THE UNIVERSITY OF ALABAMA AT BIRMINGHAM
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PATHOLOGY IN FOCUS

Vol 9 Issue 3, August 2015

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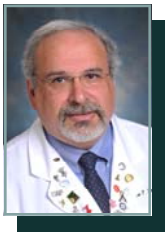
Message from the Interim Chair:



It's over 100 degrees with the heat index in Birmingham this week, yet fall is already in the air. TV ads are announcing back-to-school sales, newscasters have started their countdown to the first home football game and our new housestaff are practically veterans with a month of training under their belts.

Change is under way for UAB Pathology too. The normal flow of faculty comings and goings has been hit by a giant tidal wave with the announcement by Kevin Roth that he's leaving us for new opportunities in the "Big Apple." Although all of us are deeply saddened to see him go, we wish him the very best and thank him for leaving us in the excellent position we currently find ourselves as far as a large quality faculty, a superb physical plant and a nurturing environment. Dean Vickers has asked me to safeguard the place while he conducts a national search for the next Chair and I am pleased and honored to do so. I hope to have much to report to you in our next newsletter.

Meanwhile, please join with me in wishing Dr. Roth the best of luck in his new position and thanking him for all the good he has done for us.

With best personal regards,

Gene P. Siegal, M.D., Ph.D.

Message from the Outgoing Chair:

For the last seven years I have had the honor and privilege of serving as Chair of the UAB Department of Pathology. Effective September 1st, I will assume a new challenge and become Chair of the Department of Pathology and Cell Biology at Columbia University and Pathologist-in-Chief at New York-Presbyterian/Columbia University Medical Center in New York City.

I am very proud of what we've accomplished together at UAB and I am confident that the Department of Pathology will continue excel under new leadership. Thank you for your kindness and support during my tenure at UAB; I will forever treasure my time as a Blazer!!

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

Dept. of Pathology Website:
www.uab.edu/medicine/pathology

Newsletter E-Mail:
pathinfocus@uab.edu

Faculty Profile: Sooryanarayana Varambally, Ph.D.

Dr. Sooryanarayana (Soorya) Varambally is a new addition to the Department of Pathology in the Division of Molecular and Cellular Pathology. He joins the Department as an Associate Professor from the Department of Pathology at the University of Michigan, Ann Arbor, MI. Dr. Varambally obtained his Ph.D. from the Indian Institute of Science, Bangalore, India and completed his postdoctoral training in the area of programmed cell death from the Institut National de la Santé et de La Recherche Médicale (INSERM) unit at Hospital Broussias in Paris, France working with Dr. Srini Kaveri.

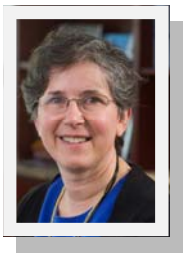
In 2000, he joined the University of Michigan at Ann Arbor, Michigan as a postdoctoral fellow in the laboratory of Dr. Arul M. Chinnaiyan. He started working on cancer genomics, biomarker discovery, integrative cancer biology, and therapeutic targeting projects. Working in association with Dr. Chinnaiyan, professor of pathology and urology, Dr. Varambally contributed to a clinically significant study that defined prognostic gene expression signatures for prostate cancer through the identification of several key biomarkers for prostate cancer progression. Published in ***Nature*** in 2001 and extensively cited, it has been well received by the scientific community and is regarded as a key work in the field. A subsequent follow-up study, also published later in ***Nature*** during 2002, focused on characterizing EZH2 as a specific biomarker of aggressive prostate cancer. This work was highlighted in Nature "News and Views."

Dr. Varambally was also involved in identifying the role of histone methyltransferase EZH2 in breast cancer progression and published that study in ***PNAS.*** Later he investigated the mechanism of deregulation of this key cancer gene which appeared in ***Science***. He has also participated in a study that identified androgen-regulated, recurrent gene fusions involving ETS transcription factors in prostate cancer, which is considered to be one of the causative molecular lesions of this highly prevalent disease. This study was published in ***Science*** and in 2007, the team involved in this discovery was awarded the Inaugural American Association for Cancer Research (AACR) Team Science Award. His work over the last 16 years led to multiple prostate, breast and lung cancer biomarker discoveries. He has published over 85 manuscripts. Many of his published articles are highly cited and appeared in journals such ***Nature, Science, Cancer Cell, PNAS*** and ***Cancer Research*** among others. His work has been cited over **18,500** times and he has an H-index of **52**. He holds multiple patents covering therapeutic targeting of cancer genes. His research contribution was recognized by the University of Michigan and he was awarded with the University of Michigan Research Faculty Recognition Award in 2009.

Dr. Varambally is currently the principal investigator on two R01's from NCI/NIH. His group at UAB is working in the area of Cancer Bioinformatics, Integrative Cancer Biology, and Targeted Therapy using prostate, breast, lung cancer and other common epithelial tumor models.

Beyond his research activities, Dr. Varambally is interested in photography and gardening.

Lorenz New Associate Dean for Physician Scientist Development:



In an effort to better foster an environment for recruiting top residents and junior faculty to develop their careers as clinician scientists at UAB, Dr. Robin Lorenz will take on a revised role as associate dean for Physician Scientist Development in the School of Medicine effective August 1.

As an associate dean, Dr. Lorenz will create the Physician Scientist Development Office, which will support and enhance the training of UAB physician scientists and will seek to intervene at the K-12, undergraduate and medical school levels to provide exposure, training and tracking for students interested in academic careers. She will also create a comprehensive program to help develop a culture for residents, fellows and junior faculty to pursue K awards and other mentored awards.

She will continue to oversee the Medical Scientist Training Program (of which she's been the director since 2006), Medical Student Summer Research Program (MSSRP), Summer in Biomedical Sciences (SIBS) Undergraduate Research Program, Preparation for Graduate and Medical Education (PARAdiGM) Program and Southeast Medical Scientist Symposium.

Dr. Lorenz received her undergraduate degree in biology from Stanford University and her M.D. and Ph.D. in immunology from Washington University in St. Louis. She completed residency in clinical pathology at Barnes-Jewish Hospital, while also doing postdoctoral research in gastrointestinal biology at Washington University in St. Louis. She joined the UAB Department of Pathology in 2002 and was named assistant dean for Scientist Education in March 2013.

Please join me in congratulating Dr. Lorenz on this new role as we prepare to expand the culture of clinician scientists at UAB.

Yours Sincerely,

Selwyn M. Vickers, MD, FACS
James C. Lee Jr. Endowed Chair
SVP of Medicine and Dean
University of Alabama School of Medicine

Spotlight on Administration: Michael Jordan

Mike Jordan is a Financial Officer I in the Pathology Finance office. Some of his responsibilities for the department include being the effort reporting officer, managing post-award grants, assisting investigators and their staff with accounting issues, serving as a liaison between Pathology and other University financial departments, and handling various other accounting and office duties.

Mike was born in Gadsden, AL, but was raised and currently still lives in Tuscaloosa; although most of his family is from the Montgomery area.

After receiving his BS degree in Accounting from the University of Alabama in 1992 (although he's an avid Auburn sports fan), Mike worked at various companies before coming aboard UAB in April 2000 as a temporary employee in the Office of Student Life until he was hired permanently as their Financial Assistant in August of that year. In addition to managing the financial and even some computer duties during his two years in Student Life, Mike handled other duties ranging from being an auditor for the annual UAB Talent Show to even being a participant in the annual UAB Springfest event as a "victim" in the water dunk tank.

Throughout his UAB career, Mike has worked as a financial person with other departments before coming to Pathology in February 2006. He started as a Financial Associate until he was promoted to his current position back in January 2012.

Mike feels as though he has finally found a true home here in Pathology. He says, "The people in Pathology have been more than just co-workers and associates. They have been like family to me and I've learned a great deal from working with them after all these years. I couldn't have asked for a better group of people to work with on an everyday basis."

In his spare time, Mike likes to exercise, travel, attend sporting events, learn the Italian language (although he admits to being an absolute beginner at this point), research various topics of interest, watch and play trivia regarding classic TV and movies, and much more.

Accolades:

Dr. Bruce Alexander was invited to give the 16th Annual Kornel L. Terplan Memorial Lecture at the University of Buffalo School of Medicine and Biomedical Sciences. The title of his talk is "Educating Medical Students, Trainees and the Public in the Science and Practice of Pathology and Laboratory Medicine.

Dr. Scott Ballinger was appointed as a member of the Systemic Injury from Environmental Exposure Study (SIEE).

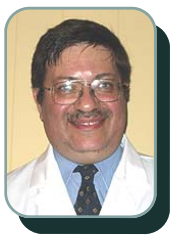
Dr. Beth Brown was Invited to the "Careers in Science Roundtable Leader" for IMMUNOLOGY at the 2015 American Association of Immunology meeting.

Dr. Brown was also an invited speaker, "Somatic Mutations and Multiple Myeloma – the Current State of Knowledge" at the Annual International Multiple Myeloma Consortium meeting held in Groningen, the Netherlands.

Cont'd...

Accolades Cont'd...

Dr. Shannon Bailey and Dr. Uduak (Udi) Udoh, presented scientific findings at the 38th Annual Research Society on Alcoholism Meeting, June 20-24, in San Antonio, TX. Dr. Bailey presented her laboratory's work on nitrated fatty acids and alcohol-induced liver injury in a symposium titled, "*Novel insights into inflammatory mechanisms of alcohol-induced tissue injury*". Later in the meeting, Dr. Udoh presented work from her dissertation project on the importance of the hepatocyte circadian clock and alcohol-induced mitochondrial dysfunction. Udi presented her findings in a symposium session titled, "*Molecular clockworks and alcohol: an integrative look into the role of central and peripheral clocks in alcohol use disorders and toxicity*." This symposium was organized and chaired by Dr. Bailey and Dr. Rebecca Prosser, University of Tennessee. In attendance at the session was Dr. Enoch Gordis, former Director of the National Institute on Alcohol Abuse and Alcoholism (NIAAA). Dr. Udoh was the 2014 NIAAA/RSA E. Gordis Doctoral Student Awardee.



Dr. Silvio Litovsky was accepted as a Scholar in the 2015 UASOM Faculty Scholars Program in Health Disparities and Culturally Responsive Care.

Dr. Marisa Marques was invited to give the Third Annual Klaus Mayer Lecture at Memorial Sloan Kettering Cancer Center. The title of her seminar was "Laboratory Medicine is a Team Sport: Play On!"

Dr. Lalita Shevde-Samant was invited to serve on the Editorial Board of two journals:
1) International Journal of Cancer (IJC). This is the official journal of the Union for International Cancer Control – UICC
2) Scientific Reports, a Nature Publication, that ranks 5th among all multidisciplinary science primary research journals.

Dr. Shevde-Samant was also elected as a mentor in the American Society for Cell Biology Faculty Research and Education Development Program (ASCB FRED) co-funded by the National Science Foundation (NSF). This program acknowledges her credentials as a mentor and a research scientist and involves the mentoring of a junior scientist in a year long program.

Dr. Raj Soorappan was invited to serve as a Co-Chair for Session X: Cardiac Gene Therapy of the International Society for Heart Research-2015 (ISHR) conference in Seattle, June 7 – 10, 2015. He co-chaired the session with Zejing Wang, Fred Hutchinson Cancer Research Center, University of Washington, Seattle. The session included very interesting topics related to cardiac gene therapy: GRK2 inhibition for heart failure, Ribonucleotide reductase gene therapy for heart failure, pacing the heart with genes and cells and Dystrophin/utrophin gene therapy for muscular dystrophy.

Dr. Gene Siegal was selected by the Texas Society of Pathologists as the Stembridge Lecturer for the 95th Annual Meeting of the Texas Society of Pathologists. This is an honor bestowed each year by the TSP to one of its speakers in recognition of their academic accomplishments.

Dr. Long Zheng has been appointed as the inaugural recipient of the Robert B. Adams Endowed Professorship in Pathology. This resolution was approved by the Board of Trustees in April, 2015.

Molecular Study Points to Possible Therapy for Autoimmune Disease:

A rare autoimmune disease creates sudden pain in the abdomen or the head, sending a patient to the emergency room with a potentially fatal condition. The pain comes from a multitude of blockages of tiny blood vessels, formed after the patient's own immune system somehow inhibits an enzyme that is vital to control clotting.

The syndrome is called thrombotic thrombocytopenic purpura, or TTP, and treatment involves exchanging three to seven liters of plasma each day, at a cost of $10,000 a day. This costly care may continue for several weeks or months.

Long Zheng, M.D., Ph.D., the Robert B. Adams Endowed professor and director of the Division of Laboratory Medicine at the University of Alabama at Birmingham Department of Pathology, wants to create a faster and more effective treatment for these patients. This has led Zheng and colleagues to molecular-level studies of the antibody that inactivates a blood enzyme, called ADAMTS13. ADAMTS13 recognizes and cuts a blood adhesion protein called von Willebrand factor. The inhibition of ADAMTS13 activity by the antibody in TTP patients allows ultra-large von Willebrand factor to form disseminated microvascular clots.

The ability of ADAMTS13 to recognize von Willibrand factor is exquisitely sensitive, somewhat like a fan who goes to a football game with 50,000 people and yet recognizes his cousin out of all the faces in the crowd. Similarly, the ability of the autoimmune antibodies in a TTP patient to recognize and bind to the patient's own ADAMTS13 enzyme is also exquisitely sensitive, picking only ADAMTS13 out of all the other possible "self" proteins in the body.

Learning the molecular details of these two recognition abilities will help Zheng subtly alter ADAMTS13, to produce a therapeutic enzyme that can elude recognition by the autoimmune antibodies, yet still retains its activity to cleave von Willebrand factor. Such an engineered enzyme could be given to TTP patients in the hospital to speed recovery and slash the cost of treatment.

In a paper published in the Proceedings of the National Academy of Sciences, "High Resolution Epitope Mapping by HX MS Reveals the Pathogenic Mechanism and a Possible Therapy for Autoimmune TTP Disease," senior author Zheng and colleagues report on those molecular details. The results reveal, for the first time, the mechanism of the inhibition of ADAMTS13 by autoantibodies and suggest an avenue for therapeutic intervention.

The researchers found that five small loops in the protein's amino acid sequence are necessary for the autoantibodies to bind to ADAMTS13. Cutting or substituting several amino acids out of any single one of the five loops prevented binding; furthermore, those small deletions in any single one of the five small loops also left the enzyme unable to cut von Willebrand factor.

"This was really surprising," Zheng said. "It's like a table with five legs. If you take one away, it should still stand, but somehow it collapsed. This suggests that you need the coordinated activity of all five."

Thus, it appears that the autoimmune antibodies in TTP patients inhibit the enzyme by physically blocking the recognition site of ADAMTS13 for von Willebrand factor. More importantly, analysis of autoantibodies from 23 more TTP patients found that most use the same binding site, suggesting that a modified ADAMTS13 enzyme by protein engineering may be able to help a wide range of TTP patients.

Details of the research

The five years of research for this paper included the labs of Don L. Siegel, M.D., Ph.D., an expert in phage display, and S. Walter Englander, Ph.D., father

Cont'd...

Molecular Study... cont'd...

of hydrogen exchange/mass spectrometry analysis to measure the protein-protein interaction regions of large proteins.

Both Siegel and Englander are at the Perelman School of Medicine at the University of Pennsylvania, where Zheng used to work before moving to Birmingham.

The researchers first isolated messenger RNAs that code single chains of variable region of the monoclonal antibodies from B cells of patients with acquired TTP. They used a technique called phage display to select the messenger RNAs that code specific antibodies that bind and inhibit ADAMTS13. These monoclonal antibodies are then expressed in E. coli cells, purified, and biochemically characterized.

Of these, three inhibitory monoclonal antibodies were selected for further study by hydrogen-deuterium exchange coupled with mass spectrometry. This technology uses amine hydrogen (in H2O) exchange with deuterium (D2O) on each amino acid residue except proline. After reaction was stopped, the protein was then cut into small pieces (or peptide fragments) and run through HPLC for separation and mass spectrometry for identification. Antibody binding sites were detected by their ability to block the hydrogen and deuterium exchange, as compared with ADAMTS13 that was unbound.

One of the three high-affinity probes selected by phage display was used for the competition experiments against polyclonal autoimmune antibodies from 23 TTP patients. The results demonstrate that this particular binding epitope is common among patients with acquired autoimmune TTP.

Besides Zheng, co-authors are Veronica Casina, Wenbing Hu, Jianhua Mao, Rui-Nan Lu, Hayley Hanby, Brandy Pickens, Zhongyuan Kan, Woon Lim, Leland Mayne, Eric Ostertag, Stephen Kacir, Don Siegel and S. Walter Englander, all of the University of Pennsylvania. Zheng was recruited to UAB from the University of Pennsylvania in February and is the inaugural holder of the Robert B. Adams Endowed Professorship in Pathology in the UAB School of Medicine.

--This article was written by Jeff Hansen and reprinted from the UAB News website.

From the Graduate Students:

Melissa J. Sammy—Awarded an NIH pre-doctoral training grant fellowship (T32) in Cardiovascular Pathophysiology (07/01/2015-06/30/2016) Title of Submission: The Role of Mitochondrial Genetic Background in Susceptibility to the Cardiometabolic Syndrome. Melissa is in the Ballinger laboratory.

Where are They Now?

Claudiu Cotta is a graduate of the University of Medicine and Pharmacy of Targu-Mures, Romania. As a graduate student in the Molecular and Cellular Pathology program at UAB he conducted research in Dr. Christopher A. Klug's lab, focusing on transcription factors involved in early B-cell development. His interest in hematopoiesis and in the techniques used to investigate it persisted during his residency in Anatomic and Clinical Pathology at UAB, motivating him to continue with a fellowship in hematopathology. To diversify his training, he left for Houston, Texas, where he spent the next two years at UT MD Anderson Cancer Center as a fellow. Currently, Claudiu is staff in the Hematopathology Section of the Pathology and Laboratory Medicine Institute at Cleveland Clinic, in Cleveland, Ohio. His main focus is hematopathology (a very busy service), including flow cytometry, molecular tests, and fluorescence in-situ hybridization. Since 2007, he has been the medical director of the immunohistochemistry lab. A significant part of his activity involves teaching-he is Associate Director for CP of the AP/CP residency program at Cleveland Clinic- and twice he was awarded by the trainees the John Beach Hazard Award for excellence in teaching.

When asked about his training, Claudiu always introduces himself as a proud UAB alumnus, and when teaching, he often quotes Drs. Reddy, Alexander, Siegal or Bell. The fact that his daughter was born in Birmingham only adds to this debt of gratitude for the opportunity to work and live in the friendly, stimulating environment at UAB. Every now and then, Claudiu reminisces the good old times with Dr. Xiuli Liu, another UAB graduate at Cleveland Clinic... especially during the snowy Cleveland winters!

Pathology Grants Awarded...

SCOTT BALLINGER
NIH
"Mitochondrial Genetic Background Influences Susceptibility to Atherosclerosis"
$75,672 7/1/15—6/30/17

JOHN CHATHAM
AHA
"STIMulating Stress: A Novel Role of the ER Ca2+ Sensor in STIM1 in the Adult Heart"
$101,192 7/1/15—6/30/17

JOHN CHATHAM
NIH
"Disruption of the Clock-GlcNAc Axis in Diabetic Cardiomyopathy"
$100,000 7/1/15—6/30/16

JOHN CHATHAM
UAB/SOM
"Protein O-GlcNAcylation as a Central Mediator of Metabolic-Induced Cardiovascular Complications"
$450,000 6/1/15—5/31/18

YABING CHEN
VA
VA-IPA "Kaiyu Yuan"
$110,703 7/1/14—6/30/16

YABING CHEN
NIH
"Molecular Signaling in Oxidative Stress-Induced Vascular Calcification"
$1,470,000 6/24/15—4/30/19

YABING CHEN
VA
VA-IPA *"Dongfeng Cao"*
$93,380 4/1/15—3/31/17

VICTOR DARLEY-USMAR
NIH
"Translational Bioenergetics in Patients with Alcoholic Liver Disease"
$385,876 5/1/15—4/30/17

ANDRA FROST
NIH
"Biomechanics of the Stromal Regulation of DCIS"
$351,698 7/1/15—6/30/17

ROBIN LORENZ
NIH/NIGMS
"Medical Scientist Training Program"
$3,615,795 7/1/15—6/30/20

Cont'd...

Pathology Grants Awarded Cont'd...

ROBIN LORENZ
CCFA
"Impact of Bacterial Stimulation of Antimicrobial Peptide Expression in P-glycoprotein Models of Colitis"
$2,500 6/1/15—8/24/15

RAKESH PATEL
NIH
"UAB Predoctoral Training Grant in Translational and Molecular Sciences"
$965,295 7/1/15—6/30/20

DENIZ PEKER
UAB/CCC
"Pilot Project"
$20,000 12/1/14—11/30/15

SOORYANARAYANA VARAMBALLY
UAB/CCC
"Regulation of Oncogenetic Tumor Suppressor Network Cancer"
$25,000 3/1/15—2/29/16

SOORYANARAYANA VARAMBALLY
NIH
"Regulation of Polycomb Repressive Complex 1 by EZH2 Regulated microRNAs in Cancer"
$305,025 1/6/15—3/31/16

ADAM WENDE
NIH/Georgia Regents Univ.
"Human DNA Methylation Signatures to Define Diabetic Cardiac Subtypes"
$100,000 10/1/14—9/30/15

CASEY WEAVER
CCFA
"IL-1 Mediated Regulation of the Th17 Developmental Program and Its Role in IBD"
$270,000 7/1/15—6/30/18

CASEY WEAVER
NIH
"Th17 Pathway Plasticity in the Pathogenesis of Inflammatory Bowel Disease"
$1,323,000 7/1/15—6/30/19

YANG YANG
International Myeloma Foundation
"The Role of Myeloma Cell-Derived Runx2 in Myeloma Metastasis: Focus on Bone Environment"
$80,000 1/1/15—12/31/15

LONG ZHENG
NIH
"Novel Therapeutics as Acquired Thrombotic Thrombocytopenic Purpura"
$748,745 2/1/15—5/31/17

From the Chief Residents:

We would like to welcome the new residents and fellows who joined our program in July. We are looking forward to a great year!

Chief Residents
Brandi McCloskey & Jessica Tracht

National Meetings and Publications:

National Association of Medical Examiners (NAME) - Dr. Matthew Cain will deliver a platform presentation titled "Tracking Drug Overdoses Using Google Fusion Tables" with Dr. Dan Atherton.

Dr. Matthew Cain will deliver a platform presentation titled "Identifying Errors in Forensic Autopsy Reports Using a Novel Web-based Program" with Dr. Dan Dye.

Dr. Matthew Cain will present a poster titled "The Utility of Screening for 6-MAM instead of Propoxyphene" with Dr. C.A. Robinson.

College of American Pathologists (CAP) - Dr. Virginia Duncan will present a poster titled "Primary Adenosquamous Carcinoma of the Colon in a Patient with Lynch Syndrome: A New Histologic Subtype Associated with Microsatellite Instability?" with mentors Dr. Todd Stevens and Dr. Shuko Harada

Dr. Jessica Tracht will present a poster titled "The Role of Ki-67 And PHH3 In Grading And Prognostication of Pancreatic Neuroendocrine Tumors: A Comparison Study" with Dr. Deniz Peker.

American Society for Clinical Pathology (ASCP) - Dr. Virginia Duncan will present a poster titled ""Primary Sellar Rhabdomyosarcoma Arising in Association with a Pituitary Adenoma" with mentor Dr. J. Robert Hackney.

American Association of Neuropathologists Annual Meeting—Dr. Alexander Feldman presented a poster presentation on "Tumor to Tumor Metastasis in the Central Nervous System" with mentor Dr. Rob Hackney.

American Association of Blood Banks Annual Meeting - Dr. Alexander Feldman will present an oral presentation on "AABB Abstracts Published into Full Manuscripts in Apheresis Research" with mentors Dr. Huy Pham and Dr. Lawrence Williams.

American society of Cytopathology (ASC) - Dr. Jessica Tracht will present a poster titled "Validation of Primary Human Papillomavirus Testing: A Retrospective ad-hoc Analysis of Screening Algorithms on Women Doubly Tested for Cytology and HPV" with Dr. Isam-Eldin Eltoum.

Dr. Vishwas Parekh published "EBV-related primary splenic lymphocyte-depleted classical Hodgkin lymphoma" in Journal of Clinical Pathology with faculty mentor Dr. Peker.

Dr. Vishwas Parekh published "Therapy-related B-lymphoblastic leukemia associated with Philadelphia chromosome and MLL rearrangement: Single institution experience and the review of the literature" in Pathology International with faculty mentors Dr. Reddy and Dr. Peker.

Dr. Vishwas Parekh published "Invasive renal angiomyolipoma with cytologic atypia: a diagnostic conundrum." in Austin Journal of Clinical Pathology with faculty mentor Dr. Shen.

Dr. Vishwas Parekh published "Mammary analog secretory carcinoma" in Archives of Pathology & Laboratory Medicine with faculty mentor Dr. Stevens.

Dr. Vishwas Parekh published "Hyperkeratotic variant of porokeratosis in a patient with Hepatitis C virus infection and a concomitant immunosuppressed state" in Dermatology Online Journal with Dr. Junkins -Hopkins, a faculty mentor during his external rotation at the Ackerman Academy of Dermatopathology, NY.

Resident Events:

We would like to thank Dr. Rebekah McIntosh for hosting our first resident social at her home. We appreciate the Pathology Department for supporting these events. It was a great time and great opportunity to meet the incoming residents and fellows. We would also like to thank the Department of Pathology for hosting our outgoing reception and wish all the graduating residents and fellows luck!

Residency Program Director:

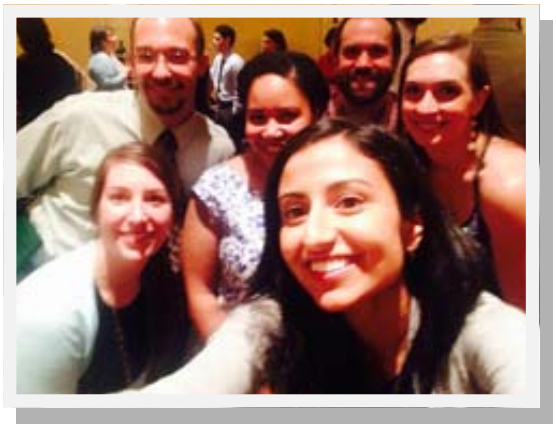
C. Bruce Alexander, M.D.

Residency Program Support:

Karen Lewis
934-4060

From the Chief Residents…

Pictures from the Outgoing Reception:



Group Selfie!

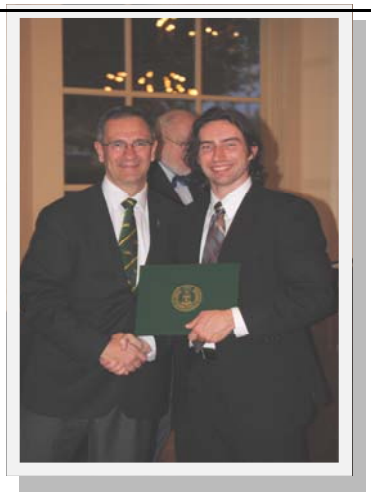
L to R: Dr. Long Zheng, Dr. Huy Pham, Dr. Marisa Marques, Dr. Ben Hill, and Dr. Lance Williams

Dr. Jason Brazelton and Dr. Bruce Alexander

Dr. Marissa Marques and Dr. Ben Hill

Chief Residents Dr. Brandi McCleskey and Jessica Tracht

Dr. Deniz Peker and Dr. Erik Kouba



Dr. Kevin Roth and Dr. Matt Cain

ACLPS 2016—A Must Attend Event!!

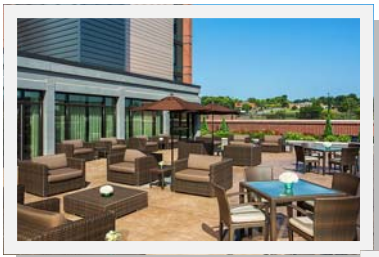
From June 2-4, 2016, our department will be hosting the 51st Academy of Laboratory Physicians and Scientists (ACLPS) meeting in "Uptown" Birmingham! The theme for the meeting is "Laboratory Medicine: The next 50 Years." As is customary at these meetings, there will be a variety of sessions for every area of interest and taste! In addition to showcasing our own faculty, we will have other local speakers as well as national and international experts discussing topics in all major areas of Laboratory Medicine such as:

1. 35 years of HIV infection with Dr. Michael Saag (http://www.positivethebook.com/)
2. ACLPS and the "Choosing Wisely" campaign: http://www.choosingwisely.org/about-us/
3. Anticoagulation monitoring in the 21st century
4. Diagnostic errors and the pathologist's role
5. Ebola preparedness in the clinical laboratory
6. Informatics and the future of Medicine
7. Molecular methods in Microbiology
8. New developments in thrombotic microangiopathies
9. Patient blood management (PBM)
10. 2016 ASFA guidelines

In addition, there will be 30-40 oral abstract presentations and a similar number of posters where trainees share their research with the attendees. On Thursday, as it has happened in the last several years, there will be free workshops on genomics, mass spectrometry, analytics and potentially others. If there is interest from former UAB residents and/or fellows, we could have a session designed for the needs of those in attendance, to discuss Lab Medicine topics and updates. Please email me at mmarques@uab.edu if you are planning to attend the meeting and if you would be interested in such a session on Thursday afternoon.

On Saturday morning, in addition to scientific presentations, there will be a special lecture by an outstanding young ACLPS member chosen to receive the Ellis Benson award. Every year, this talk is one of the highlights of the meeting.

Now for the fun stuff!
On Thursday evening, the opening reception will be a "Tailgate party" at the Westin, a brand new hotel in the recently developed district called "Uptown." If you are not familiar with it, check them at: http://www.uptownbham.com/. For the party, dress as if you were going to your alma matter's homecoming game and compete for "surprise" gifts and much recognition. All that while you enjoy our wonderful southern cuisine in the hotel terrace!



On Friday evening, we will have the awards ceremony for the Young Investigators as well as the preeminent members of the society during a banquet at the McWane Center. The whole museum will be open for us and there will even be a "surprise" IMAX movie!

For those who are fit or are trying to get there, there will be a 5K run on Saturday morning in downtown Birmingham. The proceeds of the run will benefit a local charity and prizes and more surprises will be in store for everyone that gets up early!

For Saturday afternoon, after the meeting wraps up at lunch time, there will be plenty of options to enjoy the city by visiting museums, playing golf, or networking with new and old friends at the Todd English Pub (http://www.toddenglishpub.com/locations.html), one of only two locations in the US (the other being in Las Vegas!).

Y'all have to agree with me that this is something you cannot miss!!! Start planning your vacation or family trip to Birmingham to attend the exciting program we are putting together to welcome you back (or again) to Birmingham!

Pathology Publications

Review paper accepted: **Wende AR**. Post-translational modifications of the cardiac proteome in diabetes and heart failure. Proteomics Clin Appl. 2015 Jul 3. doi: 10.1002/prca.201500052. [Epub ahead of print] PMID: 26140508.

Metge BJ, Mitra A, Chen D, Shevde LA, **Samant RS**. N-Myc and STAT Interactor regulates autophagy and chemosensitivity in breast cancer cells. **Sci Rep.** 2015 Jul 6;5:11995. doi: 10.1038/srep11995. PMID:2614640

Dr. Lalita Shevde-Samant published a peer-reviewed article in the journal Cancers. The article is titled "The Impact of Hedgehog Signaling Pathway on DNA Repair Mechanisms in Human Cancer." This was an invited article and is important in the field since there is no comprehensive review that summarizes the role of the developmental Hedgehog signaling pathway in regulating DNA repair and its impact on cancer.

Dr. Raj Soorappan presented a poster and published an abstract in the Journal of Molecular and Cellular Cardiology (ISHR-Supplementation) on "Nrf2 dependent rescue of protein aggregation mediated hypertrophic cardiomyopathy. **Authors**: Madhusudhanan Narasimhan, Cory Miller, Sakthivel Ramasamy, Jennifer Hong, Asokan Devarajan, Nancy Atieno, Christopher Davidson, Kevin Whitehead, John R. Hoidal and **Namakkal S. Rajasekaran**.

A joint review article authored by Pathology students and faculties of 3 laboratories has just been published online July 23 and will be in print August 1 in Biochemical Journal, covering an important concept regarding Keap1-Nrf2 signaling and autophagy in protection against oxidative and reductive proteotoxicity. Matthew Dodson, Matthew Redmann, **Namakkal S. Rajasekaran**, **Victor Darley-Usmar**, **Jianhua Zhang**: Biochemical Journal Jul 23, 2015, 469 (3) 347-355; DOI: 10.1042/BJ20150568

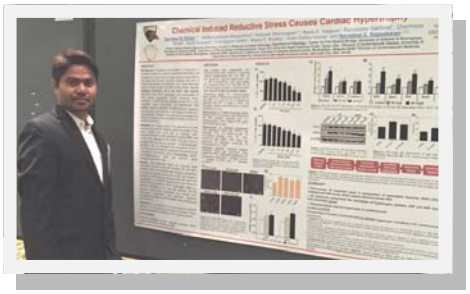
Molecular & Cellular Pathology News:

Timothy N Trotter, a GBS student in **Dr. Yang Yang's** laboratory, received the 2015-2016 Carmichael Scholarship Award for his academic achievement. The Carmichael Award is a very competitive award with only two GBS students selected for this award in 2015. This award provides an annual stipend of $23,000 to the awardee(s).

Helen Collins, Postdoctoral Scholar in Dr. Chatham's lab, was the recipient of an American Heart Association Post-Doctoral Fellowship which started July 1, 2015.

AHA-BCVS-2015 Conference: Dr. Raj and his lab members attended and presented in the American Heart Association – Basic Cardiovascular Scientific Sessions – 2015 (July 13-16, 2015) in New Orleans, LA.

Sandeep Balu Shelar, PhD



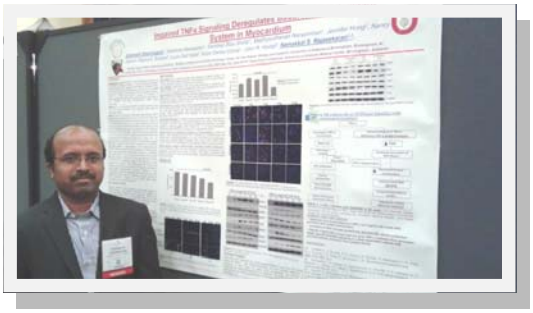
(Post-doctoral fellow): Our recent finding addressing the role of reductive stress in the cardiovascular disease was accepted to present in Basic Cardiovascular Sciences (BCVS) 2015 meeting in New Orleans. This meeting was organized by the American Heart Association (AHA) and is one of the key meetings focused on basic research in cardiovascular diseases. The title of our abstract was "Chemical Induced Reductive Stress Causes Cardiomyocyte Hypertrophy." Dr. Shelar has done this research work under the supervision of Dr. Rajasekaran N. Soorappan, Assistant Professor in the Center for Free radical Biology, Division of Molecular and Cellular Pathology, UAB. The novel concept of "Reductive Stress (RS)" caused

Cont'd...

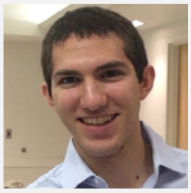
Molecular & Cellular Pathology News Cont'd:

by sustained activation of antioxidant signaling (Nrf2/EpRE signaling) and its impact on cardiomyocyte hypertrophy attracted the attention of fellow scientists.

Dr. Gobinath Shanmugam, Ph.D. (Postdoctoral Fellow):



Our recent finding on the role of Nrf2 signaling was accepted to present in American Heart Association - Basic Cardiovascular Sciences -2015 meeting in July 2015. Title: "Impaired TNFα Signaling Deregulates Basal Nrf2-Antioxidant System in Myocardium". Here, we described that sub-physiological dose of TNFα is crucial to maintain the basal Nrf2-ARE antioxidant signaling, which protects the heart from diseases caused by oxidative stress.



Dr. Raj`s lab hosted a summer research student Mr. Daniel Bolus. *Mr. Bolus tells us about his experience in the lab:* My summer experience was probably one of the most rewarding experiences I've ever had. I had always wanted to work in a lab setting, but I hadn't ever worked in a lab and didn't really know what to expect. To my astonishment, Dr. Raj, my PI, gave me my own project to work on over the summer. I was assigned to culture myoblast cells, collect and estimate protein and RNA, run gels, analyze protein expression with western blots, run PCR, and finally to quantify all of the data into a poster worthy of presenting at UAB's Summer Research Expo. When I heard I had to do all of this in a matter of seven weeks, I was pretty nervous. However, Dr. Gobi, one of the postdocs in the lab, immediately adopted me as a student and very carefully taught me how to perform each protocol step by step, with added tricks of his own to make each procedure more efficient and precise. He, along with other researchers in the lab such as Dr. Rajesh Kumar, Charmaine Brown, and later Dr. Sandeep, would very patiently answer the millions of questions I gave them about each procedure. Under their watchful eyes, I became more confident about the experiments I was conducting by the second and third week, and finally began coming up with a few of my own tricks to make things easier. Moreover, now that I had a decent understanding of the techniques in the lab, I began focusing more on the scientific meaning of my project. Dr. Raj would periodically check up on how much of the project I understood from a scientific standpoint, and he even took time out of his busy schedule to come to a presentation I gave about my project to some of my peers in the UAB SIBS program. He gave me feedback on some key points I was missing, and even explained in detail why we perform some of the laboratory techniques in certain ways. As an added challenge, Dr. Raj assigned me to assist two new members of our lab who came later in the summer—Indira and Neelu, which transitioned me from student to teacher in a matter of weeks! Even though all these assignments presented me with a lot of work, I have had so much fun in this lab—both talking to really intelligent postdocs as well as performing the experiments. Sometimes, you wake up and roll out of bed not wanting to start the day, but I would always look forward to coming to work in this lab. This experience definitely left a good impression on me concerning my future aspirations to be a scientific researcher, and I cannot thank UAB/Department of Pathology enough for this wonderful opportunity.

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: path-infocus@uab.edu.

Thank you.

Angie Schmeckebier

Dear UAB Department of Pathology Friends and Colleagues:

The UAB Department of Pathology is recognized nationally for excellence in biomedical research, undergraduate and graduate medical education, and diagnostic pathology. This rise to prominence has been accomplished through the hard work and dedication of numerous Department of Pathology faculty and trainees who have made UAB a phenomenal environment for pathology education and clinical practice. Several decades ago, the former Departments of Anatomic Pathology and Clinical Pathology of the University of Alabama School of Medicine merged into a single Department of Pathology of the UAB Health System. More than 250 residents have received their graduate training in Pathology at UAB and have gone on to populate the state, region and the nation. In fact, the vast majority of Pathologists in the state of Alabama have received some or all of their training here at UAB. This program of excellence in graduate medical education has been appropriately balanced by a world-class graduate program that has similarly trained generations of scientists who fill academia, industry and government service. Our department has been bolstered in recent years by an ever increasing number of post-doctoral fellows, clinical fellows and junior faculty members who have achieved academic, research, and/or clinical excellence, and ascended to leadership positions at UAB or other institutions.

Please consider making a gift to the Department of Pathology at UAB to support our missions of clinical practice, teaching, research and service. Any amount would be most gratefully received and would be fully deductible*. One could direct it to a particular area of need, to fund current and future endowed professorships or create new awards, prizes or similar recognition opportunities to honor yourself, a family member, a favorite professor, etc.

We would be pleased to assist you and your professional advisors in including the UAB Department of Pathology in your estate plan or in exploring other giving strategies. A simple tear off sheet is found below.

* One should always check with their tax advisor.

Thank you for your serious consideration of this request.

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Please fill out each of the 3 Sections:

A1—Enclosed, please find my contribution to the UAB Department of Pathology in the amount of:

___ $50
___ $100
___ $500
___ $1000
___ Other: _____

Please make all checks payable to the UAB Department of Pathology and return them to Ms. Lynne Roden, Departmental Administrator, 500 22nd Street South; Suite JNWB 404, Birmingham, AL 35294-0500.

Cont'd...

A2—Please contact me to discuss further:

Name: _____

Address: _____

Telephone Number: _____

E-mail Address: _____

*Please indicate your preferred means of communication.

B—I wish to direct this gift to the Department towards:

___ Where the need is the greatest

___ Teaching

___ Research

___ Named Chairs or Professorships

___ Awards for teching/research/clinical excellence

___ Naming opportunities (Rooms, collections, equipment, etc.)

C—Person(s) and complete address to be acknowledged for tax purposes:

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Do you want this gift to be anonymous? Yes ___ No ___

Do you want to honor a particular person or event?

Specifics: _____

D—If you prefer to donate via credit card, please call the UAB Development office at (205) 975-5659.