

# **CURRICULUM VITAE**

Sabena M. Conley, Ph.D.

## **Work Information:**

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## **Present Position:**

Post-doctoral Research Fellow  
Division of Nephrology and Hypertension  
Mayo Clinic, Rochester, MN, USA

## **Education:**

2007-2011 Fayetteville State University, B.S. Biology  
2011-2013 North Carolina Agricultural and Technical State University, M.S. Biology  
2013-2016 Virginia Commonwealth University, Ph.D. Pharmacology and Toxicology

## **Honors:**

2010 Ronald E. McNair Scholar, Fayetteville State University  
2011 B.S. *Cum Laude*, Fayetteville State University  
2012-2013 NIH T32 at North Carolina Agricultural and Technical State University  
2016 American Physiology Society Renal Section: Excellence in Renal Research  
2017-Present NIH T32 Post-doctoral Research Fellow, Mayo Clinic, Rochester  
2018 NIH-National Medical Association Travel Award  
2018-2020 NIH NIDDK Loan Repayment Awardee  
2018-2021 Burroughs Wellcome Fund Postdoctoral Enrichment Program  
2019 Midwest Clinical & Translational Research Trainee Travel Award

## **Professional Appointments:**

2011-2012 Teaching Assistant, North Carolina Agricultural and Technical State University

## **Volunteerism/Service and Leadership Roles:**

2015-2016 Student Officer: Secretary, Virginia Commonwealth University  
2017-Present Mentor, Bolder Options, Rochester, MN

## **Professional Memberships and Societies:**

Mayo Nephrology and Hypertension Research Committee  
American Society of Nephrology  
American Heart Association

## **Selected Presentations:**

*Poster*

1. **Conley S**, Salek S. A Comparison of the Effectiveness of Traditional and Computer Simulated Biology Laboratory Exercises. STEM Undergraduate Research Exposition, Fayetteville State University, Fayetteville, NC.

2. **Conley S**, Gunn S, Currie Y, Chao S. Impact of *Pseudomonas aeruginosa* on Reducing Toxicity of Diazinon in the Mealworm (*Tenebrio molitor*). ABRCMS (Annual Biomedical Research Conference for Minority Students), Charlotte, NC.
3. **Conley S**, Gunn S, Currie Y, Chao S. Impact of *Pseudomonas aeruginosa* on Reducing Toxicity of Diazinon in the Mealworm (*Tenebrio molitor*). State of North Carolina Undergraduate and Creativity Symposium (SNCURCS), Raleigh, NC.
4. **Conley S**, Gunn S, Currie Y, Chao S. Impact of *Pseudomonas aeruginosa* on Reducing Toxicity of Diazinon in the Mealworm (*Tenebrio molitor*). North Carolina LSAMP (Louis Stokes Alliance for Minority Participation) and RISE (Research Initiative for Scientific Enhancement) Joint Research Symposium, Fayetteville, NC.
5. **Conley S**, Martin B, Onger EM. Meprins Cleave OS-9 Present in Mouse Kidneys Subjected to Ischemia Reperfusion Acute Kidney Injury. Experimental Biology Boston, MA.
6. **Conley S**, Han J, Hurley S, Onger EM. Meprin Deficient Mice Have a More Severe Form of Diabetic Nephropathy. Experimental Biology Boston, MA.
7. Whitaker J, **Conley S**, Harrison SH, Onger EM, Hurley SL, Han J. Population Differences in Uropathic Bacteria in Diabetic and Meprin Deficient Mouse Models. Experimental Biology Boston, MA.
8. Li X, Zhu Q, **Conley S**, Hu J, Li PL, Li N. Inhibition of high salt-induced activation of NLRP3 inflammasome by mesenchymal stem cell transplantation in the renal medulla in Dahl S rats. Experimental Biology San Diego, CA.
9. Boini K, Xia M, **Conley S**, Gehr T, Li PL. Podocyte Specific Deletion of Acid Ceramidase Predisposes Mice to Obesity-Induced Glomerular Injury. Experimental Biology Boston, MA.
10. Boini K, Xia M, **Conley S**, Li G, Gehr T, Li PL. Prevention of High Fat-induced Podocyte Injury and Glomerular Sclerosis in Mice Lacking Nod-like Receptor Protein 3: Role of Inflammasome Extinction. Experimental Biology Boston, MA.
11. Zhida C, **Conley SM**, Li G, Xia M, Gehr TW, Boini KM, Li PL. NLRP3 Inflammasome as a Novel Target for Docosahexaenoic Acid and Its Metabolites to Abrogate Glomerular Injury during Hyperhomocysteinemia. Experimental Biology San Diego, CA.
12. **Conley SM**, Chen Z, Xia M, Boini KM, Gehr TW, Li PL. Role of Vav2 in Podocyte Inflammasome Activation and Glomerular Injury during Hyperhomocysteinemia. Experimental Biology San Diego, CA.
13. Xia M, Li G, **Conley SM**, Meng N, Boini KM, Ritter JK, Li PL. Prostamide-Mediated Protective Action of Anandamide on Nlrp3 Inflammasome Activation in Glomeruli of Mice with Hyperhomocysteinemia. Experimental Biology San Diego, CA.
14. Koka S, Xia M, **Conley SM**, Gehr TW, Li N, Li PL, Boini KM. Adiponectin Protects Mouse Podocytes from Acid Ceramidase Inhibition-Induced Injury. Experimental Biology San Diego, CA.
15. **Conley SM**, Kim SR, Jordan KL, Tang H, Zhu XY, Hickson LJ, Lerman LO. Impact of Stem Cell Senescence in Obesity. American Society of Nephrology San Diego, CA.
16. **Conley SM**, Zhu XY, Eirin A, Tang H, Lerman A, van Wijnen AJ, Lerman LO. Metabolic Syndrome Alters the Extracellular Vesicle Size Distribution of Porcine Mesenchymal Stem Cells. Burroughs Wellcome Fund Awardee Meeting Raleigh, NC.
17. **Conley SM**, Hickson LJ, Tang H, Jordan KL, Abumoawad AM, Kim SR, Zhu XY, Tchkonja T, Kirkland JL, Lerman LO. Obesity Induces Mesenchymal Stem Cell Senescence and Dysfunction. Midwest Clinical & Translational Research Chicago, IL.
18. Hickson LJ, Eirin A, **Conley SM**, Saad A, Mehta RA, Tang H, Woollard J, Textor SC, Lerman LO. Suitable for autologous transplant? Mesenchymal Stromal Cell Paracrine Function In Diabetic Kidney Disease. American Society of Nephrology San Diego, CA.
19. Isik B, Goksu BB, **Conley S**, Thaler R, Khani F, Abumoawad A, Zhu XY, Eirin A,

Hickson LJ, van Wijnen A, Textor SC, Lerman LO, Herrmann SM. Hypoxia Preconditioning Modifies Mesenchymal Stem cell Senescence and Epigenetics Mechanisms in Experimental Atherosclerotic Renal Artery Stenosis. American Society of Nephrology Washington, DC.

*Oral*

1. Effect of the Metabolic Syndrome on Expression of Insulin Signaling-Related Genes in Swine Mesenchymal Stem Cells. Nephrology Grand Rounds, Mayo Clinic, Rochester, MN.

*Invited Talks*

1. McNair Scholars Graduation Ceremony, Fayetteville State University, Fayetteville, NC.
2. Obesity-Induced Mesenchymal Stem Cell Senescence and Dysfunction. Discovery Science Emerging Scholars Lecture, Vanderbilt University, Nashville TN.

**Research Grants:**

*Ongoing Research Support*

Kidney Disease Research Training Program 02/06/2017 – 02/05/2020

PI: John C. Lieske, MD

5T32DK007013-38

Provides postdoctoral research training in Nephrology for individuals with MD or PhD degrees, preparing trainees to be independent investigators.

Role: Postdoctoral Research Fellow

Burroughs Wellcome Fund

09/01/2018 – 08/31/2021

Offers funds to support career development activities for postdoctoral fellows whose training and professional development are guided by mentors committed to helping them advance to careers in biomedical or medical research.

Role: PI

*Completed Research Support*

Basic Immune Mechanisms

05/01/2012 – 08/31/2013

PI: Jenny P. Ting, PhD

5T32AI007273-28

Initiative between the University of North Carolina at Chapel Hill and North Carolina Agricultural and Technical University, that focuses on training master degree students to be competitive for PhD programs or science-related careers.

Role: Graduate Research Fellow

**Bibliography:**

*Peer-reviewed articles*

1. Abais JM, Xia M, Li G, Chen Y, **Conley SM**, Gehr TW, Boini KM, Li PL. Nod-like receptor protein 3 (NLRP3) inflammasome activation and podocyte injury via thioredoxin-interacting protein (TXNIP) during hyperhomocysteinemia. *J Biol Chem.* 2014; 289(39):27159-68. PMID: 25138219.
2. Xia M, **Conley SM**, Li G, Li PL, Boini KM. Inhibition of hyperhomocysteinemia-induced inflammasome activation and glomerular sclerosis by NLRP3 gene deletion. *Cell Physiol Biochem.* 2014; 34(3):829-41. PMID: 25171193.
3. Martin BL, **Conley SM**, Harris RS, Stanley CD, Onger EM. Hypoxia associated proteolytic processing of OS-9 by the metalloproteinase meprin  $\beta$ . *Int J Nephrol.* 2016; 2016:2851803. PMID: 2748637.

4. Zhu Q, Li XX, Wang W, Hu J, Li PL, **Conley S**, Li N. Mesenchymal stem cell transplantation inhibited high salt-induced activation of the NLRP3 inflammasome in the renal medulla in Dahl S rats. *Am J Physiol Renal Physiol*. 2016 Apr 1; 310(7):F621-F627. PMID: 26764201.
5. Bylander JE, Ahmed F, **Conley SM**, Mwiza JM, Ongeri EM. Meprin Metalloprotease Deficiency Associated with Higher Mortality Rates and More Severe Diabetic Kidney Injury in Mice with STZ-Induced Type 1 Diabetes. *J Diabetes Res*. 2017; 2017:9035038. PMID: 28804725.
6. **Conley SM**, Abais JM, Boini KM, Li PL. Inflammasome Activation in Chronic Glomerular Diseases. *Curr Drug Targets*. 2017; 18(9):1019-1029. PMID: 27538510.
7. **Conley SM**, Abais-Battad JM, Yuan X, Zhang Q, Boini KM, Li PL. Contribution of guanine nucleotide exchange factor Vav2 to NLRP3 inflammasome activation in mouse podocytes during hyperhomocysteinemia. *Free Radic Biol Med*. 2017 May; 106:236-244. PMID: 28193546.
8. Li G, Chen Z, Bhat OM, Zhang Q, Abais-Battad JM, **Conley SM**, Ritter JK, Li PL. NLRP3 inflammasome as a novel target for docosahexaenoic acid metabolites to abrogate glomerular injury. *J Lipid Res*. 2017 Jun; 58(6):1080-1090. PMID: 28404641.
9. **Conley SM**, Zhu XY, Eirin A, Tang H, Lerman A, van Wijnen AJ, Lerman LO. Metabolic syndrome alters expression of insulin signaling-related genes in swine mesenchymal stem cells. *Gene*. 2017; S0378-1119(17)30932. PMID: 29101070.
10. Aghajani Nargesi A, Zhu XY, Hickson LJ, **Conley SM**, van Wijnen AJ, Lerman LO, Eirin A. Metabolic Syndrome Modulates Protein Import into the Mitochondria of Porcine Mesenchymal Stem Cells. *Stem Cell Rev*. 2019 Jun;15(3):427-438. PMID: 30338499.
11. **Conley SM**, Shook JE, Zhu XY, Eirin A, Jordan KL, Woollard JR, Isik B, Hickson LJ, Puranik AS, Lerman LO. Metabolic Syndrome Induces Release of Smaller Extracellular Vesicles from Porcine Mesenchymal Stem Cells. *Cell Transplant*. 2019 Jun 28:963689719860840. PMID: 31250656.
12. Zhang Q, **Conley SM**, Li G, Yuan X, Li PL. Rac1 GTPase Inhibition Blocked Podocyte Injury and Glomerular Sclerosis during Hyperhomocysteinemia via Suppression of Nucleotide-Binding Oligomerization Domain-Like Receptor Containing Pyrin Domain 3 Inflammasome Activation. *Kidney Blood Press Res*. 2019 Jul 2:1-20. PMID: 31266025.
13. Aghajani Nargesi A, Zhu XY, **Conley SM**, Woollard JR, Saadiq IM, Lerman LO. Renovascular disease induces mitochondrial damage in swine scattered tubular cells. *AJP Renal*, Accepted 08/20/19.