

*August, 2023*

CURRICULUM VITAE

**ROBERT C. SPETH**

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School of Pharmacy (954) 262-2278 (FAX)  
Nova Southeastern Univ. (662) 291-2014 (Cell)  
Fort Lauderdale, FL 33328-2018

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**Scholastic Record:**

B.A. 1968 Western Maryland College, Westminster, MD (Biology, Psychology)  
(Now McDaniel College)

M.A. 1972 Connecticut College, New London, CT (Physiological Psychology)

Ph.D. 1976 Vanderbilt University, Nashville, TN (Pharmacology)

**Professional Experience:**

1968-1969 Research Assistant: Neurophysiology Laboratory, Hartford  
Hospital, Hartford, CT

1969-1970 Research Assistant: Neurobiology Laboratory, Norwich Hospital,  
Norwich, CT

1971-1972 Teaching Assistant: Department of Psychology, Vanderbilt  
University, Nashville, TN

1973-1974 Teaching Assistant: Department of Pharmacology, Vanderbilt  
University, Nashville, TN

1976-1979 Postdoctoral Research Associate: Department of Pharmacology,  
University of Arizona, Tucson, AZ

08/1977 Guest Investigator: Laboratory of Dr. Jon M. Lindstrom, Salk  
Institute

09-10/1978 Guest Investigator: Laboratory of Preclinical Pharmacology, St.  
Elizabeth's Hospital, Washington, DC

1979 Adjunct Assistant Professor of Pharmacology: University of  
Arizona, Tucson, AZ

1979-1984 Associate Staff: Hypertension Research, Cleveland Clinic  
Foundation, Cleveland, OH

**SPETH, Robert C.**

- 1984-1997 Associate Professor: Department of Veterinary and Comparative Anatomy, Pharmacology and Physiology (VCAPP), College of Veterinary Medicine, Washington State University, Pullman, WA
- 1984-2003 Graduate Faculty: Pharmacology/Toxicology Program, College of Pharmacy, Veterinary Science Program, Washington State University, Pullman, WA
- 03-04/1989 Visiting Associate Professor: Department of Physiology, Quillen College of Medicine, East Tennessee State University, Johnson City, TN
- 07/1990 Visiting Scientist: Laboratory of Dr. Kevin Catt, Endocrinology and Reproduction Research Branch, NICHD, National Institutes of Health (NIH), Bethesda, MD
- 1990-2003 Member, University of Idaho/Washington State University Center for Reproductive Biology.
- 1991-2003 Director: Peptide Radioiodination Service Center, Washington State University, Pullman, WA
- 2003-2009 Director: Peptide Radioiodination Service Center, University of Mississippi, University MS
- 1993-2003 Graduate Faculty: Neuroscience Program, College of Veterinary Medicine, Washington State University, Pullman, WA
- 1997-2003 Professor: VCAPP Department, College of Veterinary Medicine, Washington State University, Pullman, WA
- 1999-2001 Visiting Professor: Department of Neuroscience, Oregon Regional Primate Research Center, Oregon Health Sciences University, Beaverton, OR
- 1999-2003 Adjunct Professor: Department of Physiology and Pharmacology, Oregon Health & Science University, Portland, OR
- 2003-2006 Adjunct Professor: VCAPP Department, College of Veterinary Medicine, Washington State University, Pullman, WA
- 2003- 2007 Professor and Chair of Pharmacology; Professor, Research Institute in Pharmacological Sciences, School of Pharmacy, University of Mississippi, University, MS

**SPETH, Robert C.**

- 2007- 2009 Professor of Pharmacology; Professor, Research Institute in Pharmacological Sciences, School of Pharmacy, University of Mississippi, University, MS
- 2009-2012 Radioiodination Specialist, American Radiolabeled Chemicals, St. Louis, MO
- 2009-present Professor of Pharmaceutical Sciences, College of Pharmacy, Nova Southeastern Univ., Fort Lauderdale, FL
- 2010-present Clinical Affiliate Assistant Professor, College of Pharmacy, Nova Southeastern Univ., Fort Lauderdale, FL
- 2010-present Research Associate, The Institute for Ethnomedicine, Jackson, WY
- 2010-2014 Courtesy Professor, Dept. Physiology and Functional Genomics, Univ. Florida College of Medicine, Gainesville, FL
- 2011-present Adjunct Professor of Bioethics, Health Professions Division, Nova Southeastern Univ., Fort Lauderdale, FL
- 2012-present Adjunct Professor, Dept Pharmacology and Physiology, School of Medicine, Georgetown Univ., Washington, DC
- 2012-2013 Professor, Research Service, Miami VA Medical Center, Miami, FL
- 2016-present Adjunct Professor, Dept Biology, Halmos College of Arts and Sciences, Nova Southeastern Univ., Fort Lauderdale, FL
- 2016-present Professor, Farquhar Honors College, Nova Southeastern Univ., Fort Lauderdale, FL

**Honors and Awards:**

- 1977-1979 National Research Service Award (NRSA) postdoctoral fellow, National Institutes of Health
- 02/1996 Fellow American Association for the Advancement of Science
- 02/1996 iiFAR: Special recognition for outstanding contributions to iiFAR Speakers Bureau
- 02/1996 WABR: Award for volunteer service
- 03/1998 T.S. Williams Lecturer Award, Tuskegee Veterinary Medical Alumni Association
- 10/1998 Dr. Louis J. Kettel Award: iiFAR (incurably ill For Animal Research)
- 04/1999 Washington State University Faculty Library Award

**SPETH, Robert C.**

- 06/2003 Washington State University Science Libraries Service Award
- 10/2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019 External Funding Recognition Award, Nova Southeastern University
- 03/2013 Latino Medical Students Association 2<sup>nd</sup> place winner poster contest  
Catalina Breton, Eduardo Carrera, Andrea Linares (Co-author)
- 04/2014 Nominated by President George Hanbury as the Nova Southeastern University faculty nominee for the Greater Fort Lauderdale Alliance World Class Faculty Award
- 10/2016 2016 Provost's Research and Scholarship Award, Nova Southeastern University
- 1/2017 Million Dollar Club Award, College of Pharmacy, Nova Southeastern University
- 5/2017 2017 World Class Faculty Award, Greater Fort Lauderdale Alliance, Fort Lauderdale, FL.
- 1/2019 PanAmerican Congress Travel Award, American Physiological Society
- 3/2020 Fellow American Heart Association

**Currently Active Scientific and Professional Organizations:**

- American Association for the Advancement of Science
- American Heart Association
- American Physiology Society
- American Society for Pharmacology and Experimental Therapeutics (emeritus)
- Council for High Blood Pressure Research of the American Heart Association
- National Animal Interest Alliance (Advisory Board Member)
- Rho Chi
- Society for Neuroscience
- Washington Association for Biomedical Research (Emeritus Board Member)

**Certifications:**

DOT Hazardous Materials Transportation Training. HRP Associates, Inc., November 15, 2012.

**Courses Taught:**

***University of Arizona (1978-1979)***

Pharm 172a Lectures: autonomic pharmacology

Pharm 353 Lectures: catecholamines and receptor binding techniques

***Cleveland Clinic Foundation (1980-1984)***

⌘ ██████■ Guest Lecturer (Department of Endocrinology): endogenous opiate-like substances (09/1980)

⌘ ██████■ Guest Lecturer (Department of Neurology): principles of chemical neurotransmission; amine and amino acid neurotransmitters; neuropeptide transmitter candidates (01/1981; 02/1981)

⌘ ██████■ Guest Lecturer (Division of Anesthesiology): classical central neurotransmission – amine neurotransmitters; neo-classical central neurotransmission – neuropeptides (12/1982)

⌘ ██████■ Guest Lecturer (Department of Neurology): acetylcholine and other neurotransmitters; neuropeptides (12/1983)

⌘ ██████■ Guest Lecturer (Department of Psychiatry): benzodiazepines – basic science and clinical implication; chemical neurotransmission; classical neurotransmitters; neuropeptides and receptor mechanisms (02/1984)

***Cleveland State University (1984)***

Biol 604 Lectures: neurochemistry

⌘ ██████■ Guest Lecturer (Department of Pharmacology): renin-angiotensin system

***Washington State University (1984-present)***

AS 285 Lectures (*Rights & Welfare of Animals*): animal welfare vs. animal rights

**SPETH, Robert C.**

- Neuro 138 Lectures (*Freshman Special Topics*): introduction to neuroscience; trafficking in used hormones
- Neuro 403 Lectures (*Cellular Neurobiology*): cellular and molecular neuroscience; principles of chemical neurotransmission
- Neuro 495 Honors Research (*Directed Research*): William Barry, Daisy Daubert, Carlin Gray, Jamie Laca
- Neuro 499 Honors Research (*Special Problems*): Daisy Daubert, Amanda Lamp, Douglas Adams
- Neuro 529 Lectures (*Cellular & Molecular Neurobiology*): neurochemistry; receptor autoradiography; amino acid neurotransmitters
- Neuro 538 Lectures (*Neuroendocrinology*): angiotensin and reproductive function
- Neuro 700 Advising/discussions (*Master's Research-Thesis-Exam*): neuroscience
- Neuro 800 Advising/discussions (*Ph.D. Research-Dissertation-Exam*): neuroscience
- PharS 499 Honors Research (*Special Problems*): Robert Moscoe
- Phil 440 Lectures (*The Mind of God and the Book of Nature: Science & Religion*): reductionist view of the mind
- Psych 574 Lectures (*Physiological Psychology*): Chemical neurotransmission
- P/T 501 Course Director (*Fundamentals of Graduate Research in Life Sciences*):  
/VPh 501 historical perspectives in pharmacology and toxicology; ethics and  
/Neuro 501 responsible animal usage
- P/T 502 Advising/discussions (*Faculty Research in Pharmacology & Toxicology*)  
/Neuro 600
- P/T 506 Lectures (*Principles of Pharmacology*): receptor pharmacology and growth factors; autonomic nervous system pharmacology; autacoids

- P/T 540 Lectures (*Neuropharmacology*): receptors, autacoids and cardiovascular
- P/T 561 Lectures (*Receptorology*): renin angiotensin systems; receptorology – radioligand binding (principles, theory, and practice); rate theory; receptor families
- P/T 597 Seminar (*Pharmacology & Toxicology*): pharmacology and toxicology (Course Director: 1991)
- P/T 600 Advising/discussions (*Special Projects/Independent Research*)
- P/T 700 Advising/discussions (*Master's Research-Thesis-Exam*): pharmacology and toxicology
- VM 518P Lectures (*Applied Anatomy of Large Animals*): autonomic nervous system physiology
- VM 522P Lectures (*Veterinary Pharmacology/Toxicology I*): autonomic nervous  
(VM 531) system pharmacology; somatic nervous system pharmacology; autacoids; pharmacodynamics, statistics, drug dosage, fluid and electrolyte pharmacology, organ systems pharmacology (Course Director: 1993)
- VM 523P Lectures (*Veterinary Pharmacology/Toxicology II*): anti-parasitic drugs;  
(VM 533) neuropharmacology (Course Director: 1998)
- VM 540 Lectures (*Research Issues, Ethics & Literacy*): discussed animal rights activism and anti-biotechnology movement
- VPh 529/ Lectures (*Cellular & Molecular Neurobiology*): neurochemistry;  
receptor  
P/T 529 autoradiography; amino acid neurotransmitters
- VPh 533 Lectures (*Veterinary Pharmacology*): cardiovascular pharmacology (Note: predecessor of VM 522P)
- VPh 537 Lectures (*Physiology & Biochemistry of Neuropeptides*): neuroscience (Course Director)
- VPh 600 Advising/discussions (*Special Projects/Independent Research*): neuroscience

**SPETH, Robert C.**

VPh 700 Advising/discussions (*Master's Research-Thesis-Exam*):  
neuroscience

***University of Mississippi 2003 – 2009***

MEDC 541 Problems in Medicinal Chemistry  
Lectures on Ethics/animal models, and Anabolic steroid abuse

PHAR 350 Pharmacy Practice Orientation (One lecture)

PHCL 443 Basic and Clinical Pharmacology I (taught ½ of course 2008 and  
2009)

PHCL 444 Basic and Clinical Pharmacology II (Course Director – 2006 taught  
½ of course 2009)

PHCL 501 Principles of Life Science Research (Course Director 2003-2008)  
Required RCR (Responsible Conduct of Research) course for  
Pharmacology Dept. Graduate Students

PHCL 541 Problems in Pharmacology

PHCL 562 Special Topics in Pharmacology

PHCL 563 Introductory Pharmacology II (taught ½ of course 2008)

PHCL 564 Introductory Pharmacology II (Course Director – 2006 taught ½ of  
course 2008-2009)

PHCL 675 General Principles of Pharmacology and Toxicology I (10 hours of  
lecture on classical neurotransmitters, their receptors and  
signaling mechanisms; 2004, 2006, 2008)

PHCL 676 General Principles of Pharmacology and Toxicology II (3 hours of  
lectures on pathophysiology of cardiovascular system; 3 hours  
of lectures on radiation toxicology; 2007, 2009)

***Nova Southeastern University 2009-present***

PHA7630 APPE - Pharmacological Research (4 credits, Preceptor for Clayton  
Yu, 4<sup>th</sup> year student, College of Pharmacy Summer, 2010).



- PHA7630 APPE - Pharmacological Research (4 credits, Preceptor for Sandra Mathoslah, 4<sup>th</sup> year student, College of Pharmacy Summer, 2011).
- HPH7210 Bioethics: Principles of Life Science Research (Course Director, 3 hour graduate course lecture/discussion format; Health Professions Division, Fall 2010-2021)
- PHRP7110 Bioethics: Principles of Life Science Research (Course Director, 3 hour graduate course lecture/discussion format; Health Professions Division, Fall 2022)
- PHRM5212 Bioethics: Principles of Life Science Research (Course Director, 3 hour graduate course lecture/discussion format; Health Professions Division, Fall 2022 (crosslisted with PHRP7110)
- BIOL 4950 Internship in Biology (3 credits, Research Internships for undergraduate Biology Major students, Farquhar College of Arts and Sciences Fall & Winter semesters, 2010-2022)
- BIOL 4990 Independent study in Biology (1-3 credits, Research Internships for undergraduate Biology Major students, Farquhar College of Arts and Sciences Fall & Winter semesters, 2010-2022)
- PHRP 7014 Molecular and Cellular Pharmacodynamics (3 credits, Winter 2012-2014) Course Director
- PHRP 7014 Molecular and Cellular Pharmacodynamics (3 credits, Winter 2015 -2018, Fall, 2019-2022) Receptor kinetics, dose response, angiotensin system, Cannabinoids pharmacology
- PHA 7610 Scientific writing (Participating faculty, 1 hour graduate course; College of Pharmacy, Winter 2011 - 2016)
- NEUR4950/4990 Research Internship in Behavioral Neuroscience/Independent Studies (1-3 credits) Fall and Winter semesters (2017-2022)
- PHRE 5223 Drugs of Abuse (2 credits, College of Pharmacy Professional Program Fall/Summer 2014-2022) Course Director, 2014, 2020, 2022 Cross listed as PHRE 5224 and PHRE 7223 (3 credits)
- HPH 7400 Research Design (Health Professions Division) Ethical considerations in research design 2016
- PHRP 7226 Journal Club Course Summer session 1 credit hour Course Director 2015-2022
- PHRC6540 PharmacyPractice Seminar Pharmacon Team leader Winter 2016-2023
- PHRC 6920 – Seminar

**SPETH, Robert C.**

- LAW Health Policy, Bioethics, & Quality, "Marijuana 101" Winter 2016, 2017
- NEUR4100 Neurobiology of Disease, The Odyssey of Marijuana, The Endocannabinoid System, Winter 2017
- Neur2500 Introduction to Neuroscience, Instructor of Record Fall 2017
- UNIV1000 First year Seminar, "Forest Bathing" Fall 2017 (one-hour lecture)
- BMHS5300 Pharmacodynamics, Receptor Pharmacology Section Fall 2018 -2022 (1/2 of 3 credits)
- NEUR3200 Drugs and the Brain "Hallucinogens" Winter 2019 (one-hour lecture)
- Brain Body and Behavior Behavior Course, College of Allopathic Medicine, NSU "The Opioid Crisis" Fall 2019 (two-hour lecture)
- PHRC4962 Essentials of Professional Practice II (Winter 2020, Jan 23 Jan 29 facilitate ethics discussions
- PHRE5411 Current Topics Covid-19, Summer, 2020, 2021 2 credits (participating faculty) College of Pharmacy Professional Program. Cross listed as PHRE 7411.
- HON1510L Honors Reading seminar, Fall 2020
- HON1510Q Honors Reading seminar, Fall 2021
- HON1510S Honors Reading seminar, Winter 2022
- PSYC 5210 Sensation & Perception "So There Is No Free Will: Now What? March 14, 2023 (3 hour lecture)

***Guest Lectures/Discussions:***

- +++ Discussion Leader: "The use of triple-drug regimen for execution by Lethal Injection." Preceptor students of Drs. Jennifer Fass and Angela Garcia September 21, 2010
- +++ Discussion Leader: "Drugs used to mitigate damage caused by exposure to ionizing radiation from radioactive materials." Preceptor students of Dr. Angela Garcia April 20, 2011
- +++ Discussion Leader: "The use of Kava and other natural products promoted as relaxing agents." Preceptor students of Dr. Angela Garcia July 19, 2011

-+++- Discussion Leader: "Navigating the turbulent seas of research in the 21st century" lecture/discussion with Graduate students in Dept. Medicine, Georgetown University, June 8, 2012

**Graduate Committees:**

***Ph.D.:***

Natalia Noto (Pharmaceutical Sciences, Molecular Medicine and Pharmacogenomics track 2021-present) Chair

Erick Bourassa (Pharmacology 2008) Chair

Kevin Grove (Neuroscience 1994), Chair

Carlton Jones (Pharmacology/Toxicology)

Julie Chan (Veterinary Science)

Dan Yox (Veterinary Science)

Joel Erickson (Veterinary Science)

Victoria Cook (Veterinary Science)

Kishor Bugarith (Neuroscience)

Cassia Mizuno (Medicinal Chemistry, Ph.D. 2005)

Neha Vyas (Medicinal Chemistry, Ph.D. 2007)

Akshay Patny (Medicinal Chemistry, Ph.D. 2007)

***M.S.:***

Kirsten Laity, Chair

Nooshin Ghazi, Chair

Susan Frenier (Veterinary Science)

Surinder Kaur (Pharmacology) Chair

Ranjita Kokje (Pharmacology) Chair

**SPETH, Robert C.**

Steven Marx (Veterinary Science)

Wendy Wilson (Psychology)

Felicia Rabey (Pharmaceutical Sciences) Chair

Yasmin Polak (Pharmacy, University of Utrecht) Research Advisor

Cassandra Evans (Nutrition Science, Nova Southeastern Univ) Research Advisor

***Post.Doctoral Trainees:***

Rekha Singh, Ph.D. (1982-1984)

Donald Walters, Ph.D. (1986-1988)

Eric Nilsson, DVM, Ph.D. (1990-1992)

Catherina Cabellero-George, Ph.D. (2005-2006)

Vardan Karamyan, Ph.D. (2005-2008)

Abir El Alfy, Ph.D. (2006-2007)

Christopher Neagra, DO (2016-2018)

Felipe Stoyell-Conti, Ph.D. (2018-2020)

Aline de Souza, Ph.D. (co-advisor, 2019-2021)

Sajini Hettiarachchi, Ph.D. (Post-Doctoral mentor, 2022-present)

**Post-Baccalaureate Trainees:**

Yazmin Restrepo

Mamiko Swanson 2022 (co-advisor with Mohammad Sabbir)

**Former Graduate Students and Fellows (Most recent known positions):**

Rekha Singh, Ph.D.	Assistant Professor Department of Neurological Sciences Rush Medical Center Chicago, IL
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**SPETH, Robert C.**

- Donald E. Walters, Ph.D. Associate Professor  
Western University of the Health Sciences  
Pomona, CA
- Kevin L. Grove, Ph.D. Vice-President for Obesity Research  
Novo-Nordisk  
Seattle, WA  
Senior Scientist, Division of Reproductive and  
Developmental Science, Oregon National Primate  
Research Center  
Oregon Health & Sciences University  
Beaverton, OR
- Nooshin Ghazi, M.S. Boston, MA
- Eric Nilsson, DVM, Ph.D. Center for Reproductive Biology  
Washington State University  
Pullman, WA
- Kirsten Laity, M.S. Pharmacy Student  
University of Washington
- Catherina Cabellero-George Smithsonian Tropical Research Institute  
University of Panama  
Panama City, Panama
- Ranjita Kokje Pharmacist  
Phoenix, AZ
- Surinder Kaur Pharmacist  
Little Rock, AR
- Abir El-Alfy Assistant Dean for Student Affairs, Associate Professor  
School of Pharmacy  
Medical College of Wisconsin  
Milwaukee, WI
- Vardan Karamyan, Ph.D. Professor  
Department of Foundational Medical Studies  
Head, Laboratory for Neurodegenerative Disease and  
Drug Discovery  
Oakland University William Beaumont School of Medicine  
Rochester, MI 48309
- Erick Bourassa, Ph.D. Associate Professor  
Department of Biological Sciences

	Mississippi Women's College
Felicia Rabey, M.S.	Department of Pharmacology University of Mississippi
Yasmin Polak, M.S.	University of Utrecht Ph.D. Candidate
Christopher Neagra, DO	Baylor University Houston, TX
Filipe Stoyell-Conti	University of Miami Miami, FL
Cassandra Evans	Adjunct Assistant Professor College of Osteopathic Medicine Nova Southeastern University

**Student Advising/Mentoring/Sponsoring:**

***Advisor-***

- Summer Research Diversity Fellowship NIH-NIDDK and American Physiological Society

Carmen DeJesus 2014

- NIH-NHLBI Diversity Fellows

Kira Santos (Post-Baccalaureate Fellow) 2010-2012, D.M.D from the University of Florida, Gainesville, FL

Luz Gonzalez (Undergraduate Fellow) 2010-2012 M.D. from the Medical School at San Juan Bautista School of Medicine, San Juan, PR

Jamala Swindle (Undergraduate Fellow) 2010-2012 Medical Student

Andrea Linares (High School student/undergraduate) 2010-2019. D.O. from Lake Erie College of Osteopathic Medicine, Third-year Neurology Resident at Duke University, Durham, NC

Arline Joachim (High School student) 2013-2014 Graduate of the Ohio State University, Columbus, OH

Malaika Jean-Baptiste (High School student) 2013-2014 Graduate of the University of Central Florida, Orlando, FL

- NIH-NHLBI Undergraduate researchers

Aisha Hanif 2010-2011

Benedict Choi 2010-2011

Max Zimmerman 2010

- NIH-NHLBI High School Researchers

Brigitte Blanco (2013-present) First place winner in State of Florida High School Science Fair 2013 for her research project in the lab. Graduat of Duke University, Durham, NC

- Chancellor's/President's Faculty Research Development Grant Undergraduate Co-Investigators

Jamala Swindle 2011-2012

Luz Gonzalez 2011-2012 Presently in Medical School at San Juan Bautista School of Medicine, San Juan, PR

Andrea Linares 2013-2014 Presently in Medical School at Lake Erie College of Osteopathic Medicine, Bradenton, FL

Carmen DeJesus 2014 – 2016

Brigitte Blanco 2014 – 2015 Presently an Undergraduate Student at Duke University

Natalie Builes 2015-2017

Erin O'Keefe 2016-2017

Alesa Chhabra 2019-2020

- Undergraduate Research Interns (Nova Southeastern University)

Claudin Louis Fall 2010

Max Zimmerman Fall 2010

Lesley Hagan Fall 2011

George Schedrin Fall 2011

Yaneve Shemesh, M.D. Fall 2011 Winter 2012

Eduardo Carrera, M.D. Fall 2012 Winter 2013

Catalina Bretón, M.D. Fall 2012 PGY-4 resident Florida State University

Tsedenia Mesfin Fall 2012

Elizabeth Goldberg, M.D. 2013-2014

Austin Price D.O. 2014 PGY-4 surgery, University of Arkansas Medical School

Sumayyah Abiff 2014

Puja Patel D.O. 2014 Resident with Medstar Health

Bhumi Patel 2015 D.M.D. UF Health, St. Petersburg Dental Center

Rebecca Nosal 2015 Presently Enrolled in Medical School at Nova Southeastern University

Samantha Bergoine 2016-2017

Erin O'Keefe 2016-2017 Presently enrolled in Medical School at University of Miami

Farooq Hassan 2016-2017 Presently Enrolled in Medical School at Nova Southeastern University

Marlin Mathew 2016-2017

Christy Abraham 2016-2018

Shamauri Callahan 2017

Chelsea Matthews 2017

Widelyne Dorsainval 2017

Marina Youssef 2017

Hanna Stewart 2017-2020 "Razor's Edge" Research student presently Enrolled in Osteopathic Medical School at Nova Southeastern University

Sarin Itty 2018-2019 "Razor's Edge" Research student Enrolled in Medical School at Nova Southeastern University

Rachel Ghoubriel 2018

Jeremy Espeut 2018 PharmD.

Joseph Puthentharyil 2018-2019

Zachariya Mujeeb 2019-2022 (Razors Edge Scholar)

Sulaiman Paika 2019-2021 Enrolled in Medical School at Nova Southeastern University

Giovanna Gnosso 2019-2021

Poornma Kodami 2020-2021

Katherine Dookhan 2022-present (Razors Edge Scholar)

Raghavi Vuppula 2022

Isra Rashid 2022

Serena Sha 2022

Anirudh Gopalam 2022

Sejal Jain 2022- present

Kathryn Ong 2022

Julianna Bonnetti 2023-present (Razors Edge Scholar; U-Rise Scholar)

Melanie Mendonca 2023 (Razors Edge Scholar)

College of Osteopathic Medicine students



**SPETH, Robert C.**

Jason Vadhan 2018-2020 College of Osteopathic Medicine student

Rashmi Prasad 2019 College of Osteopathic Medicine student

College of Pharmacy Students

Balsam Elajouz 2019-2020 PharmD.

Daisy Vargas 2019 PharmD.

Pharmacy Student workers (Nova Southeastern University)

Natalie Builes 2015-2016

Danial Mehrenfard 2019-2023

High School Research Interns

Eric Rosenthal 2013- 2014 (Nova University High School)

Benjamin Chilampath 2015 - 2016

Benjamin Goldstein 2015-2017.

Mikayla D'Ambra 2016-2018

Nicholas Mijares 2016-2017

Nova College of Pharmacy 4<sup>th</sup> year rotation students

Clayton Yu Summer 2010, Presently a Pharmacist in CA

Sandra Mathoslah Summer 2011, Presently a Pharmacist in Forest Hill, TX

***Mentor-***

WAMI Medical Scholars Program

Howard Hughes Medical Scholars Program

Daisy Daubert (Professor of Pharmaceutics, Ferris State University)

***Sponsor-***

· McNair Scholars

Ryan Barnes (09/2002-5/2003) MD

**Faculty Mentoring/Sponsoring:**

Young Kwon, Ph.D., Assistant Professor of Pharmaceutical Science; New Investigator Award, American Association of Colleges of Pharmacy application (09/2013)

**SPETH, Robert C.**

Crystal West, Ph.D., Assistant Professor of Medicine, Georgetown University (2016-2020)

Steven Bronsburg, Ph.D, Assistant Professor of Information Science, NSU Mentor Mentee Program, Office of Sponsored Projects, (2017-2019)

Alison Bested, M.D., Assistant Professor, College of Osteopathic Medicine, NSU Mentor Mentee Program, Office of Sponsored Projects (2017-2019)

Young Kwon, Ph.D., Assistant Professor of Pharmaceutical Science; NSU Mentor Mentee Program, Office of Sponsored Projects (2021- 2022)

Rajendra Pangeni, Ph.D., Assistant Professor, College of Osteopathic Medicine, NSU Mentor

### **University Committee Service:**

#### **University Wide**

##### **Nova Southeastern University**

Recycling Committee

Belonging, Inclusivity, Diversity and Equity (BEDI) Committee

#### **College-Wide**

##### **Nova Southeastern University**

Graduate Admissions Committee

Graduate Program Policies and Procedures Task Force

Faculty Development Committee

Research Committee

#### **Departmental**

##### **Nova Southeastern University**

Faculty Development and Scholarship Committee Co-Chair (2011-present)

Doctor of Philosophy Graduate Curriculum Subcommittee (2012- 2013)

Search Committee for Departmental Secretary 2011, 2012

Faculty Search Committee, 2018, 2019

**SPETH, Robert C.**

Chair Faculty Search Committees (2021-2022)

***National***

ASPET – Graduate Student Convocation Committee

Endocrine Society – Ethics Committee (Charter Member)

National Animal Interest Alliance (Board of Directors, 1993-2018)

National Directors of Graduate Programs in Pharmacology

Society for the Study of Reproduction – Animal Use Committee

Society for Veterinary Medical Ethics - Founding Treasurer 1994-1998, President  
1998-1999

Washington Association for Biomedical Research – Emeritus (Board of Directors)

\* ***currently active***

**Editorial Boards:**

*Regulatory Peptides* (Editorial Board, 2003-2015)

*International Journal of Peptides* (Editorial Board, 2008-2018)

Guest Co-Editor, Special Issue: *Brain RAS: Hypertension and Beyond*, *International Journal of Hypertension* 2012-2013

*Journal of Pharmacology & Clinical Toxicology* (Editorial Board, 2013)

*Biochemistry Research International* (Associate Editor, 2018-present)

*Journal of the Renin-Angiotensin Aldosterone System (JRAAS)*, Associate Editor,  
2021-present

**Manuscript Reviewer (partial listing):**

*American Journal of Physiology*  
*American Journal of Veterinary Research*  
*Artery*  
*BBA Membranes*  
*Biochimica Biophysica Acta*  
*Biochemical Pharmacology*

*Biology of Reproduction*  
*Brain Research*  
*Cell and Tissue Research*  
*Chemical Research in Toxicology*  
*Circulation Research*

**SPETH, Robert C.**

*Contemporary Topics in Lab Animal  
Medicine*  
*Critical Reviews in Toxicology*  
*Drug Metabolism Reviews*  
*Endocrine*  
*Endocrinology*  
*European Journal of Pharmacology*  
*Experimental Physiology*  
*FasebJ*  
*Fertility and Sterility*  
*Frontiers family of journals*  
*Hypertension*  
*Hypertension Research*  
*International Journal of Hypertension*  
*Journal of Cardiovascular Pharmacology*  
*Journal of Comparative Neurology*  
*Journal of Natural Products*  
*Journal of Neurochemistry*  
*Journal of Neuroscience*  
*Journal of Pharmacology & Experimental  
Therapeutics*  
*Journal of Physiology*  
*Journal of Theoretical Biology*

*Journal of the American Society for  
Hypertension*  
*Life Sciences*  
*Medicine*  
*Molecular and Cellular Endocrinology*  
*Molecular Imaging and Biology*  
*Molecular Pharmacology*  
*Neurochemical Research*  
*Neurochemistry International*  
*Neuroendocrinology*  
*Neuroscience*  
*Peptides*  
*Planta Medica*  
*PLOS One*  
*Proceeding of the Society for Experimental  
Biology and Medicine*  
*Regulatory Peptides*  
*Science*  
*Science Translational Medicine*  
*Scientific Reports*  
*Theriogenology*  
*Chapman & Hall Publishers*

**Consultancies:**

Representative of WA Association for Biomedical Research: Speakers Bureau

Representative of Incurably Ill For Animal Research: Speakers Bureau

Scientific Consultant – QCR, Inc.

Technical Consultant – American Radiolabeled Chemicals: Responsible for radioiodination of peptides and proteins.

Pharma America – Advisory Board Member

Cannacore Group - Consultant

**Miscellaneous Activities:**

Director: Peptide Radioiodination Service Center, Washington State University  
(1991-2003) University of Mississippi (2003-2009)

Founding Editor: Newsletter of the Society for Veterinary Medical Ethics  
(1994-1997)

**SPETH, Robert C.**

Contributor of letters to editors of a variety of local and national publications regarding animal research issues and use of alternative medicines and nutritional supplements

Judge: Poster Session for BC/BP 578 (1992-1996)

Representative for WA Association for Biomedical Research for High School Science Teachers Convention (November, 1995)

Teaching Recognition: "Washington State University class helps researchers deal with media." Moscow-Pullman Daily News, 12/18/1998, page 1A; "Building a bridge for science community." Editorial, Moscow-Pullman Daily News, 12/29/1998, page 8A.

Director: Peptide Radioiodination Shared Resource, Georgetown University (2012-2020)

Master of Ceremoanies: Angiotensin Gordon Research Conference "Mike Peach Awards" (1995, 1996, 1998, 2002, 2008, 2010, 2012,2018, 2020, 2022)

Advisory Board: National Animal Interest Alliance (01/1998-2019)

Member – Board of Directors: Washington Association for Biomedical Research (03/1998-1999) Emeritus Member 1999

Established the Marvin Davis Award for the best pre-candidacy Graduate Student in Pharmacology with an initial donation December 2005. Presided over first presentation of the award August, 2007.

Established the Wade Waters Pharmacy Alumni Endowment with an initial donation September, 2007. Goal: to establish an Endowed Chair for a Professor with a primary focus on teaching excellence.

Grant review committee: American Heart Association, Southeast Affiliate, R2 Molecular Signaling Study section, Tampa, FL, April 1, 2008.

Grant review committee: American Heart Association, Southeast Affiliate, R2 Molecular Signaling Study section, Tampa, FL, April 14, 2009.

Neuroscience Journal Club, College of Psychology, Nova Southeastern Univ. July 2012-2015

Amanda Kalinsky, GSS Patient Advocate, Nova Southeastern University, October 19, 2017 – presentations to 9 different classes as well as a lunchtime meet and greet.

**Symposia Organized:**

**Selected 1 of 6**

4<sup>th</sup> Annual Meeting of the Society for Veterinary Medical Ethics; Reno NV. (October 1997)

46<sup>th</sup> Annual Meeting of the Western Pharmacological Society: *Brain Angiotensins: Pharmacological and Genomic Studies of their Synthesis, Signaling and Effector Mechanisms*; Lake Tahoe, NV (February 2003)

Angiotensin Gordon Conference Symposium *Central Angiotensin Pathways: The State of Our Current Knowledge*. Ventura CA (February 28, 2004)

Angiotensin Gordon Conference Symposium *Molecular Foundations of the Renin-Angiotensin System* Discussion leader Ventura CA (February 27, 2008).

Angiotensin Gordon Conference Symposium *New Targets for Old Arrows* Discussion leader Ventura CA (March 1, 2012).

**Meetings Organized:**

25<sup>th</sup> Annual Meeting of the Southeastern Pharmacology Society Oxford, MS Nov 4-5, 2004 (Co-organizer with Larry Walker)

27<sup>th</sup> Annual Meeting of the Southeastern Pharmacology Society Oxford, MS Nov 5-7, 2006 (Co-organizer with Larry Walker)

**Invited Research/Seminar Presentations:**

Department of Pharmacology: *The effects of paraoxon on cholinergic function in the brain*; Vanderbilt University; Nashville, TN. May 1976.

Department of Pharmacology: *The valium receptor*; University of Arizona; Tucson, AZ. May 1978.

Department of Pharmacology: *The mechanism of action of the benzodiazepines*; University of Arizona; Tucson, AZ. October 1978.

Department of Pharmacology: *Benzodiazepine receptors in the brain*; Vanderbilt University; Nashville, TN. November 1978.

Gordon Conference on Angiotensin: *Angiotensin receptors*; Ventura, CA. February 1982.

**SPETH, Robert C.**

Department of Biochemical Pharmacology and Department of Pharmacology: *Brain angiotensin receptors*; School of Pharmacy and School of Medicine, State University of New York at Buffalo; Buffalo, NY. November 1982.

Research Division: *Angiotensin receptors: What is their role in blood pressure regulation?*; Cleveland Clinic Foundation; Cleveland, OH. February 1983.

Department of Veterinary and Comparative Anatomy, Pharmacology and Physiology: *Brain angiotensin receptors: What are they doing?*; Washington State University; Pullman, WA. January 1984.

Endocrinology and Reproduction Research Branch, NICHD: *Angiotensin receptor regulation*; National Institutes for Health; Bethesda, MD. February 1984.

Research Division: *New developments in angiotensin receptor research*; Cleveland Clinic Foundation; Cleveland, OH. February 1984.

Department of Biology: *Regulation of brain angiotensin receptors and their localization in the central nervous system*; Univ. Pennsylvania; Philadelphia, PA. February 1984.

Department of Veterinary and Comparative Anatomy, Pharmacology and Physiology: *Some novel and not so novel sites of action of angiotensin II*; Washington State University; Pullman, WA. October 1985.

Department of Pathology: *Angiotensin binding in the central nervous system*; University of Washington; Seattle, WA. November 1985.

Department of Biological Sciences: *Angiotensin receptors: They're everywhere*; University of Idaho; Moscow, ID. September 1986.

Department of Physiology: *The ovarian renin-angiotensin system*; University of Oregon, Health Sciences University; Portland, OR. March 1987.

Department of Biochemical Pharmacology: *The renin-angiotensin system in the ovary*; College of Pharmacy, State University of New York; Buffalo, NY. April 1987.

Department of Veterinary and Comparative Anatomy, Pharmacology, and Physiology: *The renin-angiotensin system in the ovary*; Washington State University; Pullman, WA. April 1987.

Department of Biology: *Angiotensin II receptor binding on neuronal structures in the brain*; Portland State University; Portland, OR. May 1987.

**SPETH, Robert C.**

Gordon Conference on Angiotensin: *Brain angiotensin receptors*; Oxnard, CA. February 1989.

Departments of Physiology and Pharmacology: *Angiotensin receptors from A to Z*; Quillen College of Medicine, East Tennessee State University; Johnson City, TN. March 1989.

Department of Veterinary and Comparative Anatomy, Pharmacology, and Physiology: *Angiotensin II and reproduction*; Washington State University; Pullman, WA. November 1989.

UI/WSU Reproductive Biology Group: *Renin-angiotensin system and reproductive function*; Washington State University; Pullman, WA. December 1989.

Oregon Regional Primate Research Center: *Angiotensin II receptor subtypes in the brain and reproductive structures*; Beaverton, OR. November 1990.

Gordon Conference on Angiotensin: *Angiotensin II receptor subtypes: Properties and activation pathways*; Oxnard, CA. February 1991.

Seminar - Department of Physiology: *New developments in angiotensin receptors*; East Tennessee State University; Johnson City, TN. April 1991.

Department of Veterinary and Comparative Anatomy, Pharmacology and Physiology: *A tale of 2 receptors for angiotensin II*; Washington State University; Pullman, WA. October 1991.

Discussant, Gordon Conference on Angiotensin: *Central Actions of Angiotensin II*; Oxnard, CA. February 1992.

Moderator – Symposium on Biomedical Research: *A miracle at risk: what can I do?*; American Medical Association, Seattle, WA. March 1992.

Symposium - Biochemical Properties and Physiological Roles of the AT<sub>2</sub> Receptor: *The distribution and binding characteristics of the AT<sub>2</sub> receptor in the brain and other tissues*; Ypsilanti, MI. July 1992.

Department of Physiology: *Adventures in angiotensin receptors*; College of Medicine, University of Florida; Gainesville; FL. November 9, 1992.

Conference: *Further subtyping of angiotensin II receptor subtypes*; Western Pharmacology Society; Lake Tahoe, NV. February 1, 1993.

Guest Speaker: *Why animal activists lie about the benefits of biomedical research*; Washington Association for Biomedical Research; Seattle, WA. March 8, 1993.



Biomedical Ethics (Phil 207): *Rebutting the animal rights philosophy*; University of Idaho; Moscow, ID. October 20, 1993.

Radio Interview with Margaret Kreidler: *Why we need to do animal research*; Northwest Public Radio; Pullman, WA. Broadcast on October 21, 1993.

Research Seminar: *Brain angiotensin and sexual cyclicity in the rat*; Endocrinology and Reproduction Research Branch, National Institute of Child Health and Human Development; Bethesda, MD. March 23, 1994.

Local Television Interview: *In support of animal research*; The Willie Brown Show, KCRA Television Station; Sacramento, CA. May 10, 1994.

Meeting: *Possible involvement of angiotensin II in reproductive function*; University of Melbourne; Melbourne, Australia. October 19, 1994.

2<sup>nd</sup> Annual Scientific Symposium - Hormones and the Cardiovascular System: *Angiotensin Receptors: Location, function and signal transduction*; Prince Henry's Institute of Medical Research; Melbourne, Australia. October 21, 1994.

Conference: *Angiotensinergic influences on the reproductive system*; Institute for Hormone and Fertility Research, University of Hamburg; Hamburg, Germany. May 11, 1995.

Department of Veterinary Comparative Anatomy, Physiology and Pharmacology: *Brain angiotensin and reproductive cyclicity in female rats*; Washington State University; Pullman, WA. November 6, 1995.

Department of Medicine: *Angiotensin II potential role in the control of reproduction*; University of California at San Diego; San Diego, CA. November 9, 1995.

Division of Pharmacology and Experimental Therapeutics: *Angiotensin II as a hormonal regulator of reproductive systems*; College of Pharmacy, University of Kentucky; Lexington, KY. July 25, 1996.

Seminar - Food Animal Club: *Dealing with the animal rights challenge to animal agriculture*; College of Veterinary Medicine, Washington State University; Pullman, WA. September 23, 1996.

Intensive American Language Center: *Animal Rights*; Washington State University; Pullman, WA. April 21, 1997.

Gordon Conference: *Ligand Recognition and Molecular Cating, TOPO: A tool for two-dimensional representations of membrane spanning proteins*; Plymouth, NH. June 1997.

Organizer – Plenary Symposium: *Educating students and the public about animal rights*; Society for Veterinary Medical Ethics, Reno, NV. July 1997.

33<sup>rd</sup> Annual Veterinary Medical Symposium: *Why the veterinary profession must re-establish itself as the leading animal welfare advocate*; School of Medicine, Tuskegee University. March 23, 1998.

WSU/UI Reproductive Biology Program: *Angiotensin II: A reproductive hormone too?* Coeur d'Alene, Idaho. July 17, 1998.

National Animal Interest Alliance: *The price of silence and who pays for it*; Portland, OR. October 25, 1998.

Forum: *Animal research and animal rights*; New York University, New York, NY. October 27, 1998.

Organizer – Mini-symposium on Ethical Issues Introduction: *How should the veterinarian profession deal with the animal rights movement?* March 19, 1999.

American Veterinary Medical Association/Society for Medical Ethics Plenary Session: *Veterinary medicine and the animal rights movement*; New Orleans, LA. July 10, 1999.

National Institutes for Mental Health: *Angiotensin interactions with reproductive systems*; Bethesda, MD. April 16, 1999.

WSU/UI Reproductive Biology Program: *Brain angiotensin receptor changes in the lactating rat*; Lake Coeur d'Alene, ID. June 18, 1999.

Lecture (AS 280: Companion Animal Management): *Pet overpopulation? The animal rights movement and its implications*; Oregon State University, Corvallis, OR. January 13, 2000.

Perinatal Focus Group: *Looking for angiotensin receptors in all the wrong places or is there function after binding?*; Oregon Health Sciences University, Portland, OR. April 6, 2000.

Department of Physiology and Pharmacology: *Does the renin-angiotensin system regulate lactation?*; Oregon Health Sciences University, Portland, OR. April 12, 2000.

Division of Neuroscience: *The renin-angiotensin system and lactation*; Oregon Regional Primate Research Center, Hillsboro, OR. May 17, 2000.

WSU and University of Idaho Center for Reproductive Biology: *Further studies on the brain renin-angiotensin system in lactating rats*; Washington State University, Pullman, WA. September 20, 2000.

Faculty Research Symposium – Ethics in the Disciplines: *Neither practical nor ethical. A critical analysis of Peter Singer's 'Practical Ethics'*; Center for Teaching, Learning and Technology. October 3, 2001.

Lecture (NS 350): *Ethical considerations for the use of animals in research*; Lewis & Clark State College, Coeur d'Alene, ID. October 23, 2001.

Special Presentation: *East of San Francisco: the life and poetry of Robert Frost*; VCAPP Department, Washington State University, Pullman, WA. November 2001.

Panelist – Washington Association for Biomedical Research Speakers Training Bureau; Pullman, WA. March 14, 2002.

Radio Broadcast: *The use of animals in research*; Moderator: Charles Lee and Berkeley Grox, KALX – 90.7 FM, Berkeley CA. Broadcast on July 17, 2002.

Department of Medicine: *Is angiotensin II an antagonist of the brain AT<sub>1</sub> angiotensin receptor?*; Georgetown University, Washington, DC. August 1, 2002.

Section on Pharmacology: *Brain angiotensin: a gliopeptide?*; National Institutes of Mental Health, Bethesda, MD. August 2, 2002.

Morehouse Medical School: *Angiotensin: the good, the bad and the unusual*; Atlanta, GA. August 21, 2002.

Special Presentation: *They say he died of rabies, and will be with us nevermore – the life and poetry of Edgar Allan Poe*; VCAPP Department, Washington State University, Pullman, WA. September 13, 2002

VCAPP Department: *Angiotensin: the good, the bad and the unusual*; Washington State University, Pullman, WA October 17, 2002.

College of Pharmacy: *Beyond angiotensin II: the renin-angiotensin system in the 21<sup>st</sup> century*; University of Mississippi, Oxford, MI. January 28, 2003.

Western Pharmacology Society: *Central angiotensin pathways: the state of our current knowledge*; Lake Tahoe, NV. February 4, 2003.

School of Medicine and Health Sciences: *Brain angiotensins: continuing revelations*; University of North Dakota, Grand Forks, ND. February 10, 2003.

**SPETH, Robert C.**

The Philadelphia College of Pharmacy: *The Renin-Angiotensin System: A Growing Family of Peptides and Receptors*, University of the Sciences in Philadelphia, Philadelphia, PA. June 18, 2003.

Southeastern Pharmacology Society: *Some novelties from the renin-angiotensin system*, Atlanta, GA, October 18, 2003.

University of Mississippi Medical Center, Department of Physiology and Biophysics: *Angiotensin: New Mechanisms for an Old Hormone System*, Jackson, MS, October 29, 2003.

Case Western Reserve University School of Medicine, Department of Physiology and Biophysics: *Renin-Angiotensin Supersystem*, Cleveland, OH, November 3, 2003.

National Animal Interest Alliance, *Uncomfortable Knowledge*, Biomedical Research Panel, Washington, DC, March 28, 2004.

Georgetown University School of Medicine, Departments of Nephrology, Hypertension & Endocrinology. *A Mississippian's View of the Renin-Angiotensin System*, Washington, DC, March 30, 2004.

University of Alabama-Birmingham, Dept. Physiology *Angiotensin II vs Angiotensin III: The Battle for the Brain AT-1 Receptor*. Birmingham, AL, September 22, 2004

University of Tennessee Health Science Center, Dept. Physiology. *Reinventing the Renin-Angiotensin System*. Memphis, TN, November 11, 2004

Uniformed Services Health Sciences University, Dept. Pharmacology. *Angiotensin II vs Angiotensin III: Competing for the Affection of the Brain AT-1 Receptor*. January 25, 2005

Phoenix Pharmaceuticals, *Working Safely with <sup>125</sup>Iodine*. Belmont, CA. May 2, 2005

Institute for Ethnomedicine, *Towards Developing an Animal Model of BMAA Neurotoxicity*. Jackson Hole, WY October 14, 2005.

University of Mississippi, Department of Pharmacology, *Towards Developing an Animal Model of BMAA Neurotoxicity*. Oxford, MS November 17, 2005

University of Mississippi Medical Center, Society for Neuroscience Chapter. *Two seminars for the price of one: Is BMAA the neurotoxin causing ALS/PDC in Guam? and, The Importance of the Brain Angiotensin System*. Jackson, MS January 10, 2006

Institute for Ethnomedicine, *In vivo models of chronic BMAA toxicity Towards an Animal Model*. Cocoanut Grove, FL January 26, 2006.

Institute for Ethnomedicine, Animal Models of BMAA Toxicity, Jackson Hole, WY October 19, 2006.

University of Mississippi Medical Center, Department of Pharmacology. *Preservation of Angiotensins in Radioligand Binding Assays Reveals a Novel Non-AT-1, Non-AT-2 Binding Site for Angiotensins in the Rodent Brain*. Jackson, MS February 26, 2007.

Fifth International Receptor Symposium, *Identification of a novel non-AT1, non-AT2 binding site for angiotensins in the rodent brain*. Shizuoka, Japan. May 10-11, 2007.

Risks and Benefits of the Use of Unorthodox Medicines in the United States. Hospital Pharmacists, Shizuoka, Japan May 12, 2007.

National Directors of Graduate Studies Meeting, Chair's Panel: Objectives for Graduate Training in Pharmacology, Salt Lake City, UT July 26, 2007

Fourth Conference on BMAA, Dalarö, Sweden. August 20-22, 2007. Proxy representation by Dr. Vardan Karamyan due to scheduling conflict.

Mississippi State University, Dept Biology, Mississippi State, MS. Discovery of a novel binding site for angiotensins in rodent brain. September 14, 2007.

Angiotensin Gordon Research Conference, *Molecular Foundations of the RAS* (Discussion Leader) Ventura, CA February 24-29, 2008.

Memorial Service for Hank Yamamura, University of Arizona, Tucson, AZ September 26, 2008. <http://streaming.biocom.arizona.edu/event/?id=21789>

The BMAA Hypothesis – 2008: New animal models of BMAA. What needs to be done? Fifth International BMAA Conference, Institute for Ethnomedicine, Jackson, WY October 14, 2008 (presentation delivered by teleconference call).

“Is there a novel AT<sub>3</sub> receptor for angiotensins in the brain?” Dept. Physiology, Tulane Univ., New Orleans LA, October 27, 2008.

“Will we ever understand the brain angiotensin system?” School of Pharmacy, Texas Tech University, Amarillo, TX March 3, 2009.

“Enhancing our ability to be life-long learners” School of Pharmacy, Texas Tech University, Amarillo, TX. March 4, 2009.

“Unmasking a novel angiotensin II, angiotensin III binding site in the brain” DISTINGUISHED SCIENTIST SEMINAR (DSS) SERIES, University of South Alabama College of Medicine, Mobile, AL May 7, 2009.

“Biomedical research prospective: The cup is more than half-full” School of Pharmacy, Nova Southeastern University, Fort Lauderdale, FL. May 21, 2009.

“Animals in Research Round Table” Panelist. University of California at Santa Cruz, Santa Cruz, CA May 28, 2009.

“Examining angiotensinergic influences on the cardiovascular system at the level of the brainstem” University of Nebraska Medical Center, Omaha, NE. June 1, 2009.

“Unmasking a Novel Angiotensin II, Angiotensin III Binding Site in the Brain” Zucker lab group meeting, University of Nebraska Medical Center, Omaha, NE. June 2, 2009,

“Discovery of a new binding site for angiotensins in the brain: Could it be the AT-3 angiotensin receptor subtype?” Western University College of Osteopathic Medicine, Pomona, CA. June 22, 2009.

Invited Presenter: “Two decades of teaching RCR” Symposium RESPONSIBLE CONDUCT IN RESEARCH What and How to Teach” Oklahoma Society of Physiologists, Tulsa, OK June 26, 2009.

“Unmasking of a novel angiotensin binding site: Is it a receptor?” Department of Pharmaceutical Sciences, Texas A & M Health Sciences Center, College of Pharmacy, Kingsville, TX July 2, 2009.

“A meta-Analysis of In vivo Studies of BMAA in Vertebrates” 6<sup>th</sup> Annual BMAA Conference, Coconut Grove, FL., November 4, 2009.

“Continuing Studies of the Renin-Angiotensin System: From novel Angiotensin Binding Sites to Novel Sites for Angiotensin Receptors” Department of Physiology and Functional Genomics, College of Medicine, University of Florida, Gainesville, FL May 17, 2010.

“Is There Another Angiotensin Receptor Subtype?” Graduate Program in Pharmacy, College of Pharmacy, Nova Southeastern Univ., Fort Lauderdale, FL. October 1, 2010.

“Adventures in Angiotensin Binding: Discovery of a Novel, non-AT<sub>1</sub>, non-AT<sub>2</sub> Binding Site for Angiotensins II and III” College of Medicine, University of Missouri, Columbia, MO. October 27, 2010.

- “Continuing studies of a novel angiotensin II/III binding protein in the brain and other tissues” Dept. Physiology and Biophysics, University of Mississippi Medical Center, Feb 2, 2011.
- “Risks and Benefits of the Use of Unorthodox Medicines” Broward County Hospital Retirees, February 10, 2011, Fort Lauderdale, FL.
- “Evaluating Risks from Japan’s Nuclear Crisis” College of Osteopathic Medicine, Master of Public Health Program, Public Health Seminar March 23, 2011.
- “Challenging the angiotensin III hypothesis: Angiotensin II is not an Antagonist of the Brain AT<sub>1</sub> Receptor” Basic Science Seminar, Integrated Biomedical Sciences Seminar Series, Center for Perinatal Biology, Department of Physiology/Pharmacology of Loma Linda University, May 19, 2011.
- “Neurolysin: a novel Angiotensin Binding Protein” Perinatal Biology Seminar, Center for Perinatal Biology, Department of Physiology/Pharmacology of Loma Linda University, May 20, 2011.
- “What lessons can Florida learn from Japan's recent nuclear disaster?” Panelist: Panel Discussion Tower Forum, Fort Lauderdale, FL. June, 2, 2011  
<http://www.towerforum.org/> (accessed June, 8, 2011).
- “Risks and Benefits of the Use of Unorthodox Medicines” Nova Southeastern University Speaker’s Forum, Fort Lauderdale, FL. June 3, 2011 and College of Pharmacy June 9, 2011.
- “Should neurolysin be classified as a member of the renin-angiotensin system?” College of Pharmacy, University of Tennessee, Memphis, TN October 10, 2011.
- “Did Lou Gehrig have Lou Gehrig’s Disease: Chronic Traumatic Brain Injury and Blood Brain Barrier Permeability. 8<sup>th</sup> Annual Plant Medicine Meeting, Coral Gables, FL November 8, 2011.
- “Controversies in Public Health: Orrin Hatch and Dietary Supplements” College of Osteopathic Medicine, Master of Public Health Program, Public Health Seminar December 7, 2011.
- “Could Neurolysin be the newest member of the renin-angiotensin system?” Georgetown University, Washington, DC, December 13, 2011.
- “Did Lou Gehrig Have Lou Gehrig's Disease? Traumatic Brain Injury and Neurological Diseases” Graduate Program in Pharmacy, College of Pharmacy, Nova Southeastern Univ., Fort Lauderdale, FL. February 17, 2012.

“New Targets for Old Arrows: Off-Label uses of ARBs and ACE Inhibitors”  
Discussion Leader, Angiotensin Gordon Conference, March 1, 2012 Ventura, CA

“Success in Patents/Technology Transfer” PI/PD Forum Nova Southeastern Univ.  
April 10, 2012 Co-Facilitator with Dr. Gary Margules

“New Developments in the Renin-Angiotensin System: Holding two ACEs and a wild  
card” Scripps Research Institute, Jupiter, FL April 13, 2012

“Grants and Manuscripts: Responding to Reviewer Critiques” College of Pharmacy,  
Nova Southeastern Univ. April, 12, 2012

“Report on June 2012 Conference on Dietary Supplements sponsored by Office of  
Dietary Supplements, Bethesda, MD. College of Pharmacy Ph.D. Program  
September 7, 2012.

“Dietary Supplements: Do They Work?” Lifelong Learning Institute, Nova  
Southeastern University, June 6, 2013

“Chemical interactions of the Renin-Angiotensin System” Chemistry Club, Farquhar  
College of Arts and Sciences, Nova Southeastern University, October 21, 2013

“So there’s no free will: Now what?” TEDXNSU, Nova Southeastern University.  
March 29, 2014

“Biology and beyond: My life as a Neurobiologist” Keynote Speech, Tri-Beta  
Induction Ceremony, Nova Southeastern University, April 10, 2014.

“So there’s no free will: Now what?” Lifelong Learning Institute, Nova Southeastern  
University, August 7, 2014.

“What do the Milgram and Stanford Prison Experiments tell us about ourselves?”  
Lifelong Learning Institute, Nova Southeastern University, December 8, 2014.

“Something Old is New Again.” Emerge, Miami, FL May 4, 2015.

“They Say He Died of Rabies” Lifelong Learning Institute, Nova Southeastern  
University, June 16, 2015


“What Drug Did Roger Chillingworth Use on Reverend Dimmesdale in The Scarlet  
Letter”, ABSAME, Minneapolis, MN, October 17, 2015.

“What Drug Did Roger Chillingworth Use on Reverend Dimmesdale in The Scarlet  
Letter”, Lifelong Learning Institute, Nova Southeastern University, November 5,  
2015.



“Scientists and Society: What are our Ethical Duties?” Translational Biomedical Sciences Training Program, Georgetown University, December 3, 2015

“Drugs in Literature and Art: The Scarlet Letter & More” Socialize, Learn, Educate, and Discuss, Tamarac, FL. January 11, 2016.

“Legalize it  ... or not?” Generation Rx College of Pharmacy, Nova Southeastern University, February 9, 2016.

“Applications of 3-D printing in the lab.” Co-presenter with Natalie Builes, Nova Southeastern University Faculty Development Program, February 18, 2016.

“How Do Drugs Know Where to Go For Disease” Achieve in Medicine (AIM-High) ) medical school immersion experience for high school students, College of Osteopathic Medicine, Nova Southeastern University, June 15 & 21, 2016.

“Receptor Binding” Neuroscience Summer Camp, College of Psychology, Nova Southeastern University July 19, 2016.

“How Smart are Smart Drugs? Or: How dumb do you have to be to be to take smart drugs?” Or: Can we trust the biomedical literature? Translational Biomedical Science Training Program, Georgetown University, Washington, DC September 29, 2016.

Medical Specialist Panelist: Medical Marijuana Debate, Nova Southeastern University, College of Pharmacy, October 21, 2016

Panelist: Rodent models of Human Disease – The Good the Bad and the Ugly. Cayman Peptide Meeting, Providenciales, Turks and Caicos Islands, November 10, 2016

“A Neuropharmacologist’s Forty-Year Retrospective and Indeterminate Prospective”, Dept. Pharmacology, University of Nevada Reno, Reno, NV December 8, 2016.

“Marijuana: Is Popular Science True Science?” Institute for Neuroimmune Medicine, Nova Southeastern University, January 6, 2017.

“The Dangers of Dietary Supplements” Pharmacy Graduate Program, College of Pharmacy, Nova Southeastern University, January 20, 2017

“The Dangers of Dietary Supplements” Neuroscience Program, College of Pharmacy, University of Wyoming, Laramie, WY, February 2, 2017

“Medical Marijuana in Florida” Cancer Support Community Greater Miami, Miami FL, March 24, 2017

“Questionable Dietary Supplements: Example of Prevagen.” Complementary and Alternative Medicine Graduate Studies, Georgetown University Medical Center, March 30, 2017.

“Adventures in Neuropharmacology” Neuroscience Club, Nova Southeastern University, April 26, 2017

“Scholarship and the University: Building up S.T.E.A.M”, “Inspirational Speaker”, President’s Faculty Research Development Grant Award Ceremony, Nova Southeastern University, May 15, 2017.

“What’s New in Neuroscience?” Neuroscience Summer Camp, Nova Southeastern University, August 1, 2017.

Introduction of Gina Kolata, Distinguished Speaker Series, Nova Southeastern University, October 18, 2017.

“Medical Marijuana (MMJ)” LifeLong Learning Institute, Community Outreach Kings Point Community SLED, Coral Springs, FL Nov 6, 2017

Medical Marijuana (MMJ) LifeLong Learning Institute, Nova Southeastern University, December 4, 2017.

“The Role of the Researcher in Society: What are our Ethical Duties?” Translational Biomedical Sciences Training Program, Georgetown University, January 4, 2018

“Mercies in Disguise and the Amanda Baxley Kalinsky Family Story” LifeLong Learning Institute, Nova Southeastern University, January 29, 2018.

“Acres of Skin: A Post-WW II profile of an Unethical Biomedical Research program in the United States” Bioethics Panel, African-American Month Miami-Dade College, Miami, FL February 13, 2018.

“Acres of Skin: A Post-WW II profile of an Unethical Biomedical Research program in the United States” Bioethics Panel, African-American Month Miami-Dade College, Miami, FL March 13, 2018.

“Mercies in Disguise and the Amanda Baxley Kalinsky Family Story” Biology Masters Program Seminar Series, Nova Southeastern University, May 29, 2018.

“The History of Angiotensin 1-7: Part 1” Department of Pharmacology, University of Arizona, Tucson, AZ, September 12, 2018.

- “Hypertension, Estrogen, Obesity and Alzheimer’s Disease: Connecting the dots”  
Susie and Alan B Levan Ambassador’s Board, Nova Southeastern University,  
December 13, 2018.
- “The Ever-Expanding Universe of the Renin-Angiotensin System” Windows into  
Translation Seminar Series, Department of Medicine, Georgetown University,  
Washington DC December 20, 2018
- “The History of Angiotensin 1-7: Part 1” College of Pharmacy Graduate Seminar  
Series, Nova Southeastern University January 25, 2019
- “The Cost of Biomedical Research Misconduct” TL-1 Scholars Seminar Series,  
Georgetown/Howard Universities, February 21, 2019
- “How to Promote Vaccinations” APhA-ASP College of Pharmacy Nova  
Southeastern University, March 18, 2019.
- “Addressing the Opioid Epidemic” Students for a Sensible Drug Policy (SSDP),  
Health Professions Division Nova Southeastern University, April 10, 2019
- “The Philosophy of Toxicity” Honors Symposium on Public Speaking, Farquhar  
Honors College, Nova Southeastern University, April 18, 2019
- “Conflict of Interest and Collaborative Research” TL-1 Scholars Seminar Series,  
Georgetown/Howard Universities, May 16, 2019
- “Pleiotropism of the renin-angiotensin system: What Doesn’t it do?” Keynote  
Lecture, Second Pan-American Congress of Physiological Sciences,  
Physiology without borders, Havana, Cuba May 29, 2019
- “Comments on the therapeutic use of cannabis” Panel Discussant, Aging in South  
Florida Symposium, South Florida Institute on Aging (SoFIA), June 21, 2019.
- “Marijuana: Medicine, Nepenthe, Snake Oil, or All of the Above” Biomedical  
Sciences Graduate Program, Biology Department, Nova Southeastern  
University July 11, 2019.
- “Biosketches for NIH and other grant proposals” Mentor-Mentee Program, Office of  
Sponsored Projects, Nova Southeastern University August 20, 2019.
- “Biosketches for NIH and other grant proposals” Webinar, ASPET Mentorship  
Program, August 26, 2019.
- “Marijuana: Medicine, Nepenthe, Snake Oil or All of the Above?” Students for a  
Sensible Drug Policy, Nova Southeastern University August 28, 2019.

“Marijuana: Medicine, Nepenthe, Snake Oil or All of the Above?” Life-Long Learning Institute, Nova Southeastern University October 2, 2019.

“Misconduct in Research: How Do I Cheat Thee? Let Me Count the Ways.” Department of Biology Seminar Series, Nova Southeastern University October 18, 2019.

“The Dangers of Dietary Supplements” Honors College, Nova Southeastern University October 23, 2019.

“Estrogen Replacement Therapy: Use It or Lose It.” Institute for NeuroImmune Medicine, Nova Southeastern University, November 1, 2019.

“The Brain Angiotensin System: Classic and Novel Functions” Society for Personalized Nano-Medicine, 6<sup>th</sup> annual Symposium, Florida International University, November 20, 2019

“The Dangers of Dietary Supplements” College of Pharmacy Graduate Program Seminar Series, Nova Southeastern University, Jan. 24.

Panelist; “Federal Agency Reviewer Panel Lunch and Learn” seminar series, Office of Sponsored Projects, Nova Southeastern University, Feb. 19.

“ACE2 and COVID-19” Faculty Development Program College of Pharmacy, Nova Southeastern University, April 16, 2020.

“Research Misconduct, or, How do I Cheat Thee: Let Me Count the Ways” TL-1 Scholars Translational Biomedical Sciences Program Georgetown Howard Universities, May 7, 2020

“Information Overload: How to Deal with It; or Not.” Faculty Development Program College of Pharmacy, Nova Southeastern University, May 14, 2020.

“Conflict of Interest and the Ethics of Controlled Human Infection in the Age of COVID-19.” TL-1 Scholars Translational Biomedical Sciences Program Georgetown Howard Universities, June 4, 2020

“ACE2, COVID-19 and the Renin-Angiotensin System”, Biology Masters Program, Nova Southeastern University, July 16, 2020.

“ACE2 and COVID-19: Malefactor or Megastar?” The Institute for Neuro-Immune Medicine (INIM) Research Seminar Series March 5, 2021

“ACE2 and COVID-19: SuperHero or SuperVillian?” Society for Neurosports Datablitz March 26, 2021 (3<sup>rd</sup> place award).

“Animal Abuse in Horse Racing: Life-Long Learning Institute, Nova Southeastern University July 8, 2021.

“The Dangers of Dietary Supplements” Masters in Biomedical Sciences Seminar Series, Department of Biology, NSU, July 14, 2021

- “Historical Perspective on the War on Drugs: Towards Developing a More Rational and Humane Policy to Address Drug Abuse” Students for a Sensible Drug Policy, NSU, September 3, 2021.
- “Get the Lead Out or Smelter Skelter” This Lead is Killing Us, Martin and Gail Press Health Professions Division Library Symposium, October 20, 2021
- “Journal Club: The Christchurch Mutation vs Presenilin-1 Mutation” Alzheimer’s Disease Journal Club November 29,, 2021
- “Biosketches” NSU Mentor-Mentee program Dec 10, 2021
- “Get the Lead Out or Smelter Skelter” This Lead is Killing Us, Lifelong Learning Institute, Jan 31, 2022.
- “Angiotensinergic Volume Gliotransmission in the Brain” Brain Bee, College of Psychology, NSU, March 12, 2022.
- “Science in the Post-Truth Era: Science Under Siege” Georgetown/Howard University TL-1 Biomedical Scholars Program April 14, 2022
- “Get the Lead Out or Smelter Skelter” This Lead is Killing Us, Biomedical Health Sciences Summer Seminar Series, August 5, 2022
- “Get the Lead Out: Smelter Skelter to Filthy Faucets” College of Pharmacy Graduate Program Seminar Series, NSU, September 9, 2022
- “Historical Perspective on the War on Drugs: Towards Developing a More Rational and Humane Policy to Address Drug Abuse.” Students for a Sensible Drug Policy (SSDP) October 10, 2022.
- “How We Lost the War on Drugs: Post-War Lessons to Learn”, National Community Pharmacists Association, NSU Student Chapter, January 12, 2023; Lifelong Learning Institute Coconut Creek Senior Center, January 30, 2023; LifeLong Learning Institute, NSU, March 1, 2023
- “Exercise versus the Evils of the Renin-Angiotensin System” platform presentation Society for Neurosports, February 18, 2023.
- “Research Misconduct: The Cost to Scientific Credibility” TL-1 Scholars Translational Biomedical Sciences Program, Georgetown/Howard Universities, April 6, 2023
- “Van Gogh: Under the Influence” Brain Bee, Nova Southeastern University, April 8, 2023

**Grants**

**Principal Investigator:**

DATE	TOTAL DIRECT COSTS
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· **Completed**

· **Completed**

01/1981- 12/1981	<i>Pre- and post-synaptic pressor effects of angiotensins.</i> AHA.	\$ 10,000
07/1981- 06/1984	<i>Angiotensin receptor heterogeneity and hypertension.</i> NIH/NHLBI-Young Investigator Research Award.	105,000
09/1981- 11/1983	<i>Cardiovascular diseases and blood pressure control.</i> NIH/NHLBI (Program Project/HL6835/F. Merlin Bumpus).	
	· <u>Project 6E</u> : <i>Neurochemical and neuropharmacological correlates of area postrema and nuclear tractus solitarii ablation and baroreceptor deafferentation-induced alterations on cardiovascular dynamics.</i> (PI: Speth)	80,000
	· <u>Project 6/Core Unit II</u> : <i>Neurochemistry.</i> (PI: Speth)	80,000
12/1983- 06/1984	<i>Neurohormonal mechanisms in hypertension.</i> NIH/NHLBI (Program Project/HL6835/Carlos M. Ferrario).	
	· <u>Project 2D</u> : <i>Angiotensin receptors: characterization and regulation.</i> (PI: Speth)	110,000
	· <u>Core III-Part II</u> : <i>Neurochemistry.</i> (PI: Speth)	200,000
07/1984- 06/1985	<i>Regulation of brain angiotensin receptors.</i> WSU/BRSG (11H-2550-8184).	9,000
07/1986- 06/1987	<i>Novel actions of angiotensin II in the brain.</i> WSU/Research Grant-in-Aid.	9,500
07/1986- 06/1987	<i>Brain catecholamine-angiotensin systems and hypertension.</i> AHA/WA Affiliate.	17,888
07/1986- 06/1989	<i>Brain angiotensin receptor function control and anatomy.</i> National Institute of Neurological and Communicative Disorders and Stroke.	188,252
12/1986- 11/1989	<i>Angiotensinergic-aminergic actions in the central nervous system.</i> National Institute of Neurological and Communicative Disorders and Stroke.	

**SPETH, Robert C.**

	· <u>Project 1 (program project):</u> <i>Interactions of aminergic and peptidergic systems.</i>	124,590
06/1989-05/1990	<i>Angiotensin II as a seminal additive.</i> Select Sires.	5,000
07/1989-06/1990	<i>Angiotensin II receptor localization in the reproductive tracts of domestic animals.</i> WSU/BRSG. (11H-2550-8184).	15,000
07/1990-06/1991	<i>Discrimination of angiotensin II receptor subtypes in the brain.</i> WSU/BRSG. (11H-2550-8184).	5,000
06/1991-05/1992	<i>Do the hypertensive actions of angiotensin II involve angiotensin II receptors?</i> WSU/WA Alcohol & Drug Abuse Program.	17,863
06/1991-05/1992	<i>Characterization of <sup>3</sup>H-DuP 753 binding sites.</i> DuPont Merck Pharmaceutical Co.	6,000
05/1992	<i>Unrestricted support.</i> Ciba-Geigy Ltd.	5,000
07/1996-06/1997	<i>Characterization of G protein-linked receptors.</i> WSU/CVM Intramural.	5,984
01/2003-12/2005	<i>Identification of endogenous agonists for brain AT-1 receptors.</i> AHA.	\$ 100,000
2/10-6/12	Brain specific non-AT1, non-AT2 angiotensin binding site NIH 1R21HL096357-01A2	\$314,576
7/10-6-12	Diversity Supplement for Andrea Linares - NIH	
7/10-6-12	Diversity Supplement for Luz Gonzalez - NIH	
7/10-6-12	Diversity Supplement for Jamala Swindle - NIH	
7/10-6-12	Diversity Supplement for Kira Santos - NIH	
7/10-6/12	Mechanisms of antihypertensive actions of angiotensin-converting enzyme-2 (ACE-2) Chancellor's Faculty Development Research Grant (Nova Southeastern University) \$10,000	
7/11-6/12	"Differential Desensitization of Salt Appetite and Thirst by Brain Angiotensin" Chancellor's Faculty Development Research Grant (Nova Southeastern University) (P.I. Robert Speth) \$10,000	
7/12-12/13	Development of radioligands for ACE-2 and the (pro)renin receptor (P)RR President's Faculty Development Research Grant (Nova Southeastern University) \$10,000	

**SPETH, Robert C.**

- 1/13-3/15 Development of a radioligand for assay of angiotensin-converting enzyme-2(ACE-2)  
NIH 1R15HL113905-01 (P.I. Robert Speth) \$300,000
- 1/13-3/14 Development of a radioligand for assay of angiotensin-converting enzyme-2(ACE-2) Diversity Fellowship Supplement to Malaika Jean-Baptist  
NIH 1R15HL113905-01 (P.I. Robert Speth) \$6,000
- 1/13-3/14 Development of a radioligand for assay of angiotensin-converting enzyme-2(ACE-2) Diversity Fellowship Supplement to Arline Joachim  
NIH 1R15HL113905-01 (P.I. Robert Speth) \$6,000
- 1/13-3/14 Development of a radioligand for assay of angiotensin-converting enzyme-2(ACE-2) Diversity Fellowship Supplement to Andrea Linares  
NIH 1R15HL113905-01 (P.I. Robert Speth) \$6,000
- 7/13-6/16 Center for Development of Radioligands  
Georgetown University Clinical and Translational Sciences Award  
UL1TR000101, National Center for Advancing Translational Sciences (NCATS), National Institutes of Health (Core Director, Robert Speth) \$18,343
- 7/14-6/15 AT-1 angiotensin receptor expression in the amygdala of a rodent model of PTSD. President's Faculty Development Research Grant (Nova Southeastern University) (Principal Investigator) \$10,000
- 7/14-6/15 Proliferation and Differentiation of Human Stem Cells by Agonism of AT1 and AT2. President's Faculty Development Research Grant (Nova Southeastern University) (Principal Investigator, Co-P.I Dr. James Munoz) \$10,000
- 7/1/15-12/31/16 Development of an angiotensin II-conjugate as a biased agonist at AT1 receptors. President's Faculty Development Research Grant (Nova Southeastern University) (P.I., Co-P.I Dr. Derek Daniels) \$15,000
- 7/1/16-1/31/18 Mechanisms Underlying the Cognitive Protective Effects of Exercise  
President's Faculty Development Research Grant (Nova Southeastern University) (Principal Investigator, Co-P.I Dr. Kathryn Sandberg) \$15,000
- 7/1/19-6/30/19 Demystifying the Receptor for Angiotensin 1-7  
President's Faculty Development Research Grant (Nova Southeastern University) (Principal Investigator) \$15,000



SPETH, Robert C.

**In progress**

7/1/22-12/31/23 Design of a Novel Therapeutic for Prevention of COVID-19 and Analysis of ACE2. President's Faculty Development Research Grant (Nova Southeastern University) Principal Investigator \$15,000

**Grants - Co-Investigator:**

DATE	TOTAL DIRECT COSTS
<b>Completed and In Progress</b>	
<b>Selected 1 of 5</b>	
7/90-6/92	Cardiovascular functions of angiotensin II in pontine nuclei. AHA TN Affiliate (PI: Brian Rowe). \$ 49,620
9/90-5/92	Effects of smooth and skeletal muscle relaxing drugs on urethral tone in obstructed male cats. WSU/Morris Animal Foundation (PI: Grant Knowlen). 13,250
4/91-3/94	Angiotensin receptor subtypes in the rat brain. NIH/Heart Lung and Blood Institute (PI: Brian Rowe). NIH R15HL46504 75,000
9/06-7/08	Center of Research Excellence - Natural Products Neuroscience \$7,702,289
	Division of Research Resources NIH (PI: Rae Matsumoto) NIH 1P20RR021929-01 Co-director In Vitro Pharmacology Core
7/1/15-6/30/15	BONE: Blocking osteoclasts using novel experimentation. \$15,000 President's Faculty Development Research Grant (Nova Southeastern University) Co-P.I with Dr. Mohamad Elazizi
7/14-6/18	Angiotensin receptor regulation by upstream short open reading frames NIH-NHLBI (PI: Kathryn Sandberg)
7/1/16-12/31/21	Epigenetic Mechanisms Underlying the Cognition-Impairing and Hypertension-Inducing Effects of Ovariectomy on Dahl Salt-Sensitive Rats- Health Professions Division, (Nova Southeastern University) (Co-P.I. with Dr. Malav Trivedi) \$7,500
8/1/18-2/28/19	NIH RO-1S grant supplement "Immune Modulation of Hypertension; And Cognitive Impact" August 1, 2018 - Feb 28, 2019 (Co-Investigator with Kathryn Sandberg) Subcontract with Georgetown University \$19,000

**SPETH, Robert C.**

- 7/1/19 – 6/30/19 Determine and characterize the physiological responses to iodoangiotensin 1-7 and angiotensin 1-7. Health Professions Division, (Nova Southeastern University) (Co-P.I. with Filipe Stoyell-Conti)  
\$7,500
- 8/1/20-12/31/21 Renin Angiotensin System Expression and Effect on Human Fibroblast-like Synoviocytes: A Novel Therapeutic Target for Rheumatoid Arthritis Treatment\_Health Professions Division, (Nova Southeastern University) (Co-P.I. with Dr. Danial Mehranfard)  
\$7,500
- 7/1/21-4/30/26 Brain Pathology in SARS-CoV-2 Disease (Georgetown Univ/NIH-NINDS R01-NS124204) (Co-P.I. with Kathryn Sandberg)  
\$760,000
- 4/1/22-3/31/24 Targeting the Renin-Angiotensin System to Ameliorate Cerebral Amyloid Angiopathy. AHA Institutional Research Enhancement Award American Heart Association (Co-P.I. with Lisa Robison)  
\$154,000
- 7/1/23-6/30/24 Optimizing Growth Conditions to Maximize CO<sub>2</sub> Capturing Capacity of Microalgae \$15,000  
President's Faculty Development Research Grant (Nova Southeastern University) Co-P.I with Dr. Reza Rezaghafard

**Contract Research Projects:**

DATE	TOTAL DIRECT COSTS
<b>Completed</b>	
9/14-10/14	Assessment of AT <sub>1</sub> angiotensin II receptor subtype in a mouse model of muscular dystrophy University of Iowa \$1,000
12/15-3/17	Receptor autoradiography of brain angiotensin receptors in a rodent model of stress. University of Pittsburgh \$6,000
10/17-3-18	Receptor autoradiography of brain alpha <sub>7</sub> homomeric nicotinic receptors. University of Pittsburgh \$3,000
<b>Current</b>	

SPETH, Robert C.

4/1/22-6/30/23 Analysis of AT<sub>2</sub> receptor agonist treated Zucker Rats. Tufts University \$12,000

**Grants (Participating Investigator):**

DATE		TOTAL DIRECT COSTS
<b>Completed</b>		
1995-1999	<i>Brain angiotensin II in hypertension.</i> NIH/NHLBI (PI: Kathleen Berecek).	\$ 780,407
1997-2002	<i>Role of intrinsic cardiac neurons in cardiac control.</i> NIH (HL58140; PI: Jeffrey Ardell).	\$1,043,296
1999-2001	<i>Aptamers as cellular targeting agents.</i> NIH/NCI (PI: Thomas Schmittgen).	\$200,000
2000-2001	<i>Does non-ACE generation of AngII explain the ACE-inhibitor resistance of renal progression in autosomal dominant polycystic kidney disease?</i> Merck & Co. (PI: Susan P. Bagby, MD).	\$24,500
1991-2003	<i>Students in Health Professional Schools Training Grant</i> (Short-term program). NIH/NCRR (PI: David Prieur).	\$ 115,080
1992-2003	<i>Minority Student Research Training Grant</i> (Short-term program). NIH/NHLBI (PI: David Prieur).	\$98,436
1998-2004	<i>Sleep regulation: the involvement of GHRH.</i> NIH (PI: James Krueger).	\$1,070,599
2001-2004	<i>Role of chymase-induced AngII formation in the hypertension and renal progression of human polycystic kidney disease?</i> AHA (PI: Susan Bagby, MD)	\$143,000
2002-2003	<i>Summer Undergraduate Research Fellowship (SURF) Program – Summer Research for undergraduate students interested in graduate work in Pharmacology.</i> Pharmaceutical Manufacturers Assoc. (PI: Raymond Quock).	\$30,000
2002-2004	<i>Short- and long-term effect of maternal separation on blood pressure control in rats.</i> AHA (PI: James Porter)	\$132,000

**SPETH, Robert C.**

2004-2005 Fetal Origins of Adult Disease. NIH (P.I: Susan Bagby)

9/06-7/08 Center of Research Excellence - Natural Products  
Neuroscience \$7,702,289  
Division of Research Resources NIH (PI: Rae Matsumoto)  
NIH 1P20RR021929-01  
Co-director In Vitro Pharmacology Core

## **PUBLICATIONS:**

### **Books Edited:**

Harding, J.W., J.W. Wright, **R.C. Speth**, and C.D. Barnes. 1988. *Angiotensin and Blood Pressure Regulation*. Academic Press: Orlando, FL; pp. 1-34.

### **Proceedings Edited:**

Proceedings of the 4<sup>th</sup> Annual Meeting of the Society for Veterinary Medical Ethics; Reno NV. October, 1997.

### **Book Chapters:**

1. **Speth, R.C.**, and H.I. Yamamura. 1979. Sodium-dependent high affinity neuronal choline uptake. In: *Nutrition and the Brain*. A. Barbeau, J.H. Growden & R.J. Wurtman (eds.). Raven Press: New York, NY; Vol. 5, pp. 129-139.
2. **Speth, R.C.**, N. Bresolin, T. Mimaki, P.P. Deshmukh, and H.I. Yamamura. 1981. Neuronal localization of benzodiazepine receptors in the murine cerebellum. In: *Advances in Biochemistry and Psychopharmacology* 26: 27-39.
3. **Speth, R.C.**, A. Guidotti, and H.I. Yamamura. 1981. The pharmacology of the benzodiazepines. In: *Neuropharmacology of Central Nervous System and Behavioral Disorders*. G.C. Palmer (ed.). Academic Press: New York, NY; pp. 243-283.
4. Yamamura, H.I., **R.C. Speth**, R.E. Hruska, N. Bresolin, B.A. Meiners, and R.J. Huxtable. 1981. Effects of kainic acid lesions on taurine transport into rat brain synaptosomes. In: *The Effects of Taurine on Excitable Tissues*. S.W. Schaffer, S.I. Baskin & J.J. Kocsis (eds.). Spectrum Publishers: New York, NY; pp. 73-80.
5. Smeby, R.R., A. Husain, and **R.C. Speth**. 1982. Properties and subcellular localization of brain renin and its substrates. In: *Experiments in Brain Research*. Suppl. 4: 118-125.

6. Ferrario, C.M., M.T. Schiavone, K.L. Barnes, K.B. Brosnihan, and **R.C. Speth**. 1985. Role of central mechanisms in the development of endocrine hypertension. In: *Essential Hypertension as an Endocrine Disease*. C.R.W. Edwards & R.M. Carey (eds.). Butterworth: Kent, UNITED KINGDOM; pp. 4-39.
7. Gehlert, D.R., **R.C. Speth**, and J.K. Wamsley. 1985. Quantitative autoradiography of angiotensin II receptors in brain and kidney: focus on cardiovascular implications. In: *Endocoids*. H. Lal, F. Labella & J. Lane (eds.). Alan R. Liss Publisher: New York, NY; pp. 243-249.
8. **Speth, R.C.**, J.K. Wamsley, J.W. Wright, R.H. Abhold, and J.W. Harding. 1987. Characterization of putative sites of action of angiotensin II in the rat central nervous system by *in vitro* receptor autoradiography with <sup>125</sup>I-sarcosine<sup>1</sup>isoleucine<sup>8</sup> angiotensin II. In: *Brain Peptides and Catecholamines in Cardiovascular Regulation*. J.P. Buckley & C.M. Ferrario (eds.). Raven Press: New York, NY; pp. 257-271.
9. **Speth, R.C.**, J.W. Wright, and J.W. Harding. 1988. Brain angiotensin II receptors: comparison of location and function. In: *Angiotensin and Blood Pressure Regulation*. J.W. Harding, J.W. Wright, **R.C. Speth** & C.D. Barnes (eds.). Academic Press: Orlando, FL; pp. 1-34.
10. Grove, K.L., **R.C. Speth**, and C.S. Zamora. 1991. Renin-angiotensin system on male reproduction. In: *Brain-Gut Hormones and Reproduction*. C.A. Johnston & C.D. Barnes (eds.). Telford Press: New York, NY; pp. 43-59.
11. **Speth, R.C.**, K.L. Grove, and C.S. Zamora. 1991. Renin-angiotensin system on female reproduction. In: *Brain-Gut Hormones and Reproduction*. C.A. Johnston & C.D. Barnes (eds.). Telford Press: New York, NY; pp. 21-41.
12. **Speth, R.C.**, K.L. Grove, and B.P. Rowe. 1991. Angiotensin and the locus coeruleus. In: *The Neurobiology of the Locus Coeruleus*. O. Pompeiano & C.D. Barnes (eds.). Elsevier Scientific: Amsterdam, THE NETHERLANDS; Vol. 88; pp. 217-226.
13. **Speth, R.C.**, S.M. Thompson, and S.J. Johns. 1995. Angiotensin II receptors: structural and functional considerations. In: *Tissue Renin Angiotensin Systems*. A. Mukhopadhyay & M.K. Raizada (eds.). Plenum Press: New York, NY; pp. 169-192.
14. Phillips, M.I., H. Wang, B. Kimura, **R.C. Speth**, and N. Ghazi. 1995. Brain angiotensin and the female reproductive cycle. In: *Tissue Renin Angiotensin Systems*. A. Mukhopadhyay & M.K. Raizada (eds.). Plenum Press: New York, NY; pp. 357-370.

15. **Speth, R.C.**, and J.W. Harding. 2001. Radiolabeling of angiotensin peptides. In: *Angiotensin Protocols, Methods in Molecular Biology*. D. Wang, M.D. (ed.). Humana Press: Totawa, NJ; pp. 275-296.
16. Potter P, **Speth RC**. The Role of Nutraceuticals and Natural Products. Chapter 73 Brody's Human Pharmacology 7<sup>th</sup> edition (In Press).
17. **Speth RC**. "Renin-Angiotensin Aldosterone System. In: Kenakin, T. (Ed.), *Comprehensive Pharmacology*. 2022 Vol. 4, pp.528-569. Elsevier. <https://dx.doi.org/10.1016/B978-0-12-820472-6.00160-2> .

**Papers (peer-reviewed):**

1. Schmidt, D.E., **R.C. Speth**, F. Welsch, and M.J. Schmidt. 1972. The use of microwave radiation in the determination of acetylcholine in the rat brain. *Brain Res.* 128: 377-389.
2. Schmidt, D.E., and **R.C. Speth**. 1975. Simultaneous analysis of choline and acetylcholine levels in rat brain by pyrolysis gas chromatography. *Anal. Biochem.* 67: 353-357.
3. **Speth, R.C.**, D.E. Schmidt, B.V.R. Sastry, and D.M. Buxbaum. 1976. *In vivo* and *in vitro* effects of bromoacetylcholine on rat brain acetylcholine levels and choline acetyltransferase activity. *Neuropharmacology* 15: 287-290.
4. **Speth, R.C.**, F.M. Chen, R. Kobayashi, J.M. Lindstrom, and H.I. Yamamura. 1977. Nicotinic cholinergic receptors in rat brain identified by <sup>125</sup>I-Naja naja siamensis alpha-toxin binding. *Brain Res.* 131: 350-355.
5. **Speth, R.C.**, G.J. Wastek, P.C. Johnson, and H.I. Yamamura. 1978. Benzodiazepine binding in human brain: characterization using <sup>3</sup>H-flunitrazepam. *Life Sci.* 22: 857-866.
6. Wastek, G.J., **R.C. Speth**, T.D. Reisine, and H.I. Yamamura. 1978. The effect of gamma-aminobutyric acid on <sup>3</sup>H-flunitrazepam binding in rat brain. *Eur. J. Pharmacol.* 50: 445-447.
7. Reisine, T.D., G.J. Wastek, **R.C. Speth**, E.D. Bird, and H.I. Yamamura. 1979. Alterations in the benzodiazepine receptor of Huntington's diseased human brain. *Brain Res.* 165: 183-187.
8. **Speth, R.C.**, N. Bresolin, and H.I. Yamamura. 1979. Acute diazepam administration produces rapid increases in brain benzodiazepine receptor density. *Eur. J. Pharmacol.* 59: 159-160.
9. **Speth, R.C.**, G.J. Wastek, T.D. Reisine and H.I. Yamamura. 1979. Benzodiazepine receptors: effects of tissue pre-incubation at 37°C. *Neurosci. Lett.* 13: 243-247.

10. **Speth, R.C.**, G.J. Wastek, and H.I. Yamamura. 1979. Benzodiazepine receptors: Temperature dependence of <sup>3</sup>H-flunitrazepam binding. *Life Sci.* 24: 351-358.
11. **Speth, R.C.**, and H.I. Yamamura. 1979. Benzodiazepine receptors: Alterations in mutant mouse cerebellum. *Eur. J. Pharmacol.* 54: 397-399.
12. **Speth, R.C.**, and H.I. Yamamura. 1979. On the ability of choline and its analogues to interact with muscarinic cholinergic receptors in the rat brain. *Eur. J. Pharmacol.* 58: 197-201.
13. Martin, A.R., U.M. Paradkar, G.W. Peng, **R.C. Speth**, H.I. Yamamura, and A.S. Horn. 1980. Conformationally restricted tricyclic antidepressants 1. Octahydrodi-benzodiazepino-aphthiridines as rigid imipramine analogues. *J. Med. Chem.* 23: 865-873.
14. Meiners, B.A., **R.C. Speth**, N. Bresolin, R.J. Huxtable, and H.I. Yamamura. 1980. Sodium dependent high affinity taurine transport into rat brain synaptosomes. *Fed. Proc.* 39: 2695-2700.
15. Overstreet, D.H., **R.C. Speth**, R.E. Hruska, F. Ehlert, Y. Dumont, D.J. Jenden, and H.I. Yamamura. 1980. Failure of septal lesions to alter muscarinic cholinergic or benzodiazepine binding sites in hippocampus of rat brain. *Brain Res.* 195: 203-207.
16. **Speth, R.C.**, R.W. Johnson, J. Regan, T.D. Reisine, R.M. Kobayashi, N. Bresolin, W.R. Roeske, and H.I. Yamamura. 1980. The benzodiazepine receptor of mammalian brain. *Fed. Proc.* 39: 3032-3038.
17. Brosnihan, K.B., C.M. Ferrario, J.M. Saavedra, and **R.C. Speth**. 1981. Catecholamines and serotonin in the area postrema of normal and sodium-depleted dogs. *Hypertension* 3 (Suppl. II): 151-154.
18. Husain, A., R.R. Smeby, J. Krontiris-Litowitz, and **R.C. Speth**. 1981. Brain renin: Localization in rat brain synaptosomal fractions. *Brain Res.* 222: 182-186.
19. **Speth, R.C.**, M.C. Khosla, M.M. Spech, and C.M. Ferrario. 1981. Rat [Ile<sup>5</sup>] but not bovine (Val) angiotensin raises plasma norepinephrine in rats. *Hypertension* 3 (Suppl. II): 25-29.
20. Bridle, P.A., K.B. Brosnihan, **R.C. Speth**, M. Goormastic, and C.M. Ferrario. 1983. Basal levels of plasma epinephrine and norepinephrine in the dog. *Hypertension* 5 (Suppl. V): 128-133.
21. Husain, A., F.M. Bumpus, R.R. Smeby, K.B. Brosnihan, M.C. Khosla, **R.C. Speth**, and C.M. Ferrario. 1983. Evidence for the existence of a family of biologically

- active and angiotensin I-like peptides in the dog cerebral nervous system. *Circ. Res.* 52: 460-464.
22. Suzuki, H., C.M. Ferrario, **R.C. Speth**, K.B. Brosnihan, R.R. Smeby, and P. deSilva. 1983. Alterations in plasma and cerebrospinal fluid norepinephrine and angiotensin II during the development of renal hypertension in conscious dogs. *Hypertension* 5 (Suppl. I): 139-148.
  23. Gehlert, D.R., **R.C. Speth**, D.P. Healy, and J.K. Wamsley. 1984. Autoradiographic localization of angiotensin II receptors in the rat brainstem. *Life Sci.* 34: 1565-1571.
  24. Gehlert, D.R., **R.C. Speth**, and J.K. Wamsley. 1984. Autoradiographic localization of angiotensin II receptors in the rat brain and kidney. *Eur. J. Pharmacol.* 98: 145-146.
  25. Gehlert, D.R., **R.C. Speth**, and J.K. Wamsley. 1984. *In vitro* autoradiographic localization of [<sup>125</sup>I]-angiotensin II binding sites in the rat and dog kidney. *Peptides* 5: 1043-1048.
  26. Singh, R., A. Husain, C.M. Ferrario, and **R.C. Speth**. 1984. Rat brain angiotensin II receptors: effects of intraventricular angiotensin II infusion. *Brain Res.* 303: 133-139.
  27. **Speth, R.C.**, and A. Husain. 1984. Preparation and one-step purification of mono-<sup>125</sup>I- angiotensin II for radioligand binding assays. *J. Pharmacol. Meth.* II: 137-151.
  28. **Speth, R.C.**, R. Singh, R.R. Smeby, C.M. Ferrario, and A. Husain. 1984. Restricted dietary sodium intake alters peripheral but not central angiotensin II receptors. *Neuroendocrinology* 38: 84-89.
  29. **Speth, R.C.**, M.B. Vallotton, J.K. Wamsley, M.C. Khosla, C.L. Chernicky, F.M. Bumpus, and C.M. Ferrario. 1984. Localization of angiotensin receptors in the canine CNS. *Clin. Exp. Hypertens.* [A]6: 1749-1753.
  30. **Speth, R.C.**, J.K. Wamsley, D.R. Gehlert, C.L. Chernicky, K.L. Barnes and. C.M. Ferrario. 1985. Angiotensin II receptors are discretely localized in the canine CNS. *Brain Res.* 326: 137-143.
  31. **Speth, R.C.**, and S.I. Harik. 1985. Angiotensin II receptor binding sites in brain microvessels. *Proc. Natl. Acad. Sci.* 82: 6340-6343.
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In addition, I have had scores of letters to editors and additional Op-Ed essays published in a variety of newspapers advocating support for the use of animals in biomedical research, evidence based science and societally relevant issues dating back to 1972 in the Nashville Tennessean up to 2023.

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