Jasenka Zubcevic, PhD

Associate Professor

Department of Neurosurgery, Brain and Spine · Microbiomes Institute · Neuroscience Institute

University of South Florida

Co-Founder & Inventor · **Panthea Life** · panthealife.com · *biotech for women's health, patent-pending probiotic*

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PubMed: pubmed.ncbi.nlm.nih.gov/?term=Zubcevic+J · LinkedIn

RESEARCH INTERESTS

Interoceptive regulation of cardiometabolic function · microbiota–gut–brain axis in cardiometabolic health and disease · neural control of blood pressure · water and electrolytes · neuro-immune interactions in hypertension · environmental impacts on cardiovascular health · sex differences in disease.

EDUCATION

PhD, Physiology - University of Bristol, Bristol Heart Institute, United Kingdom · **2008**

Dissertation: "Neurogenic mechanism of blood pressure regulation in hypertension: the role of neuronal PI3K in the nucleus of the solitary tract." Primary supervisor: Dr. Julian F.R. Paton.

BSc, Pharmacology with Study in Industry - University of Bristol, United Kingdom · **2003**

EMPLOYMENT

Associate Professor · *University of South Florida - Dept of Neurosurgery, Brain & Spine; Microbiomes Institute; Neuroscience Institute* **2024 – present**

Associate Professor · *University of Toledo - Dept of Physiology & Pharmacology (primary); Dept of Neuroscience (secondary)* **2021 – 2024**

In vivo Biologist · *GSK Pharmaceuticals* **2020 – 2021**

Assistant Professor · *University of Florida - Dept of Physiological Sciences* **2014 – 2020**

Research Assistant Professor · *University of Florida - Physiology & Functional Genomics* **2013 – 2014**

Postdoctoral Fellow · *University of Florida - Dept of Physiology & Functional Genomics* **2010 – 2013**

Postdoctoral Fellow · *University of Pennsylvania - Dept of Cell & Developmental Biology* **2009 – 2010**

Postdoctoral Fellow · *University of North Texas - Dept of Integrative Physiology* **2008 – 2009**

ACTIVE RESEARCH SUPPORT

An integrated microbiota–gut–brain axis model for hypertension signaling

NIH NHLBI · R21 HL179596 · *MPI* · **2025 – 2027** NIH RePORTER →

Neural mechanisms of host–microbiota interaction in hypertension: a potential for bioelectronic medicine

NIH NHLBI · R01 HL152162 · *PI* · **2021 – 2026** NIH RePORTER →

PAST RESEARCH SUPPORT

Gut microbiota in Alzheimer's-associated cognitive impairment
University of Toledo Medical Research Society Award · *PI* · **2024 – 2025**

The gut microbiome as a biomarker of host and ecosystem health in high-salinity environments
University of Toledo Research Award (URFO) · *Co-I* · **2023 – 2024**

Brain–bone marrow interaction in stress-induced hypertension and the protective effects of exercise training
Japan Society for the Promotion of Science · 19KK0251 · *Co-I (PI: Waki, H)* · **2019 – 2024**

Investigating the role of osteoarthritic pain and inflammation in autonomic nervous system shifts
NIH NRSA · F31 (Taylor Yeater) · *Co-mentor* · **2020 – 2023**

Gut–brain axis: functional link between microbial metabolites and neurogenic hypertension
NIH NCCIH · R21 AT010192 · *PI* · **2019 – 2021** NIH RePORTER →

Gut–microbiome–brain axis in cardiovascular disease following prenatal nicotine exposure
Florida Department of Health · 8JK06 · *Co-I (PI: Hayward, LF)* · **2018 – 2021**

Mapping of bone marrow–brain neural pathways in control of homeostasis
University of Kent DVC Partnership Fund · *Co-I (PI: Koutsikou, S)* · **2018 – 2021**

High-salt diet potentiation of Ang II hypertension: novel role for Th17 infiltration into the PVN
NIH NHLBI · R56 HL136692 · *PI* · **2017 – 2019** NIH RePORTER →

Brain–gut microbiome–immune axis in hypertension
NIH NHLBI · R01 · *Co-I (PI: Raizada, MK)* · **2016 – 2020**

ACE2, brain, gut dysbiosis in pulmonary hypertension
NIH NHLBI · R01 · *Co-I (PI: Raizada, MK)* · **2016 – 2020**

Altered sympathetic activity to the bone marrow in neurogenic hypertension
American Heart Association · Scientist Development Grant · *PI* · **2014 – 2018**

AWARDS & HONORS

2025 **John F. Perkins Career Development Award** - *American Physiological Society*

2023 **Departmental Award for Innovation in Research** - *University of Toledo · Physiology & Pharmacology*

2019 **APS Distinction in Scholarship** - *Am J Physiol – Heart and Circulatory Physiology*

2019 **C. E. Cornelius Young Investigator Award** - *College of Veterinary Medicine, University of Florida*

2013 **Onsite Trainee Poster Award** - *AHA High Blood Pressure Research Scientific Sessions*

2011 **Best Presentation Award** - *American Heart Association*

2011 **New Investigator Travel Award** - *American Heart Association*

2006 **Donald J. Reiss Memorial Trainee Award** - *APS Cardiovascular Diseases Section*

SERVICE & LEADERSHIP

- **NIH Study Section** - AN-Z55 Neuroimmune and Neuroinflammation in Neurodegenerative Disorders · **Chair/Co-Chair (2022–present)**

- **NIH Study Section** - DNPD (Diseases and Pathophysiology of the Nervous System) · **Reviewer (July 2026–present)**
- **American Physiological Society** - Committee on Committees, NCAR · **Member (April 2026–present)**
- **American Heart Association** - Hypertension Professional/Public Education & Publications Committee · **Member (2023–present)**
- **American Physiological Society** - Water and Electrolytes Programming Committee · **Councilor (2023–2025)**
- **University of Toledo** - Dept Research Leadership Team; Graduate Admissions Committee · **2021–2024**
- **University of Florida** - Curriculum Committee (Member then Chair), Research Committee, Search Committee, Scholarships & Awards Committee, IT Committee · **2014–2020**

MENTORING

Current Trainees

- **Adriana Plata, BS** - PhD student (gut bacteria in lipid handling) · graduation expected 2027
- **Emily Otmanowsky, BS** - MD/PhD student (microbiota–gut–brain mechanisms of salt-sensitive hypertension) · graduation expected 2027

Recent Graduates

- **Hemaa Kumar, PhD** (2022–2025) - In vivo imaging of serotonergic vagal gut–brain axis in response to gut bacteria
- **Christopher Souders, PhD** (2018–2023, co-mentored) - Interplay between butyrate and TNFα in hypertensive colons
- **Basak Donertas Ayaz, PhD** (2018–2020 visiting & postdoc) - Central H_2S in neuroimmune communication in rodent neurogenic hypertension
- **Niousha Ahmari, PhD** (2017–2020) - Neuroimmune interactions in obesity-induced hypertension
- **Carla Bueno Silva, PhD** (2016–2018, secondary mentor) - Diet rich in inulin-FOS alters intestinal microbiota, brain activity, and cardiovascular response in SHR
- **Tao Yang, PhD** (2015–2018) - Host gut-microbiota interactions in rodent models of hypertension · now Asst Prof, University of Toledo

TEACHING

- **Veterinary Neuroscience** - Course Organizer & Lecturer · University of Florida · 2014–2020 (~120 students/year, 6 years)
- **Advanced Topics in Molecular Medicine (MOME)** - Autonomic control of blood pressure; neurobiology of feeding · University of Toledo · 2021–2024
- **Embryology for Veterinary Students** - Lecturer · University of Florida · 2015–2019
- **Microbiome Graduate Certificate Course** - Course Co-Organizer & Developer · Microbiomes Institute, University of South Florida · 2026–present (launching Spring 2027)
- **Medical Physiology Lab** - University of Bristol · 2006–2007

SELECTED PUBLICATIONS

Selected papers with Zubcevic as first or senior/corresponding author. Full bibliography on PubMed.

1. de Araujo A, Sree Kumar H, Yang T, Alviter Plata A, Dirr EW, Bearss N, Baekey DM, Miller DS, Donertas-Ayaz B, Ahmari N, Singh A, Kalinoski AL, Garrett TJ, Martyniuk CJ, de Lartigue G, Zubcevic J. Intestinal serotonergic vagal signaling as a mediator of microbiota-induced hypertension. bioRxiv 2024;2024.07.17.603451. PubMed →
2. Sree Kumar H, Zubcevic J. Host–microbiota interactions regulate gut serotonergic signaling: implications for hypertension. Am J Physiol Cell Physiol. 2025 Dec 1;329(6):C1742–C1751. PubMed →
3. Plata AA, Otmanowski EB, Zubcevic J. Diet–microbiota–host interactions in regulation of cardiometabolic homeostasis: emerging mechanisms and therapeutic potential. Microbiota Host. 2025 Feb;3(1). PubMed →
4. Sree Kumar H, Wisner AS, Schiefer IT, Alviter Plata A, Zubcevic J. Chronotropic and vasoactive properties of the gut bacterial short-chain fatty acids in larval zebrafish. Physiol Genomics. 2024 Apr 1. PubMed →
5. Dirr EW, Jiracek LG, Baekey DM, Martyniuk C, Otto KJ, Zubcevic J. Subdiaphragmatic vagal nerve stimulation attenuates the progression of hypertension and alters NTS transcriptional networks in the SHR. Physiol Genomics. 2023 Sep 25. PubMed →
6. Zubcevic J, Watkins J, Lin C, Bautista B, Hatch HM, Tevosian SG, Hayward LF. Nicotine exposure during rodent pregnancy alters the composition of maternal gut microbiota and abundance of maternal and amniotic short-chain fatty acids. Metabolites. 2022 Aug 9;12(8):735. PubMed →
7. Zubcevic J, Richards EM, Yang T, Kim S, Sumners C, Pepine CJ, Raizada MK. Impaired autonomic nervous system–microbiome circuit in hypertension. Circ Res. 2019 Jun 21;125(1):104–116. PubMed →
8. Yang T, Ahmari N, Schmidt JT, Redler T, Arocha R, Pacholec K, Magee KL, Malphurs W, Owen JL, Krane GA, Aranda E, Bautista B, Tao L, Sumners C, Cevallos S, Stoltzfus C, Khan MT, Yi G, Joe B, Zubcevic J. Shifts in the gut microbiota composition due to depleted bone marrow β-adrenergic signaling are associated with suppressed inflammatory transcriptional networks in the mouse colon. Front Physiol. 2017 May 5;8:220. PubMed →
9. Zubcevic J, Santisteban MM, Pitts T, Baekey DM, Perez PD, Bolser DC, Febo M, Raizada MK. Functional neural-bone marrow pathways: implications in hypertension and cardiovascular disease. Hypertension. 2014 May;63(5):e129–39. PubMed →
10. Ahmari N, Schmidt JT, Krane GA, Malphurs W, Cunningham BE, Owen JL, Martyniuk CJ, Zubcevic J. Altered bone marrow neural input contributes to systemic inflammation in pre-hypertensive states. Hypertension. 2014. PubMed →
11. Zubcevic J, Waki H, Raizada MK, Paton JFR. Autonomic–immune–vascular interaction: an emerging concept for neurogenic hypertension. Hypertension. 2011 Jun;57(6):1026–33. PubMed →
12. Zubcevic J, Jun JY, Lamont GJ, Murça TM, Shi P, Yuan W, Lin F, Carvajal JM, Lu KX, Sriramula S, Francis J, Raizada MK. Nucleus of the solitary tract (pro)renin receptor-mediated antihypertensive effect involves nuclear factor-κB-cytokine signaling in the spontaneously hypertensive rat. Hypertension. 2013 Mar;61(3):622–7. PubMed →
13. Zubcevic J, Waki H, Diez-Freire C, Gampel A, Raizada MK, Paton JFR. Chronic blockade of phosphatidylinositol 3-kinase in the nucleus tractus solitarii is prohypertensive in the spontaneously hypertensive rat. Hypertension. 2009 Jan;53(1):97–103. PubMed →

Full publication list: pubmed.ncbi.nlm.nih.gov/?term=Zubcevic+J

PRESS & PODCASTS

- **AJP-Heart Podcast** · *Role of Gut Microbiota in Hypertensive Women*
  ajpheart.podbean.com/e/role-of-gut-microbiota-in-hypertensive-women
- **APS Publications Podcast** · *GI Vagus and Hypertension*

apspublicationspodcast.podbean.com/e/gi-vagus-and-hypertension

- **Observer** · *Gut may help lose weight, fight depression, lower blood pressure (Jul 2017)* observer.com/2017/07/gut-may-help-lose-weight-fight-depression-lower-blood-pressure