



AUGUSTA UNIVERSITY
MEDICAL COLLEGE
OF GEORGIA

Department of Physiology

PHYSIOLOGY INSIDER

Volume 3, 2019



Message from the Chair

I am excited and honored to join the Department of Physiology as the new Chair. My first months in Augusta have passed quickly, and I am especially grateful to the faculty, students, fellows, and staff who have eased my transition to the Medical College of Georgia (MCG). As I have had the opportunity to get to know everyone better, I am continually impressed with the positive attitude that each individual presents. It is my great pleasure to join a department with an established tradition of excellence in research, teaching, and service.



Special thanks is owed to Dr. Ruth Harris, who just completed her term as the Interim Chair. Ruth's personal commitment and dedication to the department and institution is remarkable. Dr. Harris not only filled the chair role for the past year, but she also worked diligently to advance the mission of the department while continuing her personal scientific research and other activities. Dr. Harris serves as a great role model for all of us.

The department faculty continue to be world leaders in their respective fields with outstanding research programs. The department ranked #30 in the Blue Ridge Institute Rankings for 2018 with just over \$5.5M in total National Institutes of Health (NIH) funding. Further evidence of the faculty member's scientific influence is their active participation in international societies and meetings, scientific committees, editorial boards, invited lectures, and other scholarly activities. The postdoctoral fellows and students are also contributing and highly productive members of the department. Together with the outstanding professional staff, the department is a vibrant place to work that is making scientific progress on a continuing basis.

In addition to the department's excellence in research, faculty continue to not only excel but also lead the service and teaching mission at MCG. All of the faculty are involved in these missions, but special credit goes to Dr. Michael Brands, Chair of the MCG Student Academic Promotions and Professionalism Conduct Committee, and Dr. Ruth Harris, Chair of the Institutional Animal Care and Use Committee. Similarly, the department is a leader in medical and graduate education. Evidence of teaching effectiveness is the receipt of multiple teaching awards by department faculty. Among them was the "Distinguished Faculty Award for Basic Science Teaching" awarded to Dr. Paul O'Connor and the "Caught in the Act of Great Teaching Award" to Dr. Jen Sullivan. The department also had four faculty recipients of "MCG Exemplary Teaching Awards" (Dr. Wendy Bollag, Dr. O'Connor, Dr. David Stepp, and Dr. Mong-Heng Wang).

There were also a large number of accomplishments by department members in the past year; notable among them:

Dr. Jessica Filosa and Dr. Zsolt Bagi were promoted to Professor. These promotions reflect the excellence of both Jessica and Zsolt in research, teaching, and service.

Dr. Ruth Harris completed her term as the President of the international Society for the Study of Ingestive Behavior (SSIB). Ruth was elected to lead the society by her peers. The SSIB serves as the world's leading scientific organization for the study of ingestive behavior and is comprised of individuals from over 30 different countries.

Dr. Wendy Bollag was named the founding Research Director of the Augusta University Adrenal Center. The Adrenal Center represents a collaborative clinical and research effort by several departments whose mission is to provide multidisciplinary, comprehensive and timely care to patients with diseases of the adrenal gland.

Dr. Jennifer Sullivan chaired the organizing committee for the American Physiological Society Conference on "Cardiovascular, Renal and Metabolic Diseases: Sex Specific Implications for Physiology". The aim of the conference was to educate, explore, and expand the knowledge of unique considerations for the study of cardiovascular physiology of males and females in order to improve medicine from bench to bedside.

Finally, the department welcomed two new faculty members. Dr. Philip O'Herron joined us from the Medical University of South Carolina as an Assistant Professor, and Dr. Justine Abais-Battad from the Medical College of Wisconsin joined the department as an Instructor.

It is my true pleasure to serve as the Chair of this historically significant department that has a rich academic tradition. I look forward to building on the great work that is occurring and guiding the department in new directions.

Best,

David L. Mattson, PhD
 Professor and Chair
 Georgia Research Alliance (GRA) Eminent Scholar in Hypertension

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Department Spotlights

- The American Physiology Society elected **Dr. Bagi** to serve on the APSselect editorial board and he accepted an invitation to join the Editorial Board of the Journal of Vascular Research. He also received an R01 subaward from the National Institutes of Health (NIH).
- **Drs. Boegehold, Bollag, O'Connor, Stepp, and Wang** were recognized for their contribution to teaching during the 2017-2018 academic year and were recipients of the Medical College of Georgia 2018 Exemplary Teaching Award.
- **Dr. Bollag** received a National Eye Institute R01. She also took the role of Research Director for the Medical College of Georgia's new Adrenal Center at Augusta University.
- **Drs. Bollag, O'Connor, Stepp, and Sullivan** received awards through the Intramural Grants Program.
- **Dr. Liu** is a visiting faculty member from the Hunan Agricultural University in **Dr. Chen's** lab to further research related to her R01 grant "Novel Role of Bcl2 in Cardiac Substrate Metabolism and Function."
- **Dr. Choudhary** received a Poster Travel Award at the Southeastern Regional Lipid Conference.
- The National Institute of Neurological Disorders and Stroke awarded **Dr. Filosa** a subaward for **Dr. Ergul's** parent R01 grant and an administrative supplement to her NIH R01 to study Alzheimer's disease on her R01 grant.

- **Dr. Harris** completed her term as elected President of the international Society for the Study of Ingestive Behavior and has started her term as the Chair of the Institutional Animal Care and Use Committee (IACUC).
- The Medical College of Georgia selected **Dr. O'Connor** as the recipient of the 2019 Distinguished Faculty Award for Basic Science Teaching. His manuscript "Oral NaHCO3 Activates a Splenic Anti-Inflammatory Pathway: Evidence That Cholinergic Signals Are Transmitted via Mesothelial Cells" was The Journal of Immunology's most-downloaded article in 2018.
- **Dr. O'Herron** received a two year R21 from the National Institute of Neurological Disorders and Stroke.
- **Dr. Stepp** received a grant from the National Institutes of Health to further parse how obesity drives cardiovascular disease.
- **Dr. Sullivan** received one of Augusta University's Caught in the Act of Great Teaching awards as well as a Diacomp Conference Support Grant.
- The American Physiological Society honored **Dr. Webb** with Fellow status. He was also awarded with the 2019 Mayerson-DiLuzio Lectureship from the Tulane Hypertension and Renal Center of Excellence.
- **Dr. Yoon** received a three year American Heart Association Transformational Project Award.

PHYSIOLOGY at the Medical College of Georgia

#30 in National Institutes of Health (NIH) Funding

#17 in Research Dollars per Faculty — Association of Chairs of Departments of Physiology 2018 Survey

NIH Funding

- 1 P01 Grant
- 13 R01 Grants
- 1 F Series Grant
- 1 R21 Grant
- 5 Subawards

- 1 VA Senior Research Career Scientist Award
- 3 VA Merit Awards
- 12 Other Externally Funded Grants

American Heart Association Funding

- 1 Established Investigator Award
- 2 Career Development Awards
- 3 Grants-in-Aid
- 2 Scientist Development Grants
- 1 Transformational Project Award
- 3 Postdoctoral Fellowship Awards
- 1 Predoctoral Fellowship Award

99

published papers by primary faculty in the past year

THE FACE OF PHYSIOLOGY



First Row: Xueping Wan, Hakjoo Lee, Weiqin Chen, Wendy Bollag, Jessica Filosa, Purnima Merai, Yeon Hee Kim, David Mattson, Ruth Harris, Sara Chen, Riyaz Mohamed, Mahmoud Abdelbary, Kara MacVean

Second Row: Shane Harper, Cathy Davidson, Sarah Ray, Bansari Patel, Shinjini Chowdhury, Ellen Gillis, Mong Heng Wang, Justine Abais Battad, Zsolt Bagi, Paul O'Connor, Istvan Czikora, Yue Pan

Third Row: Cheng Xu, Lindsey Ramirez, Yanna Tian, Elinor Mannon, Jackie Musall, Jingping Sun, Lizzy Snyder, John Henry Dasinger, Philip O'Herron, Yisong Liu, Ki Jung Kim

Fourth Row: Katie Wilson, Michael Brands, Hiram Ocasio, Rob Muller, Jennifer Sullivan, Mykola Mamenko

Not Pictured: WanMo Ahn, Olufunke Arishe, Marta Bagine Balogh, Kasey Belanger, Alena Cherezova, Vanessa Dela Justina, Mrunal Choudhary, Vivek Choudhary, Cassandra Derella, Daniel Fehrenbach, Melanie Gee, Fernanda Priviero, Juan Diaz Ramiro, Mary Shaw, David Stepp, Clinton Webb, Nicholas Weinand, Yisang Yoon

Faculty Promotions

- Dr. Zsolt Bagi**
Professor
- Dr. Jessica Filosa**
Professor

Welcome New Faculty!

- Dr. David Mattson**
Department Chair
Professor
Faculty
- Dr. Justine Abais-Battad**
Instructor
Research Faculty
- Dr. Philip O'Herron**
Research Assistant Professor
Faculty

16 Primary Faculty

1 GRA Eminent Scholar

4 Regents' Professors

10 Postdoctoral Fellows

18 Graduate Students

10 Joint Faculty

7 Research Faculty

3 MCG/UGA Partnership Faculty

3 Medical Residents

9 Summer Students

Congratulations to our trainees that successfully defended!

Alec Davila, PhD

Mentor Dr. Zsolt Bagi

Ladonya Jackson, PhD

Mentors Drs. Adviye Ergul and Susan Fagan

Patricia Martinez Quinones, PhD, MD

Mentor Dr. Clinton Webb

Yue Pan, PhD

Mentor Dr. Xiaoling Wang

Lia Taylor, PhD

Mentor Dr. Jennifer Sullivan



Dr. Alec Davila with his mentor Dr. Zsolt Bagi and mentoring team.



Dr. Ladonya Jackson with her mentors Drs. Adviye Ergul and Susan Fagan and mentoring team from University of Georgia.

Recent Postdoctoral Awardees

Ellen Gillis

Mentor Dr. Jennifer Sullivan

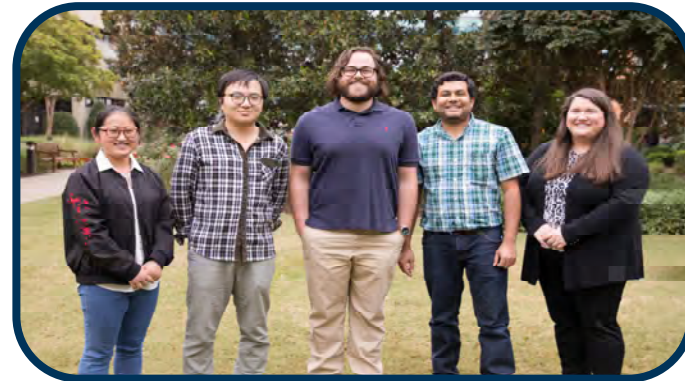
- 2019 Research Distinction Award from the Water & Electrolyte Homeostasis Section of American Physiological Society

Riyaz Mohamed

Mentor Dr. Jennifer Sullivan

- Research Recognition Award from American Physiological Society Renal Section
- Caroline tum Suden/Francis A. Hellebrandt Professional Opportunity Award

Postdoctoral Fellows



Left to Right: Xueping Wan, Cheng Xu, John Henry Dasinger, Riyaz Mohamed, Ellen Gillis
Not Pictured: Juan Ramiro Diaz

R. Clinton Webb Postdoctoral Travel Award

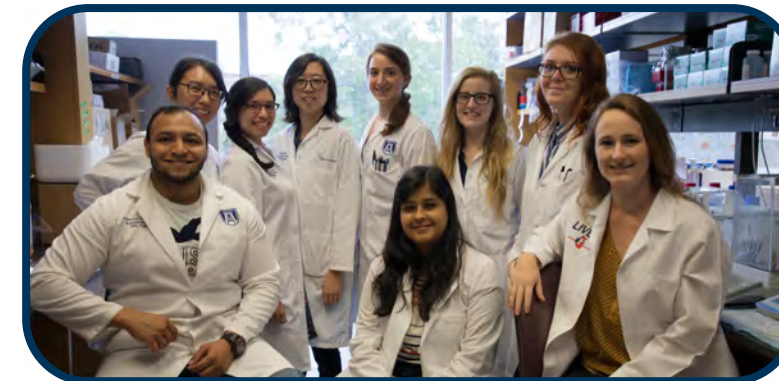
The R. Clinton Webb Postdoctoral Travel Award was created this year to recognize scholarship, leadership and service by a Postdoctoral fellow in the Department of Physiology, Medical College of Georgia at Augusta University. Scholarship activity includes, but is not limited to, external funding, refereed publications and national and/or international presentations. Service includes, but is not limited to, contributions to teaching, training, and committee service. Each year, Postdoctoral fellows are encouraged to apply and one will be selected by a committee to receive \$1,000 for use in the next year to cover travel expenses related to a scientific conference.



Congratulations to the first recipient of the R. Clinton Webb Postdoctoral Travel Award, Dr. Ellen Gillis!

Physiology Trainees received 22 travel awards in the past year.

Graduate Students



Back Row (left to right): Yanna Tian, Lindsey Ramirez, Yue Pan, Elinor Mannon, Sarah Ray, Kasey Belanger

Front Row (left to right): Mahmoud Abdelbary, Shinjini Choudhary, Cassandra Derella

Not pictured: Olufunke Arishe, Alec Davilia, Vanessa Dela Justina, Daniel Fehrenbach, Ladonya Jackson, Patricia Martinez-Quinones, Lia Taylor

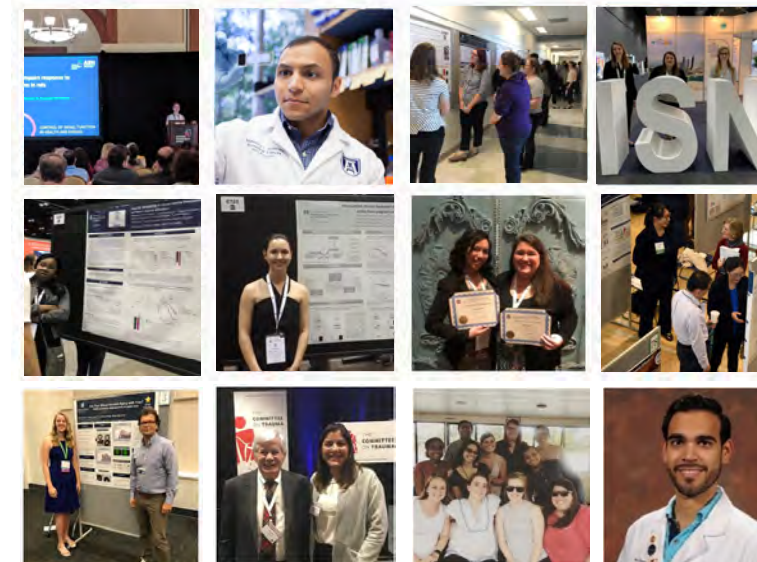
Welcome our newest trainees to the labs!

Shinjini Chowdhury—Mentor Dr. Wendy Bollag—Graduate Student

Daniel Fehrenbach—Mentor Dr. David Mattson—Graduate Student

John Henry Dasinger—Mentor Dr. David Mattson—Postdoctoral Fellow

Xueping Wan—Mentor Dr. Weiqin Chen—Postdoctoral Fellow



Keep up with our trainees on Instagram!

Scan the QR code below or visit www.instagram.com/aug_physiology

Recent Grad Student Awardees

Mahmoud Abdelbary

Mentor Dr. Jennifer Sullivan

- Caroline tum Suden/Francis A. Hellebrandt Professional Opportunity Award

Shinjini Chowdhury

Mentor Dr. Wendy Bollag

- First prize in the graduate student poster competition during VA Research Week

Alec Davila

Mentor Dr. Zsolt Bagi

- National Heart, Lungs, and Blood Institute F31

Vanessa Dela Justina

Mentor Dr. Fernanda Priviero

- Finalist for the Robert Gunn Student Award

Lindsey Ramirez

Mentor Dr. Jennifer Sullivan

- Caroline tum Suden/Francis A. Hellebrandt Professional Opportunity Award
- Research Distinction Award from the Water & Electrolyte Homeostasis Section of American Physiological Society

Cassandra Derella

Mentor Dr. Ryan Harris

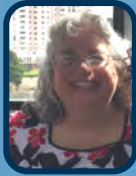
- Caroline tum Suden/Francis A. Hellebrandt Professional Opportunity Award

Patricia Martinez Quinones

Mentor Dr. Clinton Webb

- Second Place, Basic Laboratory Research Scientific Papers on Trauma Resident Paper Competition American College of Surgeons Committee on Trauma
- First place, 2019 Resident Basic Science Paper Competition Moretz Surgical Society
- 2019 American Physiological Society Cardiovascular Section Research Recognition Awardee
- First Place 2018 Basic Science Category, American College of Surgeons Committee on Trauma Region IV
- Trainee Advocacy Committee Onsite Poster Award American Heart Association Council on Hypertension

Training Program Q&A



Dr. Wendy Bollag
Director of the Office of
Postdoctoral Affairs



Dr. Jennifer Sullivan
Biomedical Sciences first year
Graduate Program Director



Dr. Yisang Yoon
Director of Department
of Physiology Graduate
Program

Why is physiology important? Why did you choose it as a specialty?

Dr. Wendy Bollag: My undergraduate training was in biochemistry but although I liked learning about molecules and their structures, I wanted to know how these molecular entities fit into the big picture, how they participate in ensuring homeostasis, and how they regulate the body's responses to changes in the external and internal environment. Therefore, for my doctoral work I applied to and entered a physiology graduate program and have never regretted my decision. An understanding of physiology has allowed me to educate others, contribute to research in a range of biomedical disciplines and hopefully improve human health in the near future.

Dr. Jennifer Sullivan: Physiology is the study of the fundamental mechanisms that dictate the function and health of all living organisms. As such, I view physiology as the foundation for most of the fields of study in the biomedical sciences. I received my PhD training in cardiovascular pharmacology, although the questions that I was interested in asking had their basis in physiology. Therefore, when the opportunity arose, I chose to join the Physiology Department at the Medical College of Georgia (MCG) at Augusta University (AU).

Dr. Yisang Yoon: Physiology is at the core of biomedical science. Its "mission" is to uncover what the life is and how life process works. A disease occurs when any of these processes go awry. Once you know how it works, you can fix the problem when something goes wrong. So I can say that physiology is the discipline that not only satiates scientists' curiosity but also produces the fundamental knowledge necessary for curing diseases. Every life process requires energy. My own research is the study of mitochondria, the essential and elaborate system that produces energy. It was natural that physiology has become the discipline for my work.

What are the strengths of our trainee program?

Dr. Bollag: The Department of Physiology at MCG is a cohesive and collegial group of researchers and educators who are engaged in scientific and institutional life. The people in the Department get along well, have fun together and enjoy helping each other, and also trainees, in attempting to answer important questions about how the body works physiologically and what goes wrong in disease states.

Dr. Sullivan: The strength of our program is our faculty, mentors, and other students. The culture of the Department is one that promotes the development and success of our trainees. The administration of the department values the contribution of the trainees and actively works to provide resources and opportunities for success. The faculty are committed to the training and promotion of our trainees including the development of customized course work and

the maintenance of state-of-the-art research programs. Finally, the other trainees in the department reinforce the sense of community by supporting one another, both in the lab and outside.

Dr. Yoon: Our program has great mentors that are world-class scientists and experts in trainee development, which is evidenced by high success rate of obtaining trainee fellowships. Also, the courses and departmental fellowship are designed to support successful completion of the degree as well as next stage of trainees' career.

Do we offer any benefits that other departments or universities may not? If so, what are they?

Dr. Bollag: One of the great opportunities that the Graduate School at Augusta University offers to students is the ability to present their research at the annual Graduate Research Day. This gives trainees the opportunity to talk about their science in a welcoming and constructive environment and is a wonderful initiation to the poster sessions that are part of all scientific conferences. As for the Department and as I indicated above, the people in the Department of Physiology at MCG are extremely friendly and collaborative; in addition, the faculty are eager to contribute in any way possible to improving the research and educational environment at AU.

Dr. Sullivan: The Physiology Department at MCG provides a number of unique opportunities for our PhD students. The Department supports a fellowship to send a PhD student annually to participate in the APS Professional Writing Skills Course, the students run a department sponsored lectureship each year, and students have multiple networking opportunities through the external seminar series and the annual mini-symposium. Indeed, together the invited lectureships, seminar series, and mini-symposium bring in ~15-20 leaders in the physiology and the students have individualized time to meet with each of these outstanding scientists.

In addition to providing numerous opportunities for professional development, the Department also recognizes the importance of building relationships within the department and maintaining a culture that encourages collegiality and collaboration. To this end, the Department hosts a number of annual social events that includes both faculty, staff, and trainees throughout the year.

How do you ensure the trainee has a productive time while enrolled?

Dr. Bollag: I love having trainees in my laboratory as they are generally so excited to try new things and enthusiastic about science. I try to strike a balance between providing guidance and allowing independence to experiment and learn about the scientific process on their own. I encourage trainees to read the appropriate literature and help them to gain critical thinking skills by discussing relevant articles in our biweekly

laboratory meetings. Since networking is so important in science, I also urge trainees to attend meetings whenever possible. There is a regional meeting that I attend every year with my lab members, the Southeast Regional Lipid Conference; one of the reasons that this is my favorite conference is because essentially all of the talks, except for the keynote lectures, are presented by trainees. In addition, the meeting attendees are very friendly, asking questions and offering advice in a constructive and kind manner, thereby creating a wonderful opportunity for my trainees to "get their feet wet" in presenting their research to the scientific community.

Dr. Sullivan: The productivity and success of each trainee depends on the trainee, major advisor, and committee working together towards a common goal. While the Department of Physiology at MCG provides everything necessary to ensure the success of each trainee, in the end it comes down to effective communication, hard work, and sometimes some luck, to maximize the productivity of each trainee.

Dr. Yoon: "Productive" as successful completion of PhD degree? Or scientific productivity? Well, either one cannot happen without the other. We make sure the students are correctly on schedule for each milestone required for the degree. The program has certain standards that students need to meet. One example is the publication requirement and the majority of the students exceed this requirement. The main job of the mentors and dissertation committee is to guide and advise the students for successful completion of the degree, and they are fully committed to it.

Would our current trainees encourage others to join? What else do they think of the program?

Dr. Bollag: I do believe our trainees would encourage others to join the Program because of the strengths of the Department of Physiology at MCG we've mentioned. The members of the Department are like a family; we help each other and have fun together not only at parties and retreats but also whenever we discuss science. I think that our trainees enjoy this atmosphere

and would express their satisfaction with the Program.

Dr. Sullivan: I like to think that our current trainees would encourage others to join the Physiology Graduate Program. We have an outstanding Program that works hard to address the needs of each individual student. In addition to helping our students reach their individual goals, the Department is made up of truly nice people. It is a group that I am proud to work with and enjoy spending time with.

What is your long term vision for the trainee program?

Dr. Bollag: I would love to see our Graduate Program used to "grow our own," or in other words, to train students who return after their postdoctoral fellowships to bring new techniques and approaches to the Department of Physiology at MCG and train the next generation of students.

Dr. Yoon: Our trainee program has been around for a while because it has been successful, so the long-term vision is to continue the success. The success of the physiology graduate program is essential for the Department of Physiology at MCG which is inevitably tied to the available funding. Our new Chair Dr. Mattson recognizes this and will start a new initiative to maintain the funding for graduate students. The number of students in the program is on an upward trend, and this new initiative will help expand and sustain our graduate program. As we produce a larger number of successful physiologists, we hope that they come back to the department, and contribute to our program.

"I see each of our graduates as a 'notable success' and my vision is for the program to continue to grow and thrive."

Dr. Jennifer Sullivan

Lois Ellison Lectureship

Dr. Ellison was an internationally recognized physiologist, the first female postdoctoral fellow in the department, and one of the longest serving faculty members in Augusta University's history. She devoted more than a half century of service to the Medical College of Georgia and was featured in the National Institutes of Health National Library of Medicine's exhibition: Changing the Face of Medicine: Celebrating America's Women Physicians.

The Physiology Trainees are responsible for the nominations and election of guest speakers as well as for the organization of the lecture.

December 12, 2019 Lois Ellison Lecturer



Karen A. Griffin, MD, FAHA, FASN, FACP

Chair, American Heart Association Council on Hypertension
Chief, Section of Nephrology
Edward Hines, Jr. VA Hospital
Professor of Medicine
Loyola University Medical Center

Dr. Griffin's research has been instrumental to understanding the role of hypertension in the progression of chronic kidney disease.

Complete seminar schedule available online

https://www.augusta.edu/mcg/phy/phys_seminars.php

National Scientific Honors



Dr. Jennifer Sullivan received the prestigious Mid-Career Award for Research Excellence from the Council on Hypertension with American Heart Association. The award recognizes an investigator who has made significant contributions related to hypertension or cardiovascular research. Dr. Sullivan was selected as the recipient for the inaugural John Laragh Research Award from the American Journal of Hypertension. The new award honors an exemplary basic, clinical, translational, epidemiology, population science or health systems investigator under age 45.



Dr. Clinton Webb was honored with the American Heart Association's highest award, the 2018 Excellence Award for Hypertension Research (formerly the Novartis Award for Hypertension Research) from the American Heart Association's Council for High Blood Pressure Research. "Dr. Webb is a prolific investigator who more than 40 years after giving his first presentation on the dilation of blood vessels, remains passionately immersed in the field of vascular biology and hypertension," said Dr. David C. Hess, Medical College of Georgia Dean. "His tremendous body of published, pertinent work and his unique style of mentoring the next generation of vascular physiologists make him an icon in the field of hypertension research."

Dr. Bollag's paper "Obesity, hypertension, and aldosterone: Is leptin the link?" was one of the top-cited articles in the Journal of Endocrinology for the year 2018.

Abstract: Obesity is a serious health hazard with rapidly increasing prevalence in the United States. In 2014, the World Health Organization estimated that nearly 2 billion people worldwide were overweight with an estimated 600 million of these obese. Obesity is associated with many chronic diseases, including cardiovascular disease and hypertension. Data from the Framingham Heart study suggest that approximately 78% of the risk for hypertension in men and 65% in women is related to excess body weight, a relationship that is further supported by studies showing increases in blood pressure with weight gain and decreases with weight loss. However, the exact mechanism by which excess body fat induces hypertension remains poorly understood. Several clinical studies have demonstrated elevated plasma aldosterone levels in obese individuals, especially those with visceral adiposity, with decreased aldosterone levels measured in concert with reduced blood pressure following weight loss. Since aldosterone is a mineralocorticoid hormone that regulates blood volume and pressure, serum aldosterone levels may link obesity and hypertension. Nevertheless, the mechanism by which obesity induces aldosterone production is unclear. A recent study by Belin de Chantemele and coworkers suggests that one adipose-released factor, leptin, is a direct agonist for aldosterone secretion; other adipose-related factors may also contribute to elevated aldosterone levels in obesity, such as very low-density lipoprotein (VLDL), the levels of which are elevated in obesity and which also directly stimulates aldosterone biosynthesis. This focused review explores the possible roles of leptin and VLDL in modulating aldosterone secretion to underlie obesity-associated hypertension. © 2016 Society for Endocrinology.

Xie D, Bollag WB. Obesity, hypertension and aldosterone: is leptin the link? *J Endocrinol.* 2016 Jul;230(1):F7-F11. doi: 10.1530/JOE-16-0160. Epub 2016 Jun 1.

Dr. O'Connor one of the Top 10 Most Visited Releases for 2018

Dr. Paul O'Connor's news release *Drinking baking soda could be an inexpensive, safe way to combat autoimmune disease* was one of the top 10 most viewed releases of 2018 for *EurekaAlert!*, *Genetic Engineering & Biotechnology News*, and *MedXpress*.

Alumni Spotlight

Dr. David Osmond, Assistant Professor at the University of North Georgia and former Medical College of Georgia Department of Physiology postdoctoral fellow, recently received a Teaching Excellence Award. This award is to highlight teachers that are consistently demonstrating outstanding teaching, including activities designed to advance the quality and practice of teaching and learning, to develop critical thinking and problem solving skills, and/or global and multicultural understanding.



"My time in the Department of Physiology at the Medical College of Georgia prepared me to be a better educator and innovator of science curriculum. The Physiology Department is a phenomenal place to acquire the necessary professional skills for today's academic and research leaders."

Current Academic and Professional Positions of Department Alumni

Yasir Abdul, PhD: Instructor, Medical University of South Carolina

Rabei Alaisami, MD, MPH: Clinical Quality Assurance Coordinator, Augusta University

Katherine (Hatcher) Covington: Research Manager, Institute of Public and Preventive Health, Augusta University

Fernanda R. Giachini, PhD: Assistant Professor, Federal University of Mato Grosso

Jennifer Iddings, PhD: Postdoctoral Fellow, Spinal Cord Injury Clinical Research Scientist, Shepherd Center

Nicole Klee, PhD: Manager of Medical Affairs, Reata Pharmaceuticals

Weiguo Li, PhD: Assistant Professor, Medical University of South Carolina

Hildebrando Candido Ferreira Neto, PhD: Postdoctoral Research Associate, Georgia State University

Isabell (Scherer) Wells, PA C: Physician Assistant, Kaiser Permanente

Physiology Magnified

Dr. Zsolt Bagi

- “New target found for disease of the heart’s smallest blood vessels” (EurekAlert!)
https://www.eurekalert.org/pub_releases/2019-08/mcog-ntf081219.php

Dr. Wendy Bollag

- “Lipid that aids normal skin turnover may help psoriasis” (EurekAlert!)
https://www.eurekalert.org/pub_releases/2018-11/mcog-lta112718.php
- “Doctors work to find new ways to treat Psoriasis” (WJBF News Channel 6 ABC)
<https://www.wjbf.com/csra-news/doctors-work-to-find-new-ways-to-treat-psoriasis/>

Dr. Michael Brands

- “Peptide shows promise for protecting kidneys from nephritis” (EurekAlert!)
https://www.eurekalert.org/pub_releases/2019-03/mcog-pp032219.php

Dr. Philip O’Herron

- “Scientists explore blood flow bump that happens when our neurons are significantly activated” (ScienceDaily)
<https://www.sciencedaily.com/releases/2019/07/190715094611.htm>

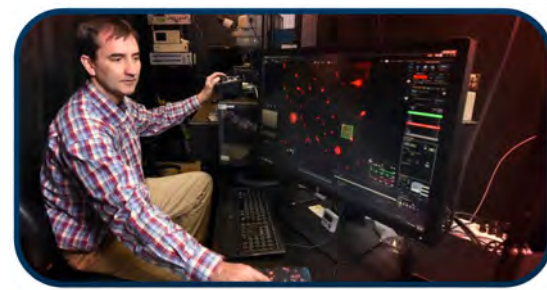
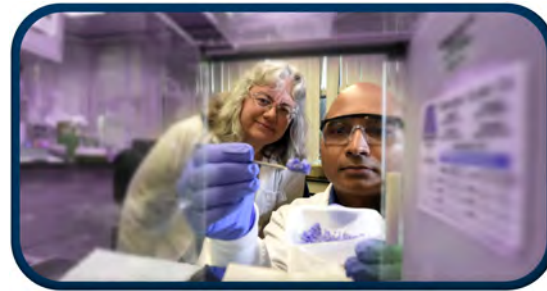
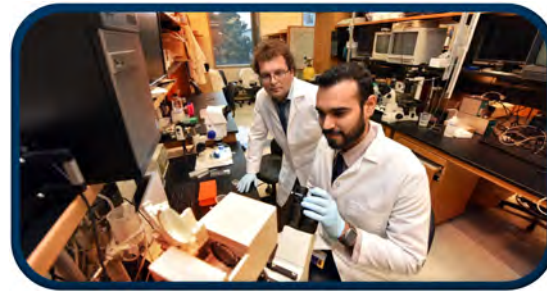
Dr. Jennifer Sullivan

- “Research shows high-fat diets are bad for blood pressure, even in young people” (WJBF News Channel 6 ABC)
<https://www.wjbf.com/csra-traffic/research-shows-high-fat-diets-are-bad-for-blood-pressure-even-in-young-people/>
- “High-fat diets appear bad for blood pressure in younger males and females” (ScienceDaily)
<https://www.sciencedaily.com/releases/2019/01/190108084447.htm>

Dr. Clinton Webb

- “Webb receives top honor from AHA Council on Hypertension” (EurekAlert!)
https://www.eurekalert.org/pub_releases/2018-09/mcog-wr083018.php
- “‘Danger’ molecules may increase cardiovascular risk from early life stress” (MedicalXpress)
<https://medicalxpress.com/news/2018-09-danger-molecules-cardiovascular-early-life.html>

Read more Department of Physiology at Medical College of Georgia at Augusta University News online
www.augusta.edu/mcg/phy/phys_news.php



Dr. Virendra Mahesh (1932-2019)



“Dr. Virendra B. Mahesh, 87, of Huntsville, Alabama, born April 25, 1932, in Khanki, Punjab, India, died Tuesday, July 16, 2019 at Magnolia Trace in Huntsville, Alabama. Dr. Mahesh was a renowned scientist and academician whose research on steroid hormones led to a greater understanding of their role in physiology and disease, and to the development

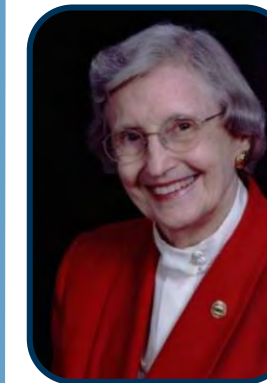
of groundbreaking treatments for infertility. He did the basic research which determined that progesterone combined with estrogen in a birth control pill could produce contraceptive impact with much lower risks of blood clots, resulting in benefits for millions of women worldwide. His lifelong devotion to science began when he earned a bachelor’s degree in chemistry from Patna University, India. He also earned a PhD in organic chemistry from Delhi University, India (1955) and a DPhil in biological sciences from Oxford University, England (1958). He joined the Medical College of Georgia, in Augusta, Georgia as a member of the Department of Endocrinology faculty in 1959, a department he later chaired. He also established the PhD program in Endocrinology and was the major advisor to 11 MS and 25 PhD students. Over the course of his career, he published more than 470 scientific articles. Even after retirement and after moving to Huntsville in 2006, he remained an active member of the scientific community and edited multiple scientific journals, including serving as editor-in-chief of the *Biology of Reproduction* journal from 1999-2004.”

By Laughlin Service Funeral Home, July 23, 2019



To learn more about Dr. Mahesh's career and to support his namesake lectureship, please visit
<https://www.augusta.edu/mcg/phy/mahesh.php>

Dr. Lois T. Ellison (1924-2019)



“Dr. Lois Taylor Ellison, provost emeritus at Medical College of Georgia (MCG) and one of the longest serving faculty members in its history, died at age 95.

Ellison, who was the historian in residence for the medical school at Augusta University (AU), was a pioneer not only at MCG but for medical education nationwide. She came to MCG in 1943 as a 19-year-old and one of only four women in her class and often was the first woman to hold many of the college’s positions.

She helped establish the school’s Cardiopulmonary Laboratory in 1956 and served as its first director, AU President Brooks Keel said in a message to colleagues. She would direct that office nearly 40 years and also was a professor of medicine, surgery and graduate studies.

When she was appointed provost in 1975, she was the highest-ranking woman in any U.S. medical school at the time. She also served as vice president for academic affairs and associate vice president for planning.

“Dr. Ellison devoted more than a half-century of service to our medical school and her beloved alma mater,” Keel said. “Her reputation as a tireless advocate for education and research excellence often preceded her, but for those who knew her, it was her compassionate and altruistic spirit that made her remarkable. Her devotion to the Medical College of Georgia and her steadfast commitment to medical students and faculty ensured that her influence was felt well beyond her tenure as a faculty member and administrator.”

After she retired from MCG as provost and professor emeritus, Ellison stayed on as historian in residence and provided a living memory of what took place there over 70 years at the school.

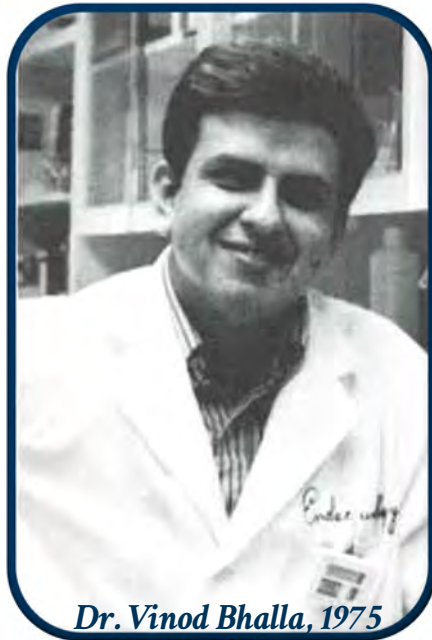
She and her husband, the late Dr. Robert G. Ellison, a renowned heart surgeon, raised five sons, three of whom became doctors, as well as a grandson who became a physician.”

By Tom Corwin, *Augusta Chronicle*, April 23, 2019



To learn more about Dr. Ellison's career and to support her namesake lectureship, please visit
www.augusta.edu/mcg/phy/postdoc/ellison.php

Foundation/Endowment Giving



Dr. Vinod Bhalla, 1975

Thank you, Dr. Vinod Bhalla, for your generosity!

Dr. Vinod Bhalla was a Physiology and Endocrinology faculty member under former Chair Dr. Virendra B. Mahesh and generously donated to three departments at Augusta University, the departments of Physiology, Oncology, and Obstetrics & Gynecology.

The Department of Physiology was granted a \$50,000 endowment titled "The Mr. Sohrab Modi and Mr. and Mrs. Lal C. Bhalla (Shanti) Endowment Fund" from Dr. Bhalla. This donation was made in honor of Dr. Bhalla's mentor and parents. The purpose of the fund is to "supplement research expenses of the Department of Physiology faculty, including research supplies and personnel, at the discretion of the Chairman of the Department of Physiology. The fund may also be used to support graduate and MD/PhD students. This named endowment honors the mentor and parents, respectively, of long-time Medical College of Georgia professor of endocrinology and physiology Vinod K. Bhalla, PhD."

A Look Back In Time



The Endocrine Group, June 19, 1990

The Endocrine Group merged with the Physiology Department in 1986.

Front Row: Drs. Pomila Singh, Barbara Conway-Myers, Laura Murphy, Virendra Mahesh, Bruce Goldman, Carol Bagnell, Brooks Keel, Kevin Osteen, Paul Dmowski, Michael Melner

Second Row: Drs. Thomas Abney, Elizabeth Brown, Kenneth Roper, Darrell Brann, Carol Lapp, Kenneth Korach, James Ellegood, Max Poole

Third Row: Drs. Rogers Byrd, Russell Myers, Jaime Steinsapir, Elizabeth Smanik, Juan Calderon, Gary Watson, Thomas Ogle, Iruvanti Rao, Allen Costoff

Back Row: Drs. Thomas Mills, Richard Parker, John Cidlowski, Francisco Rojas, James O'Conner, Vinod Bhalla, Lawrence Hendry, Chester Hendrich

Consider a gift to the Department of Physiology

Physiology Graduate Student and
Postdoctoral Fellow Endowment Fund

Endocrinology Fund

Greenblatt Lectureship

Herbert S. Kupperman Endowed Chair

Lois Ellison Lectureship

Mahesh Lectureship and Graduate Award

Mr. Sohrab Modi and Mr. and Mrs. Lal
C. Bhalla (Shanti) Endowment Fund

Thomas Muldoon Lectureship

Hamilton Memorial Fund

*For more information on these funds or
to make a contribution please visit us at
www.augusta.edu/mcg/phy/phys_gift.php*





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2018 Halloween



An Inner Look at Physiology

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