

Biomed Highlights



DEPARTMENT of
BIOMEDICAL SCIENCES

Quillen College of Medicine

EAST TENNESSEE STATE UNIVERSITY

T J Neal—Editor
Vol. 13 December 2018



CHAIR'S MESSAGE
THEO HAGG, MD, PhD, PROFESSOR
DEPARTMENT OF BIOMEDICAL



Dear Colleagues

It is hard to believe that five years have passed since my family and I arrived in Johnson City. It is fair to say that we as biomedical sciences team have been very successful in positioning ourselves to continue to grow and excel for the decades to come. This took a great deal of hard work by many people and I am very grateful for your collective commitment to our department, college and ETSU.

Some of our major achievements over the past five years involved faculty recruitment, medical education and research funding. We welcomed 16 new faculty members to fill 11 tenure track, two term and three research positions. The large number who joined us from prestigious institutions speaks to the excellent collegiality and environment within our department. We ensured that all medical courses remained at or improved to an excellent level, while fostering integration and seeing further improvements in student performance, all despite major curricular changes. We saw more publications, as well as extramural funding double from ~\$2 to more than \$4 million per year, which is an excellent achievement considering the current competitive funding environment.

I trust that you will agree that we are currently better able to serve our college in its teaching and research mission than five years ago. I am grateful to each one of you for making this possible and am confident that we will successfully address areas that need to be further developed over the coming years.

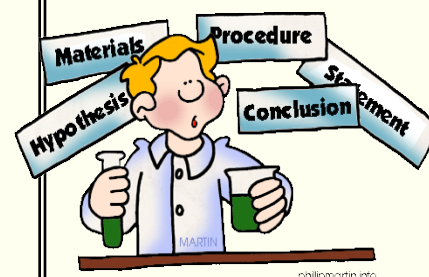
Wishing everyone a well-deserved break and a wonderful holiday season.

Theo Hagg

*Happy
New Year*

- ▶ Publications
- ▶ Grant Awards
- ▶ Presentations
- ▶ Faculty News
- ▶ Student News
- ▶ Staff News
- ▶ Seminar Information
- ▶ Abstracts

Please submit news to
TJ Neal - neal@etsu.edu



Employees and students are encouraged to check the departmental web site for updates and changes. Please contact Tonya Ward at 439-2001 if you have questions regarding the site.

www.etsu.edu/com/dbms.



JOURNAL PUBLICATIONS



- Cui K, Ardell CL, Podolnikova NP, **Yakubenko VP** (2018) Distinct migratory properties of M1, M2 and resident macrophages are regulated by α D β 2 and α M β 2 integrin-mediated adhesion. *Frontiers in Immunology*. Nov 15, Volume 9.
 - Delic V, Kurien C, Cruz J, Zivkovic S, Barretta J, Thomson A, Hennessey D, Joseph J, Ehrhart J, Willing AE, **Bradshaw P**, Garbuzova-Davis S (2018) Discrete mitochondrial aberrations in the spinal cord of sporadic ALS patients. *J Neurosci Res*. Aug;96(8):1353-1366. PMID: 29732581.
 - Delic V, Noble K, Zivkovic S, Phan TA, Reynes C, Zhang Y, Phillips O, Claybaker C, Ta Y, Dinh VB, Cruz J, Prolla TA, **Bradshaw PC** (2018) The effects of AICAR and rapamycin on mitochondrial function in immortalized mitochondrial DNA mutator murine embryonic fibroblasts. *Biol Open*. Nov 16;7(11). PMID: 30177551.
 - Dhabal S, Das P, Biswas P, Kumari P, **Yakubenko VP**, Kundu S, Cathcart MK, Kundu M, Biswas K, Bhattacharjee A (2018) Regulation of monoamine oxidase A (MAO-A) expression, activity and function in IL-13-stimulated monocytes and A549 lung carcinoma cells. *J Biol Chem*. Sep 7;293(36):14040-14064.
 - Fan Y, Chen P, Raza MU, **Szebeni A, Szebeni K, Ordway GA**, Stockmeier CA, **Zhu MY** (2018) Altered Expression of Phox2 Transcription Factors in the Locus Coeruleus in Major Depressive Disorder Mimicked by Chronic Stress and Corticosterone Treatment In Vivo and In Vitro. *Neuroscience*. 2 Oct 11;393:123-137. PMID: 30315878.
 - **Jia C, Brown RW**, Malone HM, Burgess KC, Gill WD, **Keasey MP, Hagg T** (2018) Ciliary neurotrophic factor is a key sex-specific regulator of depressive-like behavior in mice. *Psychoneuroendocrinology*. Sep 29;100:96-105. PMID: 30299260.
 - **Jia C, Keasey MP**, Malone HM, Lovins C, Sante RR, Razskazovskiy V, **Hagg T** (2018) Vitronectin from brain pericytes promotes adult forebrain neurogenesis by stimulating CNTF. *Exp Neurol*. Nov 6;312:20-32. PMID: 30408465.
 - **Jia C, Keasey MP**, Lovins C, **Hagg T** (2018) Inhibition of astrocyte FAK-JNK signaling promotes subventricular zone neurogenesis through CNTF (2018) *Glia*. Nov;66(11):2456-2469. PMID: 30500112.
 - **Kostrzewa RM**, Wydra K, Filip M, Crawford CA, McDougall SA, **Brown RW**, Borroto-Escuela DO, Fuxe K, Gainetdinov RR (2018) Dopamine D2 receptor supersensitivity as a spectrum of neurotoxicity and status in psychiatric disorders. *J Pharmacol Exp Ther*. Sep;366(3):519-526. PMID: 29921706.
 - Kou J, **Musich PR**, Staal B, Kang L, Qin Y, Yao ZQ, Zhang B, Wu W, Tam A, Huang A, Hao HX, Vande Woude GF, **Xie Q** (2018) Differential responses of MET activations to MET kinase inhibitor and neutralizing antibody. *J Transl Med*. Sep 12;16(1):253. PMID: 30208970.
 - Nguyen LN, Zhao J, Cao D, Dang X, Wang L, Lian J, Zhang Y, Jia Z, Wu XY, Morrison Z, **Xie Q**, Ji Y, Zhang Z, El Gazzar M, Ning S, Moorman JP, Yao ZQ (2018) Inhibition of TRF2 accelerates telomere attrition and DNA damage in naïve CD4 T cells during HCV infection. *Cell Death Dis*. Sep 5;9(9):900. PMID: 30185784.
- Scofield SLC, Daniels CR, Dalal S, Millard JA, **Singh M, Singh K** (2018) Extracellular ubiquitin modulates cardiac fibroblast phenotype and function via its interaction with CXCR4. *Life Sci*. Oct 15;211:8-16. PMID: 30195032.



JOURNAL PUBLICATIONS (Cont'd)



- Slade J, Hall J, Kintner J, **Schoborg RV** (2018) The Type I interferon receptor is not required for rotection in the chlamydia and HSV-2 murine super-infection model. *Pathog Dis.* Nov 1;76(8). PMID:30321322.
- **Polichnowski AJ** (2018) Microvascular rarefaction and hypertension in the impaired recovery and progression of kidney disease following AKI in preexisting CKD states. *Am J Physiol Renal Physiol.* Sep 26. doi: 10.1152/ajprenal.00419.2018. [Epub ahead of print] PMID: 30256130.
- Wang L, Cao D, Wang L, Zhao J, Nguyen LN, Dang X, Ji Y, Wu XY, Morrison ZD, **Xie Q**, El Gazzar M, Ning S, Moorman JP, Yao ZQ (2018) HCV-associated exosomes promote myeloid-derived suppressor cell expansion via inhibiting miR-124 to regulate T follicular cell differentiation and function. *Cell Discov.* Sep 11;4:51. PMID: 30210805.
- **Zhu MY** (2018) Noradrenergic Modulation on dopaminergic neurons. *Neurotox Res.* Nov;34 (4):848-859. PMID: 29572781.

NEW GRANT AWARD

Funded by: NIH R15

Project Period: 9/15/18—8/31/21

Total Award: \$422,849

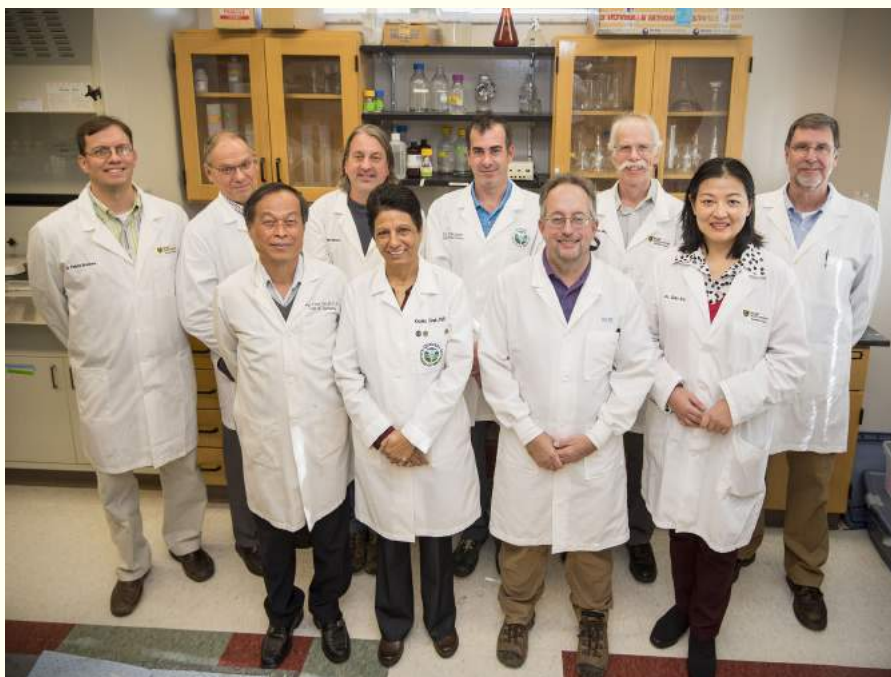
Principal Investigator: Dr. Patrick Bradshaw

Project Title: Testing the NADPH redox theory of aging in *C. elegans*

Project Description: Studies will be performed to explore why the conversion of vitamin B3 to antioxidant molecules slows during aging in the brain and other organs. This should lead to the development of treatments that increase levels of antioxidants derived from vitamin B3 to delay aging-related diseases in humans.

Department of Biomedical Sciences Awarded \$6.7 Million in New Grant Funding During 2018

During the past year, faculty members in the Department of Biomedical Sciences pictured here were awarded \$6.7 million in extramural funding collectively. The grant proposals were funded by agencies such as the National Institutes of Health, American Heart Association, American Foundation for Suicide Prevention, and the Swiss National Science Foundation and will support research studies in the areas of heart disease, neurological and psychiatric diseases, infectious diseases and cancer.



SCIENTIFIC MEETINGS

The following three oral meeting presentations were done at the EMAC-5 Meeting, which was held in the Atlantic Garden Resort Hotel at Odesa, Ukraine, from October 3-5, 2018. The presenter is indicated in blue. The first presentation was the keynote presentation that led off the entire meeting. The meeting aims to serve as the international forum for researchers, experts, veterinarians, medical doctors, and public health professionals, interested in all aspects of animal chlamydia. There were scientific presentations/posters and discussions in a friendly atmosphere to exchange ideas and explore collaborations in the field of animal chlamydia.



R.V. Schoborg; J. Slade; J. Hall; J. Sun; S. Deka; J. Kintner; R. Phillips-Campbell; M. Duffourc; S. Dessus-Babus; J. Raulston; and P.B. Wyrick. "When pathogens don't share well: Chlamydia/ herpes simplex virus co-infection in cell culture and *In Vivo*." 5th European Meeting on Animal Chlamydia, Odessa, Ukraine, Oct. 2018. Invited oral keynote presentation.

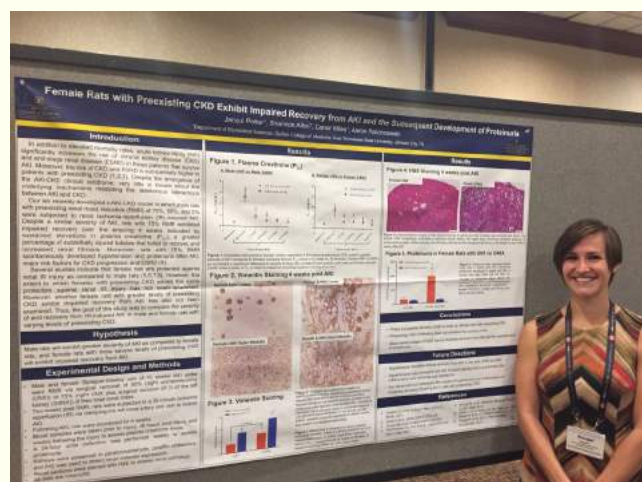
M. Kruppa; J. Jacobs; K. King-Hook; A. Berry; J. Kintner; J. Whittimore; R. Fritz; **R.V. Schoborg**; and J. Hall. "Binding of elementary bodies to the opportunistic fungal pathogen *candida albicans* inhibits *chlamydia trachomatis* infectivity." 5th European Meeting on Animal Chlamydia, Odessa, Ukraine, Oct. 2018. Oral presentation.

H. Yakoob; C. Liu; M. Grimm; J. Slade; A. Berry; J. Kintner; J. Whittimore; and **R.V. Schoborg**. "The human immunodeficiency virus (HIV) drugs dolutegravir and elvitegravir inhibit *chlamydia trachomatis* and *C. muridarum* development in culture." 5th European Meeting on Animal Chlamydia, Odessa, Ukraine, Oct. 2018. Oral and poster presentation.

Dr. Yue Zou gave an invited talk entitled, "DNA Damage and Repair in Cancer, Premature Aging and Aging." Guangzhou Medical University, China, October 22, 2018.



Jacqui Potter presented (both oral and poster) a recent study from Dr. Beaumont's lab, Titled "Cardiovascular, renal and metabolic diseases: Sex-specific implications for physiology." American Physiological Society Conference, Knoxville, TN, Sep 30-Oct 3, 2018. (<http://www.the-aps.org/sexgender>).



SCIENTIFIC MEETINGS (Cont'd)

Dr. R.V. Schoborg, Professor, presented a talk titled, “When pathogens don't share well: Chlamydia/herpes simplex virus co-infection in cell culture and *In Vivo*.” Institut für Veterinärpathologie, Vetsuisse, University of Zurich, Switzerland: “Oct. 8, 2018.

Dr. Patrick Bradshaw, Assistant Professor, was featured speaker at the Department of Biological Sciences and Department of Health Sciences Seminar program,. His topic was, “Redox coenzyme levels regulate aging and proteostasis in *C. elegans*.” Oct. 24, 2018.

Dr. Valentin Yakubenko, Assistant Professor, gave a talk titled, “Neutrophil-mediated DHA oxidation promotes β 2 integrin-dependent macrophage migration.” The Tennessee Physiological Society Meeting held in Memphis, TN, Nov. 9, 2018.

Dr. R.V. Schoborg, Professor, was featured speaker at the ETSU Academic Health Center Community of Scholars inaugural meeting. “The human immunodeficiency virus (HIV) drugs dolutegravir and elvitegravir inhibit chlamydia infection.” Nov. 16, 2018.

Dr. Cuihong Jia, Assistant Professor, gave a talk titled, “Ciliary neurotrophic factor (CNTF) promotes and reduces depressive-like behavior in female and male mice, respectively.” The Society for Neuroscience annual meeting, San Diego, CA, Nov. 7, 2018.

Dr. Chad Frasier, Assistant Professor, presented a talk at the Dravet Syndrome Foundation titled, “Channelopathy as a SUDEP Biomarker in Dravet Syndrome Patient-Derived Cardiac Myocytes.” He also presented an abstract at the American Epilepsy Society Annual Meeting titled, “SCN8A epileptic encephalopathy mice exhibit cardiac arrhythmias and altered autonomic tone in-vivo.” New Orleans, LA. Nov. 30-Dec 4, 2018.



Dr. Rob Schoborg, Professor, served as a Panel member for NIH NAIAD U19 study section 2019/01 ZAI1 AWA-M (J1) for Sexually Transmitted Infections (STI) Cooperative Research Centers (CRC): Vaccine Development (STI CRC).

Dr. Krishna Singh, Professor, served as a Member of the Collaborative Sciences Award Letter of intent (CSA LOI) grant peer-review committee for American heart Association with a deadline of Nov 13, 2018.

Dr. Krishna Singh, Professor, served as Co-chair on the Cardiovascular and Respiratory Sciences NIH study section (CVRS-Q80 A; grant peer-review committee) on November 14, 2018.

Dr. Valentin Yakubenko, Assistant Professor, served on the “Surgical Sciences, Biomedical Imaging and Bioengineering” study section review committee, NIH, October 2018, Bethesda, MD.



Congratulations to **Jessica Lockhart**, who completes a master’s degree in December 2018 with a concentration in Biology-Biomedical Sciences. Title of Thesis: The Role of Non-Neuronal Acetylcholine in Urogenital Chlamydial Infection. Jessica has been a student in the laboratory of Dr. Schoborg.

**17th Annual Medical Student Health Sciences
Research Symposium***
November 5, 2018

*Second year medical students gave short presentations describing the research that they performed during the past summer. *Student support provided by the COM Dean and COM Departments.*

- Josh Coleman
"Analysis Of A Poly-ADP Ribose (PARP) Inhibitor In A Treatment-Resistant Depression Model In The Rat"
Mentor: Dr. Russ Brown
- Christina Kihm
"Laser Capture Microdissection Of Hippocampal Oligodendrocytes In Patients With Major Depressive Disorder"
Mentor: Dr. Greg Ordway
- Fred Lam
"Pericyte And Endothelial Cell Distribution & Behavior Post Injury"
Mentor: Dr. Cuihong Jia
- Connie Liu
"The Anti-Retroviral Drug Dolutegravir Inhibits Chlamydial Development?"
Mentor: Dr. Rob Schoborg
- Libby Ligon
"Effect Of Stress And Antidepressant Treatment On Brain Microglia"
Mentor: Dr. Greg Ordway
- Mark Mitchell
"Renal Hypoxia As A Potential Contributor To Impaired Recovery From AKI In Rats With Preexisting CKD"
Mentor: Dr. Aaron Polichnowski
- Katie Patterson
"The Effect Of PD2024 On The Olfactory Bulb Of An Alzheimer's Disease Mouse Model"
Mentor: Dr. Diego Rodriguez-Gil
- Jared Reed
"Defining The Amyloid-B-Binding Site Of C-Reactive Protein"
Mentor: Dr. Alok Agrawal



**BIOMEDICAL SCIENCES
HOLIDAY GATHERING/CELEBRATION
DECEMBER 14, 2018
BLACKTHORN CLUB AT THE RIDGES**



CRYSTAL MAUPIN always makes Halloween memorable. Congrat to Crystal on winning **SECOND PLACE** in the Halloweenie Costume Contest



**Congratulations to
Rebecca Steele
(2nd Place Winner)
and
Tonya Ward
(3rd Place Winner)**

**TACKY SWEATER
CONTEST**



(Photo above compliments of Carroll Matthew)



From the Desk of...
 Dr. Rob Schoborg, Professor and
 Vice Chair for Education
 On behalf of the DBMS Course Directors



To my colleagues,

First, I would like to wish you all “Happy Holidays” a little bit early and thank you all for all of your hard work over the last 12 months in educating our medical and graduate students. I would also like to give you a “heads up” about some upcoming events and departmental teaching-related initiatives that are in progress.

- **DBMS teaching retreat.** The DBMS will hold a one-day teaching retreat in mid-May 2019. Keep an eye out this spring for e mails detailing the date, time, location, and content. Any suggestions for a more “interesting” location than Stanton-Gerber hall would be greatly appreciated!
- **DBMS staff and faculty teaching awards.** The DBMS medical course directors, Dr. Hagg, and myself have been developing an annual departmental teaching awards program. Though the details have not yet been finalized, it is our plan to identify up to two DBMS staff and two DBMS faculty per year who have provided exceptional contributions to the DBMS medical or graduate student teaching mission. Nominations for these awards will be solicited in early Spring annually and evaluated by a DBMS review committee. Awards will be then announced at the DBMS teaching retreat and luncheon in mid-May. I encourage you to nominate one or more of your staff and faculty colleagues for these awards.
- **Peer-review of DBMS courses.** I would also like to begin developing a formal teaching peer-review system for DBMS graduate and medical courses. As a first step, I am assembling a list of faculty volunteers who would be willing to attend selected class events and provide formal peer-evaluations for the instructors. Any DBMS course instructor could then contact peer-reviewers on the list to arrange for such reviews. If you would like to volunteer to be a peer-reviewer, please contact me at schoborg@etsu.edu.
- **Upcoming LCME site visit.** For those of you involved in medical education, don't forget the upcoming LCME site visit on October 27-30, 2019.

Again, I would like to thank you all for your dedication to our students and to their future patients. The Quillen College of Medicine would not be here without you.

Rob



CHAD FRASIER, PhD, JOINS DEPARTMENT



We are pleased to welcome to the faculty Dr. Chad Frasier. Dr. Frasier became our newest Assistant Professor in the department on October 8, 2018. Chad is originally from Port Huron, Michigan (Southernmost point on

Lake Huron). In his spare time he enjoys sports and outdoor activities—hiking, biking, and going into the mountains. Chad and his wife, Amanda, have ties to East TN having gotten married in Mountain City. They have recently become parents and have an 11 month old daughter, Ausra.

Dr. Frasier completed his Bachelor of Science degree from Central Michigan University, with a double major in Neuroscience and Psychology. His undergraduate research was focused on the cognitive deficits in the early stages of Parkinson's disease. He obtained his Doctoral degree in the Department of Physiology at East Carolina University, Greenville, NC under the direction of Dr. David Brown. His graduate work focused on physiological and pharmacological targets to decrease cardiac ischemia-reperfusion injury. He performed his postdoctoral training in the Department of Pharmacology at the University of Michigan under the direction of 2 different mentors, Drs. Jeff Martens and Lori Isom. Under Dr. Martens, his research was focused on cardiac potassium ion channel trafficking. In Dr. Isom's lab, he used induced pluripotent stem cells to investigate how changes to cardiac excitability may predispose pediatric epilepsy patients to Sudden Unexpected Death. This work was supported by several grants including an American Heart Association pre-doctoral fellowship, an NIH Clinical and Translational Science Award (NCATS) through the Michigan Institute for Clinical & Health Research, and a postdoctoral award through the American Epilepsy Society and Wishes for Elliot.

The long-term plan for Dr. Frasier's laboratory at ETSU is to determine how K⁺ channel remodeling and mitochondrial energetics affect cellular excitability, with the hope of uncovering novel therapeutic targets for human disease. Building on his success during his graduate and

postdoctoral training, he will initially focus on three key projects: 1) The relationship between cardiac potassium ion channels and the risk of sudden death in epilepsy models; 2) How the voltage-gated sodium channel beta subunits interact with potassium channels in heart; and 3) Determine if cardiac cellular energetics are compromised in epilepsy models. While initially his focus will remain in genetic models of epilepsy in which there is a high risk of SUDEP in human patients, his long-term goal is to expand his skills into other diseases (such as acquired epilepsy, diabetic cardiomyopathy, and genetic cardiac arrhythmic diseases). It is his hope to lead a lab at the forefront of ion channel diseases that combines his research interests in neuroscience and cardiac physiology. He is excited to be in Department of Biomedical Sciences and looking forward to working and establishing collaborations with researchers here at ETSU.

Once again, we welcome Dr. Chad Frasier to the Biomedical Sciences team. We look forward to his contributions to the department.

TYRONE GENADE, PhD, JOINS DEPARTMENT

We are pleased that Dr. Tyrone Genade will be joining the department as a Research Assistant Professor, effective January 1, 2019.

Dr. Genade was born and lived in Cape Town, South Africa, for most of his life. For fun, as a kid, he would go out into the bush to catch snakes, lizards and frogs. Tyrone and his wife, Laura, have two children: Daniel (4) and Ariella (2). They enjoyed hiking the mountains in South Africa and are looking forward to exploring the mountain terrains around Johnson City and other surrounding areas.

Dr. Genade attended Stellenbosch University in South Africa with an eye on a career in biochemistry. He attained an M.Sc. in Biochemistry studying adrenal steroid metabolism.



Dr. Genade (Cont'd)

After his M.Sc. work he was invited to work under Prof. Alessandro Cellerino and Luciano Domenici, studying neurodegeneration in *Nothobranchius killifish*, at the Institute for Neuroscience in Pisa, Italy. (This provided an opportunity to merge his work with his hobby of killifish keeping.) It was during this time that he developed an interest in neuroanatomy and aging research.

Afterwards, upon returning to South Africa, he taught high school physics and chemistry for two years while seeking a PhD promoter for his research of *Nothobranchius* aging-related neuropathology and neuroprotection. He joined the lab of Prof. Dirk Lang at the University of Cape Town where he completed his research into the aging of the nervous system of *Nothobranchius* fish as well as completing his PhD in Anatomy and Cell Biology.

Dr. Genade accepted a position in 2013 as Assistant Professor at Northwestern College in Iowa, a small liberal arts college, where he taught anatomy and physiology. It was during this time, devoted to anatomy, that he discovered how much he enjoyed teaching anatomy and wanted to become a more accomplished anatomist. This led him to pursue opportunities elsewhere, thus bringing him to the Quillen College of Medicine.

His overarching research goal is to contribute to the development of anti-aging therapies that can either slow the rate of aging (i.e. extend lifespan); or can remedy or alleviate the consequences of aging-related degeneration and disease (i.e. extend healthspan). Toward this goal he has invested in the rapidly aging fish of the genus *Nothobranchius*, in particular the species *furzeri*, the Turquoise killifish. Very little is known about the biology of the fish of the genus *Nothobranchius* so I have set for myself the dual aims of characterizing the aging-related pathology of the fish as well as identifying molecular interventions that extend life/healthspan. In mind is the idea that once we have identified sites of pathology, and a means to alter the course of that pathology we can work back from the whole-animal/anatomical level down, through the cellular changes, to the molecular level to identify drug targets and improve therapies.

We appreciate Dr. Genade's interest in becoming a team member in the Biomedical Sciences department.

ZHENGKE LI, PhD, JOINS DR. ZOU'S LAB



We extend a welcome Dr. **Zhengke Li**, who has joined the laboratory of Dr. Yue Zou as Research Assistant Professor, effective October 1, 2018.

Dr. Li is an alumnus of the Quillen College of Medicine Biomedical Science graduate program. Dr. Li completed

his Ph.D. with Dr. Yue Zou from the Biomedical Sciences Program at East Tennessee State University in 2013. After his graduation, he joined a group led by Dr. David Cobrinik at Children's Hospital Los Angeles, and studied childhood cancer retinoblastoma until 2015. He then moved to City of Hope Comprehensive Cancer Center, and studied Cancer Genetics and Cancer Genome Stability, with Dr. Binghui Shen. Before his Ph.D., he completed a B.S. of Medicine in 2004 and a Master of Science in 2008 in China. Dr. Li has been interested in the master DNA damage kinase ATR which is known to play an important role in DNA damage signaling. Dr. Li is also interested in mitochondrial genome maintenance and diseases.

Dr. Li's representative research includes his Ph.D. dissertation research where he demonstrated that ATR plays a direct antiapoptotic role at mitochondria, which is regulated by prolyl Isomerase Pin1 (Mol Cell. 2015); his work with Dr. David Cobrinik at Children's Hospital Los Angeles focusing on cellular circuitry of human retinal cone cells that collaborates with pRB loss to drive human retinoblastoma (Cancer Research. 2017); and his work with Dr. Binghui Shen at City of Hope Comprehensive Cancer Center where he found that hDNA2 nuclease/helicase promotes centromeric DNA replication and genome stability, implying a role in cancer (EMBO J. 2018).

Since his Ph.D. training, Dr. Li has been interested in the DNA damage response kinase ATR which is known to play an important role in DNA damage signaling. Due to several unexpected exciting findings, he and the group are now exploring its roles in non-DNA damage related roles and its implications in some critical human diseases. This series of studies may even have a potential for a hypothesis-driven drug discovery.

Dr. Zhengke (Cont'd)

Dr. Li is also interested in mitochondrial genome maintenance and diseases. The understanding of mitochondria DNA replication is lagging far behind. This is mainly due to technical challenge. Mitochondria DNA is in a dynamic heterogeneous status: several hundreds of mitochondrion is in each cell, and each mitochondrion has several copies of genome; mitochondria have fusion and fission which exchanges DNA. Dr. Li believes that he can resolve some of these issues through his recently established technology breakthrough in single molecular analysis of replicated DNA (SMARD). Dr. Li believes that he has a set of skills to study mitochondria DNA replication program. This includes the SMARD technology and CHIP-seq assay, etc. He believes that it is now a great opportunity for him to systematically study it.

In his spare time, Zhengke enjoys spending time with his wife and 5-year old daughter. He finds that a fishing trip to lake Watauga or South Holston, hiking into the Blue Ridge Parkway and the Great Smoky Mountains, a short family time in the garden, or even a short weekend travel to a nearby resort, refreshes a whole week.

WELCOME NEW STAFF...



Jinyu Zhang has joined the laboratory of Dr. Yong Jiang as a Research Associate. Jinyu graduated from the QingDao Agriculture University with a Bachelor of Science and Master's Degree, in Animal Veterinary and

Animal Sciences and Breeding. She earned her Doctoral Degree from the Korean Research Institute of Bioscience and Biotechnology majoring in Animal Science. She held a Postdoctoral Fellowship with the Department of Microbiology and Immunology, Medical University of South Carolina. During this time she was also a Staff Scientist. for Microbiology & Immunology. Her research background includes colitis, breast cancer, and prostate cancer.

WELCOME NEW STAFF...

William Bailey has joined the department effective November 30, 2018. William was born and raised in Johnson City, TN where he attended Science Hill High School. Upon graduation he attended the University of Tennessee in Knoxville, and earned his major in Biomedical Engineering. After graduation he returned to Johnson City and spent a year working in his fathers business, Holidays Floral and Gifts. After spending seven months working additionally as a volunteer for Dr. Yakubenko's and Dr. Kruppa's labs, he has taken a position as a Research Assistant in Dr. Yakubenko's lab.



Congratulations to Biomedical Sciences graduate student **Rudy Chapman** in Dr. Diego Rodriguez-Gil's lab for winning the 3MT (3-Minute Thesis) competition.

Also, congratulations to Biomedical Staff member **Rebecca Steele** in the Anatomy Lab for winning second place in the 3MT (3-Minute Thesis) competition.

All winners of the finals will receive a small scholarship prize, and the winner will advance to the Southern regional competition.

3MT® provides graduate students the opportunity to develop their professional presentation and research communication skills. The objective of the event is to distill projects into an engaging three-minute presentation designed for a general (non-specialist) audience using just one slide.



RECENT INTERNAL SEMINAR PRESENTERS

- **Zheng Ke Li**, PhD, Visiting Scholar. "DNA damage signaling and oncogenic cell cycle regulation underlying human genetic diseases." Aug. 31, 2018
- **Matt Keasey**, PhD, Research Assistant Professor. "What regulates sex specific vitronectin upregulation after stroke?" Sep.14, 2018
- **Robert Schoborg**, PhD, Professor. "When pathogens don't share well: Chlamydia/Herpes Simplex Virus co-infection in Cell Culture and In Vivo." Sep. 21, 2018
- **Patrick Bradshaw**, PhD, Assistant Professor. "Redox coenzyme levels regulate aging and proteostasis in *C. elegans*." Sep. 28, 2018
- **Aaron Polichnowski**, PhD, Assistant Professor. "Pathogenesis of kidney disease and salt-sensitive hypertension in the Dahl rat." Oct.12, 2018
- **Meng-Yang Zhu**, PhD, Professor. "Critical role of oxidative DNA damage in selective noradrenergic vulnerability in Parkinson's disease." Oct. 26, 2018
- **Hannah Malone**, Biomedical Graduate Student. "Therapeutic potential of FAK inhibitor in neuroprotection and neurogenesis in preclinical study in rodent stroke model." November 30, 2018.
- **Dr. Mark Kleinman**, Professor, Department of Surgery. "Epigenetic regulation of inflammation and cell death in the aging retina." Dec. 7, 2018
- **Yetunde Makinwa**, Graduate Student. Dec.14, 2018. "Regulation of ATR Anti-apoptotic Functions at Mitochondria by Phosphatase." Dec. 14, 2018.

RECENT EXTERNAL SEMINAR PRESENTERS



Valentin A. Pavlov, Ph.D. Professor,
Center for Biomedical Science
Center for Bioelectronic Medicine
The Feinstein Institute for Medical Research
Northwell Health, Manhasset NY
"Cholinergic regulation of inflammation and metabolism"
Date: October 16, 2018

John H. Zhang, MD, PhD, F.A.H.A.
Director, Center for Neuroscience
Research Professor of Anesthesiology, Neurosurgery,
Neurology, and Physiology
Loma Linda University School of Medicine
Loma Linda, CA
"Stroke Strategic Changes: Delayed Recanalization?"
Date: December 3, 2018



Paul Michael O'Connor, Ph.D.
Associate Professor/Program Director
Department of Physiology Graduate Program
Augusta University, Augusta, GA
"A basic solution to stimulate splenic anti-inflammatory pathways: a new role for the mesothelium?"
Date: December 17, 2018