Rebecca, have a new baby boy named Henry and a black Lab named Dude.

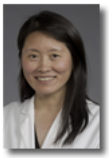
Dr. Citabria Manley studied chemistry as an undergraduate, and earned her MD at the Medical College of Georgia in Augusta. She loves to cook and considers the kitchen her "second lab."

Dr. Candace W. Horney completed her MD this year at the University of Texas Medical School at Houston, and married Dr. Kurt Schoppe, a new resident here in the Radiology Department. Her hobbies include travel, literature, antique collecting, interior decorating, arts & crafts, volleyball, basketball, tennis, and skydiving.

Dr. Brian J. Sutton earned both his MS (in biomedical sciences) and MD at the Eastern Virginia Medical School. With his partner, Steven, he enjoys hiking, cycling, movies, and spending time with family.

After earning his BA in English and then his master's degree in physical therapy, **Dr. Richard C. Taylor** worked as a physical therapist before attending Eastern Virginia Medical School to pursue his MD. With his wife and their three children, Dr. Taylor enjoys hiking, camping, and canoeing; he's also a photographer, and grows orchids.

Transferring fourth-year residents:



Dr. Zhao Li Lane is transferring here from the Johns Hopkins Medical Institution where she'd been a fellow in genitourinary pathology after completing three years of the pathology residency at the Cleveland Clinic. Dr. Lane was born in Shen Yang, China, and has lived in the US since 1992. She worked as an RN in surgical recovery at Moses Cone Hospital while attending UNCG as an undergraduate. She earned her MD at Wake Forest University School of medicine in 2003. Dr. Lane, whose hobbies include swimming and travel, is happily married with a two-year-old daughter named Madison.

Dr. Kim M. Thorner is joining our program as an HO-IV to gain an additional year of clinical pathology training. She completed her MD and did her pathology residency at SUNY Health Science Center at Brooklyn (Downstate Medical Center). In addition, she completed fellowships in surgical pathology and cytopathology at New York University Medical Center and worked for two and a half years as a pathologist at Lutheran Medical Center in Brooklyn. Her husband, Dr. Thomas Gaston, is a radiologist at Iredell Memorial Hospital in Statesville; they have two beautiful daughters.

Six months of medical technology training, along with great physical facilities and the availability of personal computers in private work areas, are among the reasons given by new residents for choosing WFUSM's Pathology Residency Training Program over other programs. More information about the Medical Technology Program is available online at http://www.wfubmc.edu/pathology/medtech/.

...while others move on

Best wishes to **Dr. Bryan Smith,** who transferred to Psychiatry, and to **Drs. Hong Li, Allen Perkins, Leigh Anne Mellen, Neil Patel, Daniel Sheehan, Amy Thorp, Terrill Tops,** and **Bonnie Michael,** who have all graduated.

And congratulations and 'welcome back' to **Dr. Kemery Gilbert** and **Dr. Ezra Ellis**, who are this year's cytopathology fellow and hematopathology fellow, respectively, as well as to **Dr. Lisa Kim-Shapiro**, who is now a research fellow with Dr. Mark Willingham; and to **Dr. Zack Lewis**, who is now Assistant Professor of Pathology here in the department.

New PhD candidates and Postdoctoral Research Fellows

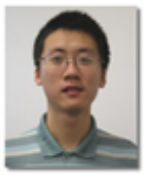
The Department of Pathology, via the Wake Forest University Graduate School of Arts & Sciences, administers two research-oriented degree programs, a PhD in Molecular and Cellular Pathobiology ('MacPath') and an MS in Comparative Medicine.

In addition, the department offers a number of other re– and post-doctoral training opportunities. The Section on Comparative Medicine offers residencies in Veterinary Pathology, Laboratory Animal Medicine, and a Nonhuman Primate Clinical Residency. The Section on Lipid Sciences offers an Integrative Lipid Sciences, Inflammation, and Chronic Diseases Training Program.


M. Fabritius


T. Lan


A. McDaniel


S. Tang

Welcome New Students

Four new students have matriculated into the PhD in Molecular & Cellular Pathobiology Program ("MacPath") this fall:. Pictured, left to right, above: **Melissa Ann Fabritius**, who graduated in 2007 with a BA in Biological Sciences from the State University of New York – Buffalo; **Tian Lan,** who received a BS in Biological Sciences from Fudan University, P.R. China, in 2007; **Allison McDaniel,** who graduated from Emory and Henry College in Emory, VA with a BS in Biology in 2006; and **Shuai Tang,** who received a BS in Biological Sciences from Fudan University in 2007.

And New Research Fellows

Kathryn Shelton, DVM, and **Jonathan Cohen, DVM,** joined Dr. Mike Adams' lab in the Section on Comparative Medicine.

Best Wishes to Recent Graduates:

Thomas A. (Alex) Bell III, PhD; his dissertation title is "The Role of Hepatic ACAT2 in Diet-Induced Atherosclerosis," and he is currently a Postdoctoral Fellow at the Scripps Institute in LaJolla, CA.

Monica R. Hall, PhD; her dissertation title is "Analysis of the Effects of 17β-Estradiol on Cholesterol Homeostasis and Inflammatory Response in Cholesterol Enriched Macrophages," and she is currently a Fellow in the Training in Education and Critical Research Skills (TEACRS) Program at Tufts University School of Medicine in Boston, MA.

Anny Mulya, PhD: her dissertation title is "Investigation of Initial Steps of Nascent High Denisty Lipoprotein Particle Biogenesis by ATP Binding Cassette Transporter A1." She is now a Postdoctoral Fellow at the Cleveland Clinic in Cleveland, OH.

Jennifer Cann, DVM, PhD was appointed instructor in the Section on Comparative Medicine, WFUSM. Her dissertation title was "Characterization of Atherosclerotic Plaque Composition and Effects of Estrogen Timing on Plaque Progression."

New AP/CP Pathology Fellows

This year's dermatopathology fellow is **Dr. Sarah N. Walsh,** she earned her MD at the University of Missouri-Kansas City School of Medicine. She completed a family medicine residency in 2002 and is board-certified in family medicine. She then began a four-year AP-CP residency at the St. Louis University School of Medicine, gaining her board certification in that specialty in 2006.

She then completed a Surgical Pathology Fellowship at Washington University School of Medicine/Barnes-Jewish Hospital in St. Louis. Dr. Walsh is an avid Cardinals fan, and enjoys watching sports, playing golf, running, and hiking with her dog Vegas. She's finished two marathons since 2005.

Dr. Jolene R. Clouse is this year's forensic pathology fellow. Dr. Clouse earned her MD at Indiana University School of Medicine in Indianapolis, and completed her residency at Ball Memorial Hospital in Muncie, IN. She's interested in hematopathology in addition to forensic pathology, and her outside interests include tennis, church, and baking.

Dr. Kemery Gilbert, who is the new cytopathology fellow, completed her residency training here last year, as did **Dr. Ezra Ellis**, who is the new hematopathology fellow.

You can learn more about all of our training programs, graduate programs, residencies, and fellowships on our website. Visit us online at http://www.wfubmc.edu/pathology/training/ for a complete overview with links to further information.

The View from the Department Chair

It's autumn once again, and we find ourselves surrounded by new faces and looking forward to the changes and transformations the future has in store for both the department and the school.

The restructuring – currently in progress – of the hospital and the school into a more integrated organization under the direction of a single governing board and CEO places the institution on a steady path in a rapidly changing health care environment.

Many of our faculty are part of the new Translational Science Institute (TSI), an NIH-funded program designed to foster opportunities for collaborative research and to translate research findings more quickly into clinically useful knowledge.

The WFU Primate Center, located at the Friedberg Campus and led by Comparative Medicine's Jay Kaplan, PhD, will be part of the TSI; the facility is expanding as our researchers continue to advance our collective understanding of animal models of human disease.

Within the department, we'll soon begin implementing Dragon Naturally Speaking, a computer-based dictation and transcription application, and we'll be acquiring an exciting new tissue processing system that is more rapid and provides almost continuous throughput as well as preserving DNA, RNA and proteins for molecular studies, because it does not utilize formaldehyde to fix the tissue.

The next issue of Pathology inSight will feature the full story on all of these changes. This issue includes introductions to new house staff, graduate students, and fellows, as well as news about our current activities as well as a timeline illustrating a very brief overview of Pathology and Comparative Medicine, and how they came to be one department (see pages 6-7).

-A. Julian Garvin, MD PhD

The Hawthorne Campus, above, in 1950; below, a more recent aerial view.

Research Highlights: Grant Awards & Publications

Dr. Dubey

Congratulations to **Dr. Purnima Dubey and Dr. Kazushi Inoue** of the Section on Tumor Biology, who were both awarded grants from the American Cancer Society this summer.

Dr. Dubey's award supports a four-year study ("Effector T cell function in androgen-independent prostate cancer") utilizing bioluminescent imaging techniques to follow "killer" T-cells to determine whether they migrate to prostate cancer and its metastases, and to assess whether efforts to stimulate the immune activity are successful. Use of the non-invasive optical imaging technique will allow for faster results with greater sensitivity and detail. An additional R21 grant from the NIH/NCI, "Non-invasive imaging of tumor-reactive T cell subsets *in vivo*," supports these efforts.

Dr. Inoue

Dr. Inoue's investigation, "Roles of Dmp1 in the Prevention of HER2/neu-induced Breast Cancer" uses transgenic and knockout mice to examine the role of a novel tumor suppressor gene named Dmp1 in the prevention of breast cancer in mice. The team expects to find that the Dmp1 gene is deleted or mutated in more than half of all human breast cancers, and to use their results to determine whether its function can be restored or enhanced to aid in the treatment and/or prevention of breast cancer.

Publications

A recent investigation conducted by pathology residents **Dr. Amy Parsons** and **Dr. Daniel Sheehan**, and dermatopathologist **Dr. Omar Sangüeza** revealed findings that suggest why some people with kidney failure develop nephrogenic systemic fibrosis (NSF), a rare tightening of the skin and other organs that can restrict patients' mobility: an ingredient called gadolinium, found in some contrast agents used during magnetic resonance imaging, may be involved. Thanks to their findings – among the first to suggest that exposure to gadolinium may lead to NSF – the U.S. Food and Drug Administration now requires a warning about this risk on the product labels.

The results of this pilot study suggest both a potentially likely cause and possible ways to treat NSF in the 2-4 percent of dialysis patients exposed to gadolinium who develop this rare disorder. An en-

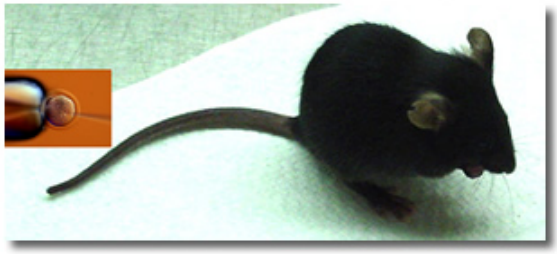
(Continued on page 5)

Transgenic Mouse Core Facility moves downtown

The Transgenic Mouse Core Facility, led by Lipid Science's Dr. Liqing Yu, has moved to the new downtown campus. The facility was established here in 2004 to provide investigators throughout the institution with access to state-of-the-art technologies for the generation of genetically engineered mice for their research. The new facility features cryogenic storage facilities and an expanded quarantine area for incoming mice.

The facility's staff, Lab Supervisor Tanya Paschke and Gene Targeting Specialist Dr. Feng Guo, work with Dr. Yu to develop strategies for production of transgenic and gene targeting constructs. They produce transgenic mouse lines via pronuclear microinjection of DNA into fertilized mouse embryos; conduct gene targeting in mouse embryonic stem cells; and produce the chimeric mice used for the creation of Knock-out/Knock-in mouse lines. They also offer embryo rederivation and can perform mouse genotyping using polymerase chain reaction procedures.

Learn more online at http://www.wfubmc.edu/tgmcore/



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zyme, transglutaminase-2 (TG2), normally involved in blood clotting and wound healing, appears to be more prevalent in skin biopsies of those with NSF. Drugs that inhibit the activation of TG2 may be of use in treating or preventing NSF in these patients. The research team also included Dr. David Sane, Cardiology, and investigators from Wake Forest's Dermatology Department and Duke University. Their results appear in the October, 2007, issue of the American Journal of Dermatopathology.

New research conducted on mice suggests why the commonly prescribed cholesterol-lowering drug ezetimibe (trade name Zetia®) is so potent – and poses a question for further study. The drug works in two ways to block the activity of a protein, known as NPC1L1, which helps the body absorb cholesterol into the bloodstream. Cholesterol normally enters the bloodstream via the intestine from the foods we eat, but it is also produced by the liver, which is involved in processing the cholesterol for the body's use. Mice specially bred to produce NPC1L1 in their livers absorbed more cholesterol, and drastically reduced cholesterol levels in the bile. When these mice were given ezetimibe, the cholesterol levels returned to normal, which suggests that the drug targets NPC1L1 in the liver as well as the intestine. And when it does, the cholesterol that cannot be absorbed is secreted into bile by the liver; too much cholesterol in the bile, though, can cause gallstones. Further research is needed, say investigators, to determine whether the drug increases gallstone formation in some people. They hope to conduct additional studies in non-human primates. The research team includes **Dr. Ryan Temel, Dr. Liqing Yu,** and **Dr. Lawrence Rudel** of Lipid Sciences; **Dr. Mark Willingham** of Tumor Biology; and investigators from the Mount Sinai School of Medicine and the Karolinska University Hospital in Stockholm.

Ongoing research by Comparative Medicine investigators led by **Dr. Thomas Clarkson** and **Dr. Jay Kaplan** helped raise important questions about hormone therapy addressed in a Women's Health Initiative study released in the New England Journal of Medicine last June. Research here at the WFU Primate Center indicates that stress in premenopausal monkeys can affect estrogen levels and may in fact set the stage for heart disease later in life.

While it is clear from research in both humans and non-human primates that hormone therapy is not a panacea for the prevention or treatment of cardiovascular problems, our researchers observed that estrogen replacement administered to monkeys as soon as they were made surgically menopausal resulted in about a 70 percent inhibition in the progression of coronary artery atherosclerosis. Administered later, after the disease had already begun to develop, it had no such effects. These findings were influential in development of the hypothesis that there is a "window of opportunity" during which hormone therapy does indeed reduce cardiovascular risk.

Alumni Notes

Alan "Rusty" Brady, DVM ACLAM, a former post-doc with Dr. Clarkson and Dr. Rudel, is Interim Director of Biologic Resources at the University of South Alabama (USA) Department of Comparative Medicine — or he will be until he leaves to take a faculty position at the University of Texas MD Anderson Cancer Center in the Fall of 2008, where he'll join fellow WFU alum **Chris Abee.**

Dr. Brady reports that his research training here at WFUHS in heart disease has been put to good use; they've begun developing a program at USA for a primate model of cardiomyopathy, and he'll be continuing that work at MD Anderson.

Dr. Kim A. Collins ('94) was recently in the news. On June 18, 2007, after nine firefighters perished fighting a fire at a Charleston furniture warehouse, she was called in as the forensic pathologist on the cases, and performed autopsies on the nine men she regarded as colleagues and friends. "It was difficult to remain detached and professional," she said. "We autopsied all nine cases in a single day. It was important to me that they stay together as the team that they were." Since all autopsies were completed by that night, the city of Charleston was able to have an official police and firefighter escort of the bodies

Dr. Collins

(Continued on page 7)

Pathology and Comparative Medicine: A Brief History

1939 – Bowman Gray School of Medicine of Wake Forest College established, in partnership with the North Carolina Baptist Hospital.

1946 – Robert P. ("Moose") Morehead, MD succeeded Dr. Carpenter as Chair of Pathology when Dr. Carpenter became Dean.

1957 – Thomas B. Clarkson, DVM, Assistant Professor of Experimental Medicine, was hired as director of the Vivarium (which later became the Animal Resources Program), located in the Gray Building.

1940 1950 1960 19

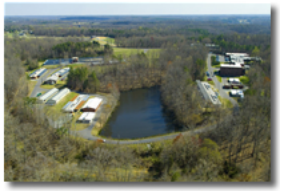
1935 1945 1955 1965

1941 – Coy C. Carpenter, MD becomes Chair of Pathology Department.

1948 – Dr. Robert W. Prichard opened the Cytologic (Papanicolau) Laboratory – the area's first such facility.

1959 – Dr. Clarkson was first awarded an NIH grant to train veterinarians in Laboratory Animal Medicine; recently renewed again, it's the longest-running training grant currently being funded by the NIH.

1964 – The department located and purchased the Friedberg Campus, a 110-acre site in Davidson County, to accommodate the growing population of research animals.



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to the funeral homes the following day.

After completing her residency here in 1994, Dr. Collins became a medical examiner in North Carolina, and in 1995 completed a fellowship in forensic pathology at the Medical University of South Carolina in Charleston, where she is currently a professor of pathology and co-director of undergraduate pathology education. Her numerous publications reflect her interests in the evidence of abuse and neglect found in the autopsies of children and the elderly. She is currently chair of the College of American Pathologists Autopsy Committee, Pathology/Biology program director for the American Academy of Forensic Sciences, and Forensic Section director for the International Academy of Pathology.

Dr. Collins lives with her husband, Federal Judge David Norton, on Wadmalaw Island. They share their home with three retired racing greyhounds, Excalibur, Otto, and Benny, as well as dachsund Callie, and Boykin Justice.

Let us know what you're up to!

Send an email to pathalumni@wfubmc.edu or drop us a note via snailmail. The address is on the last page.

1972 – Dr. Clarkson was appointed Chair of the new Department of Comparative Medicine. With Dr. Hugh Lofland of Pathology, he shared the directorship of the new NIH-funded Specialized Center of Research (SCOR), which incorporated multidisciplinary research activities in atherosclerosis and included faculty from both departments.

1989 – The Comparative Medicine Clinical Research Center (CMCRC) was established at the Friedberg Campus with funding from the NIH and other grants.

1997 – Following Dr. Prichard's death in 1995, A. Julian Garvin, MD PhD, was hired to replace him as Chair of the Pathology Department. Marbury B. Hopkins III, MD, served as interim chair. The Departments of Comparative Medicine and Pathology merged, reflecting their long history of collaborative efforts.

2007 – The CMCRC expanded and was renamed the Wake Forest University Primate Center.

70 1980 1990 2000

1975 1985 1995 2007

1973 – Robert W. Prichard, MD, became Pathology Department Chair.

1988 – Renovations to the Hanes building were completed, adding additional research offices, laboratory space, and other shared facilities for Comparative Medicine faculty. MICROMED, an electron and confocal microscopy lab used for diagnostic services as well as research throughout the institution, was also established.

2005 – The Transgenic Mouse Core Facility was established to provide a source of genetically altered mice for researchers throughout the institution.

2006 – Two new research sections were established in addition to Comparative Medicine: Lipid Sciences and Tumor Biology. Lipid Sciences, along with the Transgenic Mouse Core and additional ARP facilities, moved to the Downtown Campus in the Piedmont Triad Research Park.

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http://www.wfubmc.edu/pathology/alumni/

ONLINE GIFTS:

To make an online gift to Pathology, go to http://www.wfubmc.edu/onlinegift. In the designation field, please note "Pathology Discretionary Fund."

LEAVE A LEGACY:

You can make a lasting and profound impact on groundbreaking research, state-of-the-art medical education and outstanding patient care. Consider including Wake Forest University Health Sciences/Department of Pathology in your will, or naming us beneficiary of a retirement plan or insurance policy, or establishing a charitable annuity or trust that will pay you an income for life. For more information, please contact John Gillon, Senior Director of Gift Planning, Wake Forest University Health Sciences, 800-899-7128 or jgillon@wfubmc.edu.

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Inside Pathology inSight...

Inside our second issue of Pathology inSight, you'll find out all about this year's new residents, graduate students, and fellows, as well as about new and retiring faculty members. There are a couple of notes from alumni, and updates on some of the latest grants and publications.

Once again, please do write to us at the address at left; or send an email to pathalumni@wfubmc.edu — we welcome suggestions, questions, and especially submissions for the alumni notes page. And please also let us know of any upcoming address changes. As always, you can find us online at http://www.wfubmc.edu/pathology/alumni/.

-Nora Streed, editor

With special thanks to Janice Adams, Scott Evans, Marcia McCall, and Vickie Smith.