Erin Bruce, PhD

University of Florida, College of Pharmacy
Department of Pharmacodynamics
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Education

2008 - 2013 **University of Florida, Ph.D**. **December 2013**
Pharmacodynamics
Novel Roles for Angiotensin-(1-7) and Angiotensin II Type 2 Receptor Activation in the Treatment of Cardiovascular Disease.
Advisor: Michael J. Katovich

2003-2007 **Louisiana State University, B.S. May 2007**
Biological Sciences major; Chemistry minor

Professional Experience

2024 – Present **Clinical Assistant Professor,** Department of Pharmacodynamics, College of Pharmacy, University of Florida

2017 – Present Lecturer, Department of Physiology and Aging, College of Medicine, University of Florida

2016 – 2017 Postdoctoral Assistant, University of Florida, College of Pharmacy, with Eric G. Krause

2014 –2016 Postdoctoral Fellow, University of Florida, College of Medicine, with Philip J. Scarpace and Nihal Tümer

Professional Development and Training

2023 Strategic Communications Academy for Leaders and Scholars – Center For Public Interest Communications, University of Florida

2022 PrEP-E Fellowship – Preparing Effective Physiology Educators Summer Fellowship, American Physiological Society Teaching Section

2020 Best Practices for Teaching Online Certificate

2018 Team-Based Learning Fundamentals Certificate

Awards and Honors

2023 *New Investigator Award*. American Physiological Society, Teaching Section APS Summit Long Beach, Ca.
2019 - 2022 *Exemplary Teacher.* University of Florida College of Medicine
2022 *PrEP-E Fellow*. American Physiological Society
2017 *New Investigator Award*. Council on Hypertension *Hypertension*. 2017; 70: AO84.
2015 *Onsite Trainee Poster Award.* Council on Hypertension Scientific Sessions. *Hypertension*. 2015; 66: AP105.

2014 - 2017	*T32 Postdoctoral Fellow*. Hypertension Center, University of Florida, College of Medicine.
2011 - 2013	*Pre-doctoral Fellow.* American Heart Association Greater Southeast Affiliate.
2011	*American Foundation for Pharmaceutical Education (AFPE) Fellow*

Teaching Experience

2022 – 2023 PAS 5025 Physician Assistant Studies (PAS) *Introduction to Physiology*
Course Director and **Lecturer**
- Coordinate Teaching Faculty
- Update Curriculum
- Lectures on Plasma Membrane, Action Potential, Neuron, and Respiratory Physiology

2021 – 2023 GMS 6488 Physiology and Aging Scientific Communication
Course Director and **Lecturer**
- Developed Curriculum
- Applied for Course Approval
- Lectures on Best Practices for Writing Reviews and giving Professional Oral Presentations

2018 – 2024 GMS 6471-3 Graduate Medical Studies (GMS) *Fundamentals of Physiology and Functional Genomics*
Course Director and **Lecturer**
- Coordinate Teaching Faculty
- Update Curriculum
- Lectures on Core Concepts of Physiology, Cardiovascular Physiology, Neurophysiology, Endocrine Physiology

2017 – 2024 GMS 6474 *Medical Cardiovascular and Muscle Physiology*
Course Director and **Lecturer**
- Course Redevelopment 2018-2019
- Create and Grade Assessments
- Mentor Teaching Assistants
- Lectures on Neural and Endocrine Control of Blood Pressure

2017 – 2024 GMS 6400c 6411 *Principles of Medical Physiology: Medical Cardiovascular and Muscle Physiology*
Course Director and **Lecturer**
- Course Redevelopment 2022-2023

2017 – 2024 BMS 3521 Biomedical Sciences (BMS) *Human Physiology in Translation.* Undergraduate Medical Physiology.
Lecturer 2017 – Present
- Lectures on Cardiovascular Physiology and Endocrinology

Course Director 2020 – Present
- Course Redevelopment 2020-2022

- Introduced "Flipped Classroom," Team Based Learning, and Active Learning techniques

2015	GMS 6893	Clinical and Translational Science Institute (CTSI) Student Seminars. **Lecturer** • Lecture Title "Studying Age-Related Obesity"
2015	GMS 6417	Integrative Physiology of Aging. **Lecturer** • Lecture Title "Age-Related Obesity"
2012 – 2013	IDH 2931	Interdisciplinary Honors (IDH) Seminar, University of Florida Student Science Training Program for Outstanding Florida High School Students. **Team Leader** *Human Physiology and the Emergence of Disease: The Good, The Bad, and the Ugly* • Develop curriculum for course • Lectures on Cardiovascular Physiology • Create quizzes and exam questions
2008 – 2012	PHA 5560	Pharmacy Doctoral Studies (PHA) *Physiological Basis for Disease.* **Graduate Teaching Assistant** • Grading Assignments • Proctoring Exams • 2011-2012 Tutor Students • 2012 Lecture *Pathophysiology of Type 2 Diabetes Mellitus*

Mentoring Experience

2022-2023	Teaching Assistants	Kelly Healy, Baylea Davenport, Mariana Lopez, Steven Beck
2014 –2016	Research Assistants	Yasemin Sakarya

Completed Research Support

Center for Neurobiology of Aging**,** University of Florida, 12/2014 - "*A Central Connection Between the Renin-Angiotensin System and Food Intake Mechanisms Contributes to Obesity and Hypertension with Aging.*" Pilot Funds: $9050.

Center for Hypertension, University of Florida, T32-Training Grant, NIH
Postdoctoral Fellowship 3/14/14 – 3/14/17

American Heart Association Greater Southeast Affiliate
Predoctoral Fellowship 6/2011 – 6/2013

Invited Talks

1) "Finding Your Homeostasis" Presented to Rehman Medical College, Pakistan Physiological Society and South Asian Association of Physiologists Regional Webinar "Using Knowledge of Physiology to Achieve Success." June 2023

2) "Cardiovascular Physiology." Guest Lecturer for Summer Health Professions Education Program (SHPEP). June 2023

3) "ACE2 Activator Reduces Adiposity, but Preserves Lean Mass in Young and Old Rats." Geriatric Research Education and Clinical Center Lunch Seminar Series, North Florida/South Georgia Veterans Health System. September, 2015.

4) "Protective effects of Compound 21 on Pulmonary Hypertension and Fibrosis." Satellite Pre-Meeting for Gordon Research Conference on the Renin-Angiotensin System concerning Angiotensin Type 2 Receptor and novel agonist Compound-21. Lucca, Italy. March, 2014.

Publications

1) Henault J, **Bruce EB.** "Achieving Small Goals Can Lead to Bigger Changes Than you Might Expect." *PECOP Blog*. 2023 Jan; https://blog.lifescitrc.org/pecop/

2) Wang LA, de Kloet AD, Smeltzer MD, Cahill KM, Hiller H, **Bruce EB**, Pioquinto DJ, Ludin JA, Katovich MJ, Raizada MK, Krause EG. Coupling corticotropin-releasing-hormone and angiotensin converting enzyme 2 dampens stress responsiveness in male mice. Neuropharmacology. 2018 May; 133:85-93.

3) Rathinasabapathy A, **Bruce E**, Espejo A, Horowitz A, Sudhan DR, Nair A, Guzzo D, Francis J, Raizada MK, Shenoy V, Katovich MJ. Therapeutic potential of adipose stem cell-derived conditioned medium against pulmonary hypertension and lung fibrosis. *Br J Pharmacol*. 2016 Oct; 173(19):2859-79.

4) **Bruce EB,** de Kloet AD. The intricacies of the renin-angiotensin-system in metabolic regulation. *Physiol Behav*. 2016 Nov 22. pii: S0031-9384(16)30819-8.

5) Strehler KYE, Matheny M, Kirichenko N, Sakarya Y, Bruce E, *Toklu HZ*, Carter CS, Morgan D, Tümer N, Scarpace PJ. Onset of Leptin Resistance Shows Temporal Differences Related to Dose or Pulsed Treatment. *Eur J Pharmacol* 2016 May 15;779:177-85.

6) Toklu HZ**,** Scarpace PJ, Sakarya Y, Kirichenko N, Matheny M, **Bruce EB**, Carter CS, Morgan D, Tümer N. Intracerebroventricular tempol administration in old rats reduces oxidative stress in the hypothalamus but does not change STAT3 signaling and SIRT1/ AMPK pathway. *Appl Physiol Nutr Metab.* 2016 Oct 6:1-9.

7) Toklu HZ, Sakarya Y, Matheny M, Kirichenko N, **Bruce E**, Carter CS, Morgan D, Scarpace PJ, Tümer N. Anorexic response to rapamycin does not appear to involve a central mechanism. *Clin Exp Pharmacol Physiol.* 2016 Sep; 43(9):802-7.

8) **Bruce E**, Shenoy V, Rathinasabapathy A, Espejo A, Horowitz A, Oswalt A, Francis J, Nair A, Unger T, Raizada MK, Steckelings UM, Sumners C, Katovich MJ. Selective activation of angiotensin AT2 receptors attenuates progression of pulmonary hypertension and inhibits cardiopulmonary fibrosis. *Br J Pharmacol*. 2015 May; 172 (9): 2219-31.

9) Shenoy V, Gjymishka A, Jarajapu YP, Qi Y, Afzal A, Rigatto K, Ferreira AJ, Fraga-Silva RA, Kearns P, Douglas JY, Agarwal D, Mubarak KK, Bradford C, Kennedy WR, Jun JY, Rathinasabapathy A, **Bruce E**, Gupta D, Cardounel AJ, Mocco J, Patel JM, Francis J, Grant MB, Katovich MJ, Raizada MK. Diminazene attenuates pulmonary hypertension and improves angiogenic progenitor cell functions in experimental models. *Am J Respir Crit Care Med*. 2013 Mar 15; 187 (6): 648-57.

10) Schaub J, **Bruce E,** Haskell-Luevano C. **"**Drugs, exercise, and the melanocortin-4 receptor - different means, same ends: treating obesity**."** Melanocortins: Multiple Actions and Therapeutic Potential Advances. *Experimental Medicine and*

Biology, 2010, Volume 681, 49-60.

11) Shenoy V, Grobe JL, Qi Y, Ferreira AJ, Fraga-Silva RA, Collamat G, **Bruce E**, Katovich MJ. 17beta-estradiol prevents cardiac remodeling in DOCA-salt model of hypertension in rats. *Peptides, 2009; 30(12): 2309-15.*

Abstracts

1) **Bruce EB.** "Updating a 'Sage on the Stage' classroom to a 'Flipped' classroom improved the student experience." *APS Summit, 2023: 60.*

2) **Bruce EB,** Domingos-Souza G, Smeltzer MD, Tan Y, Cahill K, Harden SW, Frazier CJ, Sumners C, Raizada MK, Krause EG, de Kloet AD. Neurons in the Nodose Ganglion that Express Angiotensin Type 1a Receptors Function as Primary Baroreceptor Afferents: An *in vitro* and *in vivo* Optogenetic Study. *Hypertension*. 2017; 70: AO84.

3) **Bruce E**, Sakarya Y, Kirichenko N, Toklu HZ, Morgan D, Tümer N, Carter CS, and Scarpace PJ. Diminazene Aceturate Decreases Fat Mass with No Effect on Food Intake in Young Diet-Induced Obese Rats. Accepted to *Experimental Biology*, San Diego, Ca, 2016.

4) Sakarya Y, **Bruce E**, Morgan D, Tümer N, Carter CS, and Scarpace PJ. Diminazene Aceturate Attenuates Obesity and Promotes a Balance of the Renin-Angiotensin System in Fat and Muscle Tissue in Young and Aged Rats on High Fat Diet. Accepted to *Experimental Biology*, San Diego, Ca, 2016.

5) **Bruce E**, Sakarya Y, Kirichenko N, Toklu HZ, Morgan D, Tümer N, Carter CS, and Scarpace PJ. ACE2 Activator, Diminazene Aceturate, Reduces Adiposity, but Preserves Lean Mass in Young and Old Rats. *Hypertension*. 2015; 66: AP105.

6) **Bruce E**, Sakarya Y, Matheny M, Kirichenko N, Toklu H, Morgan D, Tümer N, Carter CS, and Scarpace PJ. Rapamycin as a Potential Treatment for Obesity. *FASEB J* April 2015 29:818.6.

7) **Bruce E**, Qi Y, Shenoy V, Raizada MK, Katovich MJ. Lenti-Angiotensin-(1-7) transduction of Islet+ cardiac progenitor cells improves the reparative capacity in Doxorubicin induced Cardiomyopathy. *FASEB J* April 9, 2013 27:1184.7.

8) **Bruce E**, Shenoy V, Francis J, Steckelings UM, Unger T, Sumners C, Raizada MK, Katovich MJ. Stimulation of Angiotensin Type 2 Receptor as a Potential Therapy for Pulmonary Hypertension. Accepted to *American Heart Association Scientific Sessions, Nov. 3-7, 2012, Los Angeles, Ca.*

9) **Bruce E**, Shenoy V, Francis J, Steckelings UM, Unger T, Sumners C, Raizada MK, Katovich MJ. AT2 Receptor Agonist, Compound 21, Attenuates Pulmonary Hypertension and Associated Cardiac Pathophysiology via the Vasoprotective ACE2/Ang-(1-7)/Mas axis. Presented at *High Blood Pressure Research Council 2012 Scientific Sessions, Sept. 19-22, 2012, Washington D.C*.

10) Qi Y, **Bruce E**, Shenoy V, Jeffrey C, Lin F, Yuan W, Liu M, Katovich MJ, Raizada MK. Potentiation of reparative capacity of cardiac progenitor cells (CPCs, Islet-1^{+}) by Angiotensin-(1-7) in myocardial infarction (MI)-induced cardiac damage. Presented at *High Blood Pressure Research Council 2012 Scientific Sessions, Sept. 19-22, 2012, Washington D.C.*

11) **Bruce E**, Shenoy V, Rathinasabapathy A, Steckelings UM, Unger T, Raizada M, Sumners C, Katovich M. A Potential New Therapy for Pulmonary Hypertension with the use of Compound 21, an Angiotensin Type 2 Receptor (AT2R) Agonist. Presented at *European Respiratory Society Annual Congress, Sept 1-5, 2012, Vienna, Austria.*

12) **Bruce E**, Shenoy V, Rathinasabapathy A, Steckelings UM, Unger T, Raizada M, Sumners C, Katovich M. Compound-21, an AT2R agonist, as a Novel Drug Therapy for Pulmonary Hypertension. Presented at the *Angiotensin Gordon Research Conference, Feb. 26 – March 2, 2012, Ventura, Ca.*

13) Qi Y, **Bruce E**, Katovich MJ, Raizada MK. Cardiac progenitor cells (Islet-1^{+}) restore myocardial infarction induced cardiac remodeling and dysfunction. *High Blood Pressure Research 2011 Scientific Sessions Abstracts. Hypertension. 2011; 58: e33-e138, P300*

14) Rathinasabapathy A, **Bruce E**, Qi Y, Ma S, Raizada MK, Katovich MJ. Potential beneficial effects of ACE2-Ang-(1-7) axis in doxorubicin-induced cardiomyopathy *FASEB J March 17, 2011 25:848.5*

15) **Bruce E**, Shenoy V, Grobe J, Qi Y, Ferreira AJ, Fraga-Silva R, Collamat G, Katovich MJ. 17β-Estradiol prevents cardiac remodeling in DOCA-salt model of hypertension in rats. *FASEB J April 22, 2009 23:LB77*

References

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