

Message from the Chair

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One of my major goals in 2012 is to expand the capabilities of our molecular diagnostics laboratory. Multiple

Department of Pathology faculty have been working closely with UAB Hospital leadership to develop a plan for new equipment, personnel, and laboratory space to meet the growing demand for molecular testing in microbiology, oncology, and hematology. These efforts require thoughtful integration with

our rapidly growing Division of Informatics and further development of our biorepository program.

Increasing attention is being focused on the discipline of Pathology and the important role of pathologists in patient management. In a recent editorial (Arch. Pathol. Lab. Med. 135:1531-1532; 2011), several Chairs of large academic Departments of Pathology stated "In a value-oriented health care system, the pathologists will then become the integrator of large,

complex data sets to continue to fulfill the classic central role of determining diagnosis, prognosis, and appropriate therapy". In partnership with UAB Medicine, we are taking the necessary steps to ensure that the UAB Department of Pathology becomes a leader in "next-generation" pathology and that our patients derive the maximum benefit from our initiatives.

Best wishes,
Kevin A. Roth, M.D., Ph.D.

Faculty Profile: Hyunsoo Kim, Ph.D.



Dr. Hyunsoo Kim is an Assistant Professor in the Division of Informatics who arrived at

UAB in November 2011 when the division was just implementing an informatics-driven personalized medicine component in the Department of Pathology. He is a bioinformatician and a computational biologist who is interested in developing methodologies and algorithms for finding new biological facts, and analyzing genomics data for helping biomedical research. He received his Ph.D. degree from the University of Minnesota, Twin Cities, in 2004 and postdoctoral training at Georgia Tech. in Atlanta and at Brigham and Women's Hos-

pital in Boston. In 2009 he joined the Center for Systems and Computational Biology at the Wistar Institute in Philadelphia, as a Staff Scientist. There, he worked extensively with next generation sequencing data analysis, namely RNA-seq and ChIP-seq, and small RNA-seq. Dr. Kim's current work aims to use next generation sequencing technology and information technology innovation to advance to a new era of personalized medicine and precision medicine for better health care. Towards this goal he first carefully aggregates biological knowledge building a large database designed to take full advantage of knowledge integration capabilities of semantic web technologies and resources, some already in place at the Divi-

sion of Informatics in the Department of Pathology. This database is then the key resource to analyze new biological data obtained as a part of collaborative work. For example, one can better identify interesting candidates that are related with high impact biological network components associated with specific diseases. Dr. Kim has experience on The Cancer Genome Atlas (TCGA) project, and has a particular interest in cancer diagnosis and treatment via computational approaches handling personal genomic data such as whole genome sequencing (WGS) data, RNA-seq, and small RNA-seq data. Although his earlier work was focused on brain tumors, i.e. Glioblastoma multiforme (GBM), he

Pathology In Focus Editorial Committee

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Cont'd...

Faculty Profile: Hyunsoo Kim, Ph.D., cont'd.

is now extending this experience to other cancers so that he can achieve a deeper understanding of the genetic basis of cancer. To this end he is building collaborative connections and memberships with UAB Comprehensive Cancer Center

(CCC), UAB Department of Computer and Information Sciences. Dr. Kim's laboratory is also developing a service capability in (1) next generation sequencing data analysis (RNA-seq, ChIP-seq, and small RNA-seq), (2) preliminary

computational cancer diagnosis with individual patient's genomic profiles (whole genome sequencing, RNA-seq, small RNA-seq).

Faculty Profile: Shannon Bailey, Ph.D.



We are delighted to welcome Shannon M. Bailey, Ph.D., as the newest member in the Division of Molecular and

Cellular Pathology effective February 1st, 2012. Dr. Bailey received her Ph.D. in Pharmacology from the University of Oklahoma Health Sciences Center, College of Medicine in 1996. Shannon completed her Postdoctoral research in the laboratory of Carol C. Cunningham in the Department of Biochemistry at Wake Forest University School of Medicine from 1996-1999. In 1999, she was appointed Instructor in the Department of Biochemistry and in 2000 was promoted to Assistant Professor in the same department. In 2001, Dr. Bailey moved her research to UAB where she served as an Assistant Professor in the Department of Environmental Health Sciences, School of Public Health until her promotion to Associate Professor in 2006.

Shannon's research program explores how genetic, environmental, and life-style factors influence the

initiation, progression, and severity of liver diseases and how liver disease may impact risk for cardiovascular disease. Her studies are focused on identifying a mechanistic link between the severity of alcohol and obesity-related fatty liver disease (i.e., steatohepatitis) and increased risk for cardiovascular disease. Her work has contributed to understanding how disruption in nitric oxide (NO) and hydrogen sulfide (H₂S) signaling, and changes in mitochondrial function, contribute to various pathologies including liver and cardiovascular disease as well as cancer. More recently, in collaboration with Dr. Martin Young in the Department of Medicine, Division of Cardiovascular Disease and Dr. Karen L. Gamble, Department of Psychiatry, Division of Behavioral Neurobiology, she has also started to investigate the role of disruption of cellular circadian rhythms in contributing to liver disease.

Shannon is currently Principal Investigator of two NIH R01 grants and one R21 grant and is co-investigator on three other NIH grants. She has also played an active role in the NIH peer review

process and is currently a full time member of the National Institute on Alcohol Abuse and Alcoholism Initial Review Group AA-1, Biomedical Research Review Subcommittee. Shannon is a member of the steering committee for the UAB Center for Free Radical Biology and has been active in the UAB School of Medicine strategic planning process as a member of the Oxidative Stress and Mitochondria work-group. She has also made substantial contributions to graduate education at UAB and is currently Chair of the Pathobiology and Molecular Medicine Curriculum Committee. Shannon is also on the Editorial Board of several journals including Free Radical Biology & Medicine, Liver International and the Biochemical Journal.

Please join us in welcoming Shannon to our department.

Accolades:



Jill Adamski, M.D. was appointed as a new member of the Faculty Advisory Council. Her term runs from 1/1/12 to 12/31/13.



Xu Feng, Ph.D. was appointed as a new member of the Faculty Advisory Council. His term runs from 1/1/12 to 12/31/13.



Andra Frost, M.D. was appointed as a new member of the Faculty Advisory Council. Her term runs from 1/1/12 to 12/31/13.

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Hyunsoo Kim, Ph.D. was appointed as a new member of the Faculty Advisory Council. His term runs from 1/1/12 to 12/31/13.



Rakesh Patel, Ph.D. was appointed Associate Editor for the American Journal of Physiology—Lung Cellular and Molecular Physiology. He was also appointed as a Senior Scientist for the UAB Nutrition Obesity Research Center (NORC).

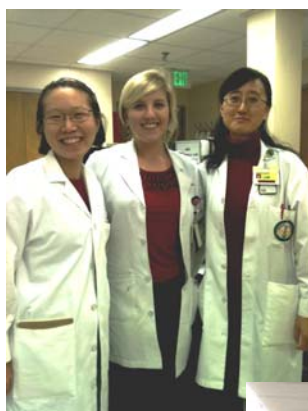


Ralph Sanderson, Ph.D. was appointed to the Graduate Biomedical Sciences Steering and Oversight Committee (GBS-SOC). This is a three year term.



Majd Zayzafoon, Ph.D. was appointed as Scientist for the UAB Nutrition Obesity Research Center (NORC).

Pathology Celebrates American Heart Month!



Go Red.....



Remember... February is
Heart Awareness
Month!



Where Are They Now? Ana Stankovic, MD, PhD, MSPH



Dr. Ana K. Stankovic received her residency training in Clinical Pathology at UAB in 1995-1998, and her fellowship training in Blood Banking and Transfusion Medicine from UAB in 1996-1997. She was Chief Resident (Laboratory Medicine) in 1997-98. Dr. Stankovic also received a Master of Science degree in Public Health from UAB in 2001. Previously, Dr. Stankovic had received her MD degree in 1980 and a PhD in Immunology in 1986 from the University of Belgrade in Yugoslavia. She then was a Senior Fulbright Scholar from 1988-1990 in the UAB Department of Clinical and Developmental Immunology, and a Postdoctoral Fellow from 1991-1995 in the OBGYN Division of Endocrinology.

After completing her graduate medical training and MSPH degree at UAB, Dr. Stankovic moved to Atlanta, Georgia where she served as Medical Officer at the Centers for Disease Control and Prevention from 1998-2003, giving her a unique perspective on laboratory quality at the national level. While at the CDC, she also worked as a hematopathologist at Quest Diagnostics as well as a Consulting Medical Director, Immucor, Inc., both in Atlanta.

Dr. Stankovic is currently the World Wide Vice President of Medical Affairs at Becton Dickinson (BD) Diagnostics - Preanalytical Systems. She joined BD in New Jersey in 2003. Within the Preanalytical Systems division, she oversees a

group of 60 associates, and additional groups in China, Japan and Europe. Her primary focus is on developing the medical/clinical strategy for the Preanalytical Systems business and overseeing various functional activities. She also is responsible for Global BD Regional Medical Affairs. Her work has given her the opportunity to visit laboratories all over the world and experience the different healthcare systems, and interact with many laboratory physicians and scientists. Her international work has confirmed for her the impact of the preanalytical phase on the overall quality of laboratory testing. Dr. Stankovic's primary goal is to assure that best practices are created and disseminated throughout the world, and that cost-effective products are developed that minimize the number of preanalytical testing errors.

Dr. Ana Stankovic is board certified in Clinical Pathology and Blood Banking/Transfusion Medicine by the American Board of Pathology. During her residency, she won the ACLPS Young Investigator Award in 1996, 1997, and 1998. She is a member of the College of American Pathologists, the Academy of Clinical Laboratory Physicians and Scientists, the American Association of Blood Banks, the American Medical Association, the American Society of Clinical Pathologists, and the Clinical Cytometry Society.

Since 2009, she has held the appointment of Associate Clinical Professor in the Department of Pathology at Vanderbilt University School of Medicine in Nashville,

Tennessee. She is the author of numerous publications and is currently focusing her research on improving the quality of laboratory testing and increasing awareness of the impact of the preanalytical phase on clinical results. Dr. Stankovic is a strong advocate for patient safety in healthcare and a champion for use of Lean and Six Sigma methods to improve clinical laboratory processes.

Dr. Stankovic reports that her favorite memory of her time in the Pathology residency program was the Residents Picnic in August of 1997 at Oak Mountain State Park, and of Dr. Alexander grilling in the park on the massive grill that he brought to the event. "It was so much fun!"

Dr. Ana Stankovic lives in Basking Ridge, New Jersey with her husband, Dr. Srdjan R. Stankovic.



Dr. Bruce Alexander grilling for I10 at the 1997 Residents' Picnic at Oak Mountain State Park. Dr. Srdjan Stankovic is helping.

From the Graduate Students:

Accolades/Awards:

Joshua Baalwa—while working with his mentor, has generated for the first time a panel of transmitted/founder HIV-1 subtype A, D and AD full length (9.7kbp) infectious molecular clones. These clones are the only ones of their kind worldwide and will be used to elucidate why HIV-1 subtype D infection results in faster disease progression and is more neuropathogenic compared to subtype A infection. Each of these 12 clones cost not less than USD 20,000.00 to generate and are in demand world-wide by HIV-1 scientists. A paper describing the generation and biology of these clones is being written and will form part of Joshua's thesis work.

Publications/Presentations:

Samantha Giordano—Dranka BP, Benavides GA, Diers AR, **Giordano S**, Zelickson BR, Reily C, Zou L, Chatham J, Hill BG, Zhang J, Landar A, and Darley-Usmar VM (2011) Assessing bioenergetic function in response to oxidative stress by metabolic profiling. *Free Radical Biology and Medicine* 51:1622-1635

Schneider L, **Giordano S**, Zelickson BR, Johnson MA, Benavides GA, Ouyang X, Fineberg N, Darley-Usmar VM, Zhang J (2011) Differentiation of SH-SY5Y cells significantly changes mitochondrial bioenergetics and the response to oxidative stress. *Free Radical*

Biology and Medicine 51:2007-2017. PMID: PMC3208787

Lee J, **Giordano S**, Zhang J (2012) Autophagy, redox signaling, oxidative and nitrate stress. *Biochemical Journal*. 441:523-540. Review

Angela Gullard—Angela's abstract for the American Association for Dental Research Annual Meeting (Tampa, FL; March 21-24, 2012) has been selected for Oral Presentation. The title of her presentation is "Altered TGF- β /BMP Signaling Associated with Radicular Dentin Dysplasia".

Ashlee Higdon—has had two manuscripts accepted for publishing: 1. "Cell Signaling by Reactive Lipid Species: New Concepts and Molecular Mechanisms" in *Biochemical Journal* accepted for publication December 2011

2. "Hemin causes mitochondrial dysfunction in endothelial cells through promoting lipid peroxidation: The protective role of autophagy" accepted for publication in *American Journal of Physiology (AJP)* January 2012

Niroop Kaza—**Kaza N**, Kohli L, Roth KA. Autophagy in brain tumors: a new target for therapeutic intervention. *Brain Pathol.* 2012 Jan;22 (1):89-98. (Review)

Kohli L, **Kaza N**, Lavalley NJ, Turner KL, Byer S, Carroll SL, Roth KA. The pan erbB inhibitor PD168393

enhances lysosomal dysfunction-induced apoptotic death in malignant peripheral nerve sheath tumor cells. *Neuro Oncol.* 2012 Jan 18. [Epub ahead of print]

Niroop also presented a poster entitled "Analysis of gossypol-induced cytotoxicity in malignant peripheral nerve sheath tumor cells" at the AACR-NCI-EORTC International Conference on Molecular Targets and Cancer Therapeutics in San Francisco, CA.

Lonnie Schneider—Jegga A, **Schneider L**, Ouyang X, Zhang J (2011) Systems biology of the autophagy-lysosomal pathway. *Autophagy* 7:5, 1-13.

Liang Q, Ouyang X, **Schneider L**, Zhang J (2011) Cathepsins reduce mutant huntingtin toxicity and aggregation. *Molecular Neurodegeneration* 6:37.

Schneider L, Giordano S, Zelickson BR, Johnson MA, Benavides GA, Ouyang X, Fineberg N, Darley-Usmar VM, Zhang J (2011) Differentiation of SH-SY5Y cells significantly changes mitochondrial bioenergetics and the response to oxidative stress. *Free Radical Biology and Medicine* 51:2007-2017.

Graduate Program Director:

Rakesh Patel, Ph.D.

Graduate Program Support:

Cynthia Brown

934-2848

From the Chief Residents:

As recruiting season is winding to a close, Amberly and I wanted to take this opportunity to extend sincere gratitude to all residents, faculty, and staff who have assisted us during this very important process. We are anticipating a fruitful Match Day in March, with yet another impressive group of first year residents joining us in July.

*Emily Gorman and
Amberly Nunez*
Chief Residents, 2011-2012

Once again, UAB Pathology residents continue to be actively involved in research. Numerous residents authored and/or co-authored abstracts selected for presentation at several national meetings. They are listed below with their faculty mentors. Great job and keep up the good work!

USCAP Meeting 2012

The United States and Canadian Academy of Pathology Meeting will be held in Vancouver, British Columbia, Canada March 17th- 23rd.

Taylor Deal: "The Prevalence of High-Risk HPV in Aerodigestive and Lung Cancers in HIV+ Patients" (Dr. Margaret Brandwein-Gensler)

Chris Kragel: "Evaluation of MAP-Kinase Pathway in Sinonasal Melanomas" (Drs. Patricia DeVilliers and Aleodor Andea)

Amberly Nunez: "EUS-FNA in the Diagnosis of Pancreatic and Peri-Pancreatic Lymphoma" (Dr. Isam Eltoum)

Zhiyong Ren/Rong Li: "Validation of Transcriptionally Active HPV in Salivary Mucoepidermoid Carcinomas" (Dr. Margaret Brandwein-Gensler)

Zhiyong Ren: "Progesterone Receptor and HER2 Status are Significant Prognostic Factors in Advanced Breast Cancer" (Drs. Gene Siegal and Shi Wei)

Amy Treece: "Association of Isolated Single Umbilical Artery with Maternal Health and Placental Pathology: a Retrospective Study of Over 6,500 Placentas" (Drs. Ona Faye-Petersen and Stephanie Reilly)

Jie Xu/Qian Dai: "African Americans with Oropharyngeal Carcinoma: Decreased Transcriptionally Active High-Risk Human Papillomavirus Contributes to Poorer Survival" (Drs. Shantel Herbert-Magee and Margaret Brandwein-Gensler)

ISDP Meeting 2012

The Annual Joint Meeting of the International Society of Dermatopathology will be held in San Diego, CA March 14th-15th.

Taylor Deal: "Comparison of Dermal Spindle-Cell Counts in Nephrogenic Systemic Fibrosis and Mimicker Entities" (Dr. Aleodor Andea)

George Garib: "S-100 Positive Epithelioid Dermal Lesions: Is It Melanoma or Not?" (Drs. Gene Siegal and Aleodor Andea)

Caitie Halverson: "Pachydermodactyly: A Case Report" (Dr. Aleodor Andea)

Chris Kragel: "Cutaneous Myoepithelioma and Mixed Dermal Duct Tumor: A Histologic Spectrum" (Dr. Aleodor Andea)

ASFA Meeting 2012

The Annual Meeting of the American Society for Apheresis will be held in Atlanta, GA April 11th-14th.

Evan Alston: "Parallel Leukapheresis and Extracorporeal Membrane Oxygenation in a Patient with AML and Symptoms of Severe Pulmonary Leukostasis" (Dr. Jill Adamski)

Jason Brazelton's abstract titled "Are Elevated Cardiac Markers Associated with Increased Mortality in Patients with Thrombotic Thrombocytopenia Purpura? Was accepted for oral presentation as the number 1 presentation in the Plenary Abstract Session. (Drs. Jill Adamski and Marisa Marques)

Matt Cain's abstract titled "Removal of Plasma Free Hemoglobin by Therapeutic Plasma Exchange in Patient with Anti-Jk3" has also been accepted for an oral presentation. (Drs. Jill Adamski and Marisa Marques)

Cont'd....

From the Chief Residents Cont'd:

ASCP Meeting 2011

The Annual Meeting of the American Society for Clinical Pathology was held in Las Vegas, NV, October 19th-22nd.

Amy Treece: "The Incidence of Two-Vessel Umbilical Cords and its Association with Other Fetal Anomalies: A Retrospective Study of Over 12,000 Placentas" (Drs. Ona Faye-Petersen and Stephanie Reilly)

CAP Residents Forum

Emily Gorman, and Chris Kragel are attending the CAP Residents Forum in Vancouver, British Columbia, Canada, March 17th.

Resident Publications

Emily Gorman: Gorman EF, Bag AK, Palmer CA. Metastatic Heman-gioblastoma: A Case Report. *Brain Pathology*. In-Press.

Amberly Nunez: Nunez A, Siegal G, Reddy V, Wei S. CD138 Expression in Osteosarcoma. *Am J Clin Pathol*. In-Press.

Future Fellowships

Check out what some of our residents will be up to after graduation...

2012-2013

Frank Anderson: Surgical Pathology, University of Kentucky at Lexington

Sam Borak: Hematopathology, University of Alabama at Birmingham

Qian Dai: Hematopathology, University of Alabama at Birmingham

George Garib: Hematopathology, Penn State University, Hershey, PA

Emily Gorman: Forensic Pathology, Emory University/Fulton County Medical Examiner, Atlanta, GA

Rong Li: Neuropathology, University of Alabama at Birmingham

Amberly Nunez: Cytopathology, University of Alabama at Birmingham

2013-2014

Frank Anderson: Hematopathology, University of Alabama at Birmingham

Emily Gorman: Pediatric Pathology, Children's Boston, Harvard University, Boston, MA

Chris Kragel: Cytopathology, Duke University, Durham, NC

Thuy Nguyen: Surgical Pathology, Stanford University, Palo Alto, CA

Zhiyong Ren: Surgical Pathology, M.D. Anderson, Houston, TX

Resident Socials

The residents continue to meet every few months for a resident

social and our next outing will be this month! I'm sure everyone is waiting in anxious anticipation to see where we will be dining next...

Residency Program Director:

C. Bruce Alexander, M.D.

Residency Program Support:

Karen Lewis

934-4060

Pathology Grant Awards:

M. BRANDWEIN-GENSLER

Adenoid Cystic Carcinoma Research Foundation
"Investigation of Adenoid Cystic Carcinoma and Transcriptionally Active Human Papillomavirus"
 \$44,000 10/04/11-10/03/12

JOHN CHATHAM

UAB/CCC/UCDC
"Stromal Interaction Molecule 1 (STIM1): A Novel Regulator of Insulin Secretion and Glucose Homeostasis"
 \$25,000 01/01/12-12/31/12

YABING CHEN

VA-IPA
 Yong Sun
 \$86,126 10/01/11-09/30/13

YABING CHEN

UAB/CCC/UCDC
"Seed Funding in Glucose Homeostasis"
 \$25,000 01/01/12-12/31/12

ROBERT HARDY

Siemens
"Validation of the ADVIA Centaur Tacrolimus Assay Using the ADVIA Centaur XP System"
 \$25,943 10/04/11-10/03/12

SHANTEL HEBERT-MAGEE

Minority Health & Health Disparities Research Center
"Prognostic and Therapeutic Significance of P53 Codon 72 Polymorphisms in Triple Negative Breast Cancer in African-American Women"
 \$30,000 01/01/12-04/30/12

ZDENEK HEL

NIH/Georgetown Univ.
"Glycans in Hepatocellular Carcinoma (APRC-HCC and AIDS Supplement)"
 \$65,925 09/14/11-07/31/12

ROBINNA LORENZ

Crohn's & Colitis Foundation of America (CCFA)
"Altered Handling and Sensing of Xenobiotics in Inflammatory Bowel Disease"
 \$386,100 01/01/12-12/31/14

UPENDER MANNE

NIH/CCC
"Role of miR-21 and miR-106a in Triple-Negative Breast Cancer Aggressiveness"
 \$100,000 09/01/11-08/31/13

JOANNE MURPHY-ULLRICH

American Heart Association (AHA)
"Calreticulin in Diabetic Vascular Disease"
 \$150,000 01/01/12-12/31/13

MOON NAHM

NIH
"Bacterial Respiratory Pathogens Reference Laboratory Support"
 \$250,400 01/01/12-12/31/12

JOHN SHACKA

Alzheimer's of Central Alabama (ACA)
"Regulating Clearance of Toxic Protein Species in Pre-Clinical Models of Alzheimer's Disease"
 \$10,000 05/01/12-04/30/13

CASEY WEAVER

NIH
"Factors Controlling Effector T Cell Maintenance in the Pathogenesis of Colitis"
 \$1,593,190 9/20/11-07/31/16

CASEY WEAVER

Crohn's and Colitis Foundation of America (CCFA)
"Regulation of IL-22 Induction From Th17 and non-Th17 CD4 T Cells"
 \$156,880 01/01/12-12/31/15

CASEY WEAVER

Crohn's and Colitis Foundation of America (CCFA)
"Mechanisms Controlling the Development and Function of IL-10-Producing Intestinal Regulatory T Cells"
 \$270,000 01/01/12-12/31/15

If anyone has any news items, accolades, etc. to be put in the quarterly newsletter, please send it to the Path In Focus e-mail address at:
pathinfocus@uab.edu.

Thank you.