

## Curriculum Vitae

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### Robin Shoemaker, PhD

Assistant Professor, Regular Title Series  
Department of Dietetics and Human Nutrition  
College of Agriculture, Food, and Environment  
University of Kentucky

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## I. EDUCATION

### Undergraduate

12/2004 University of Colorado, Boulder, CO  
Bachelor of Arts and Sciences, Chemistry

### Graduate

8/2010 - 5/2015 University of Kentucky, Lexington, KY  
PhD, Pharmacology and Nutritional Sciences  
Mentor: Lisa Cassis, PhD  
Project: *Regulation of pancreatic  $\beta$ -cell function by the renin-angiotensin system (RAS) in type 2 diabetes*

### Post-graduate

5/2015 – 12/2017 University of Kentucky, Lexington, KY  
Postdoctoral Fellowship  
Mentor: Lisa Cassis, PhD  
Project: *Role of adipocyte angiotensin-converting enzyme 2 (ACE2) in regulation of obesity-hypertension*

## II. ACADEMIC APPOINTMENTS

### Faculty

01/2018 University of Kentucky, Lexington, KY  
Assistant Professor of Dietetics and Human Nutrition, Regular Title Series, tenure-track, full-time

## III. TEACHING ACTIVITIES

1/2013-05/2015 *Bluegrass Community and Technical College, Lexington, KY*  
Anatomy and Physiology 2 (Bio139), lecture (3 credits) and lab (2 credits)  
*University of Kentucky, Lexington, KY*

1/2018 – 5/2020 DHN 600 Research Methods in Nutrition and Food Systems (3 credits)  
10/2018 DHN 318 Guest Lecture

1/2019 – 12/2020 DHN 408G Seminar in Dietetics and Human Nutrition (1 credit)  
9/2019 – present DHN 591 Special Problems, Directed Independent Study  
3/2021 Guest Lecture to MFM Fellows, RAS in Pregnancy  
1/2021- present DHN 510 Advanced Nutrition (3 credits)  
9/2021 DHN 311 Nutritional Biochemistry (3 credits), Guest Co-Instructor

## IV. ADVISING AND MENTORING

### Directed Student Learning

5/2011 – 8/2011 Mentor, STEP-UP High School Summer Research Program (NIH NIDDK), University of Kentucky

5/2017 – 8/2017 Mentor, Summer Undergraduate Research Experience in Environmental Health

|                  |   |
|------------------|---|
| 8/2018-12/2018   | Sciences Program, University of Kentucky  |
| 5/2018 - 8/2019  | Dakotah Muniz, Undergraduate research, College of Pharmacy<br>Xiaolin Xu, Undergraduate research, and 2019 Summer Research & Creativity Fellowship (\$3000) |
| 9/2019 – 12/2019 | George Butros, Undergraduate research, Dietetics and Human Nutrition  |
| 9/2019 – 12/2019 | Alex Chang, Undergraduate research, Dietetics and Human Nutrition   |
| 1/2019 - present | Rae Goins, Directed Independent Study, Dietetics and Human Nutrition (CAFE Research award, \$1000)  |
| 1/2020 – present | Samantha Udarbe, Undergraduate research, Dietetics and Human Nutrition  |
| 6/2021           | Alana Kassis, Summer Undergraduate Research Activity Award (CAFE), Co-mentor with Dr. Analia Lora (UK COM)  |
| 9/2020 - present | Patrick Budros, Undergraduate research, Biology   |

### **Thesis and Dissertation**

|                  |  |
|------------------|--|
| 1/2018 – present | Master's advisory committee, Stephanie Daniel, Dietetics and Human Nutrition   |
| 1/2019 – present | Doctoral advisory committee, Julia Howell, Biology   |
| 1/2019 – 5/2020  | Master's thesis chair, Kayla Dudick, Dietetics and Human Nutrition<br><i>Cardiac metabolic effects of obesity during pregnancy in mice</i><br>(CAFE Research award, \$750; Kilpatrick graduate fellowship, \$2500) |
| 7/2020 – 12/2020 | Master's advisory committee, Jack Moreland, Dietetics and Human Nutrition  |
| 1/2021 – present | Master's thesis chair, Dolph Davis, Dietetics and Human Nutrition<br><i>Nutrition Care in COVID Critical Patients</i>  |
| 1/2021 – present | Master's thesis chair, Lucrecia Valdez, Dietetics and Human Nutrition<br><i>Hypertension in Adolescents</i>  |

### **V. ADMINISTRATIVE ACTIVITIES & UNIVERSITY SERVICE**

|                   |   |
|-------------------|---|
| 12/2018 – present | Associate Director of Graduate Studies, Dietetics and Human Nutrition   |
| 8/2018 – present  | Graduate Faculty and Admission Committee, Dietetics and Human Nutrition |
| 10/2018           | School of HES Hall of Fame Committee                                    |
| 10/2018 – present | Gill Heart Women's Heart Health Research Initiative Board Member        |
| 12/2019 – 7/2020  | Acting Director of Graduate Studies, Dietetics and Human Nutrition      |
| 1/2020            | School of HES Graduate Fellowship Committee                             |
| 4/2020 – present  | Graduate Faculty member, Pharmacology and Nutritional Sciences, COM     |
| 5/2020 – 12/2020  | UK Cure Alliance Team   |

### **VI. PROFESSIONAL ACTIVITIES**

#### **Professional Memberships**

|               |   |
|---------------|---|
| 2012-present  | American Heart Association (179544871)                                      |
| 2014-present  | American Physiological Society (00169027)                                   |
| 2018- present | American Society for Pharmacology and Experimental Therapeutics (000054904) |
| 2019- present | American Society for Nutrition (59245)                                      |

#### **Professional Development**

|                  |  |
|------------------|--|
| 1/2018 – present | Faculty Research Meeting (weekly; Nutritional Sciences, Saha Cardiovascular, Physiology, Internal Medicine)  |
| 8/2018           | Grant Writers Seminar and Workshop   |
| 1/2019 – 8/2020  | Associate (unfunded), BIRCWH (Building Interdisciplinary Research Careers in Women's Health), a competitive, multidisciplinary, NIH-funded institutional faculty training grant meets 2-4 times per month for 90 minutes |
| 1/2020 – 4/2020  | Faculty Success Program, National Center for Faculty Development & Diversity (sponsored by the BIRCWH)   |
| 9/1010 – Current | Scholar (funded), BIRCWH   |

#### **Journal Peer Reviewing**

## Public Service

3/2019 Girl Scout Event, sponsored by Gill Heart Women's Heart Health Research Initiative

## VII. RESEARCH AND INTELLECTUAL CONTRIBUTIONS

### Publications

1. **Robin Shoemaker**, Marko Poglitsch, Hong Huang, Katherine Vignes, Aarthi Srinivasan, Aric Schadler, John Bauer, John O'Brien. Molecular profiling of the RAS reveals soluble ACE2 increases during pregnancy and in preeclampsia. *Submitted*. 2021.
2. **Robin Shoemaker**. Differential cardiac geometry in lean vs obese female mice. *Submitted*. 2021.
3. Ensor CM, AlSiraj Y, Shoemaker R, Sturgill J, Keshavamurthy S, Gordon EM, Dong BE, Waters C, Cassis LA. SARS-CoV-2 Spike Protein Regulation of Angiotensin Converting Enzyme 2 and Tissue Renin-Angiotensin Systems: Influence of Biologic Sex. *bioRxiv*. 2021 Sep 14. PMID: 34545369 (Preprint).
4. Che, C, Dudick, K<sup>@</sup>, **Shoemaker, R**. Cardiac hypertrophy with obesity is augmented after pregnancy in C57BL/6 mice. *Biology of Sex Differences*. 2019 Dec 16;10(1):59. PMID: 31842996
5. **Shoemaker, R<sup>#</sup>**, Tannock, LR, Thatcher, S, Su, W, Gong, M, Yiannikouris, F, Ensor, M, Gurley, S, Cassis, LA. Adipocyte deficiency of ACE2 increases systolic blood pressures of obese female C57BL/6 mice. *Biology of Sex Differences*. 2019 Sept 4;10(1):45. PMID: 31484552.
6. **Shoemaker, R<sup>#</sup>**, Chen, J, Alsiraj, Y, Cassis, L. Pancreatic AT1aR deficiency decreases insulin secretion in obese C57BL/6 mice. *American Journal of Hypertension*. 2019 May 9;32(6):597-604. PMID: 30903169.
7. Erin Jackson, **Robin Shoemaker**, Nika Larian, Lisa Cassis. Adipose tissue as a site of toxin accumulation. *Comprehensive Physiology*. 2017 Sept 12;(4):1085-1135. PMID: 28915320
8. Wang Y; **Shoemaker R**; Powell D; Su W; Thatcher S; Cassis, L. Differential effects of Mas receptor deficiency on cardiac function and blood pressure in obese male and female mice. *Am J Physiol Heart Circ Physiol*. 2017 Mar 1;312(3): H459-468. PMID: 27986659
9. **Shoemaker, R**; Yiannikouris, F; Thatcher, S; Cassis, L. ACE2 Deficiency Reduces Beta-Cell Mass and Impairs Beta-Cell Proliferation in Obese C57BL/6 Mice. *Am J Physiol Endocrinol Metab*. 2015 Oct 1;309(7):E621-31. PMID: 26389599
10. Yiannikouris F, Wang Y, **Shoemaker R**, Larian N, Thompson J, English VL, Charnigo R, Su W, Gong M, Cassis LA. Deficiency of angiotensinogen in hepatocytes markedly decreases blood pressure in lean and obese male mice. *Hypertension*. 2015 Oct;66(4):836-42. PMID: 26303292
11. Wang, Y; **Shoemaker, R**; Thatcher, S; Yiannikouris, F; English, V; Cassis, L. Administration of 17 $\beta$ -Estradiol to Ovariectomized Obese Female Mice Reverses Obesity-hypertension Through an ACE2-Dependent Mechanism. *Am J Physiol Endocrinol Metab*. 2015 Jun 15;308(12):E1066-75. PMID: 26078188
12. Nicki A. Baker \*, **Robin Shoemaker\***, Victoria English, Nika Larian, Manjula Sunkara, Andrew J. Morris, Mary Walker, Frederique Yiannikouris, and Lisa A. Cassis. Effects of Adipocyte Aryl Hydrocarbon Receptor Deficiency on PCB-Induced Disruption of Glucose Homeostasis in Lean and Obese Mice. *Environ Health Perspect*. 2015 Oct;123(10):944-50. PMID: 25734695

13. Putnam, K; **Shoemaker, R**; Yiannikouris, F; Cassis, L.A. The Renin Angiotensin System: A Target of and Contributor to Dyslipidemias, Altered Glucose Homeostasis and Hypertension of the Metabolic Syndrome. *Am J Physiol Heart Circ Physiol* 2012 Mar 15;302(6):H1219-30. PMID: 22227126
14. Gupte M; Thatcher SE; Boustany-Kari CM; **Shoemaker R**; Yiannikouris F; Zhang X; Karounos M; Cassis LA. Angiotensin converting enzyme 2 contributes to sex differences in the development of obesity hypertension in C57BL/6 mice. *Arterioscler Thromb Vasc Biol.* 2012 Jun;32(6):1392-9. PMID: 22460555
15. Stoffel, C.L.; **Finch, R<sup>^</sup>**; Christensen, K.; Edwards, D.; Rowlen, K.L. Rapid Determination of a Baculovirus Titer by a Dual Channel Virus Counter. *American Biotechnology Laboratory.* 2005 Nov 23(12):24-25.

#, Indicates corresponding author

@, Indicates student

\*, Indicates equal contribution by authors

^, Indicates maiden name

### **Abstract presentations and speaking engagements**

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|---------|---|
| 9/2021  | Poster: SARS-CoV-2 Spike Protein Regulation of Angiotensin Converting Enzyme 2 and Tissue Renin-Angiotensin Systems: Influence of Biologic Sex (Author). AHA Council on Hypertension, Virtual.  |
| 7/2021  | Poster: Circulating ACE2 increases in Pregnancy and is Associated with Preterm Preeclampsia (Corr author and presenter). Society for Reproductive Investigation, Boston, MA 2021.   |
| 9/2020  | Shoemaker, R. (Senior author and poster presenter), Dudick, K. C. (Student, Author). Poster: "Differential cardiac geometry during pregnancy in lean versus obese mice". AHA Council on Hypertension, Virtual                                       |
| 2/2020  | Shoemaker, R (Presenter & Author). Poster: "Classical and alternative renin-angiotensin system in high-risk pregnancies". Gordon Research Conference – Angiotensin. Barga, Italy  |
| 2/2020  | Shoemaker, R. (Senior author), Dudick, K. C. (Student, Presenter and Author). Three minute talk: "Cardiac effects of obesity during pregnancy," Healthy Hearts Annual Symposium. University of Kentucky   |
| 1/2020  | Shoemaker, R (presenter and author). Poster: "Cardiac effects of obesity during pregnancy". COCVD COBRE poster session, University of Kentucky.   |
| 11/2019 | Shoemaker, R (presenter and author). "Cardiac effects of obesity during pregnancy". COCVD COBRE quarterly meeting, University of Kentucky.  |
| 5/2019  | Shoemaker, R. (Senior author), Dudick, K. C. (Student, Presenter Only). Poster: "Cardiac hypertrophy with obesity is augmented after pregnancy in C57BL/6 mice," Barnstable Brown Obesity and Diabetes Annual Research Day, University of Kentucky. |
| 4/2019  | Shoemaker, R. (Presenter & Author) Invited symposium speaker: "ACE2 and Sex Differences in Obesity-Hypertension," American Society for Pharmacology and Experimental Therapeutics (ASPET) at Experimental Biology. Orlando, FL, United States       |
| 9/2017  | AHA-Council on Hypertension (selected podium presentation)  |
| 9/2016  | AHA- Council on Hypertension<br><i>Awarded Trainee poster prize</i>   |
| 10/2014 | Gill Heart Cardiovascular Research Day (poster and selected podium presentation)  |
| 9/2014  | AHA-Council on Hypertension (selected podium presentation)  |
| 5/2014  | Barnstable Brown Diabetes and Obesity Research Day (poster)<br><i>Awarded 1<sup>st</sup> place poster winner</i>  |
| 3/2014  | Gordon Angiotensin Seminar (invited podium presentation) and Conference (poster)  |
| 9/2013  | AHA-Council on Hypertension<br><i>Received a travel award and selected for podium presentation in the category of Top Trainee Abstracts</i>   |
| 5/2013  | Barnstable Brown Diabetes and Obesity Research Day (poster and selected podium presentation)<br><i>Awarded 2<sup>nd</sup> place poster winner</i>   |

## **Funding**

*In Review, Submitted July 2021*

NIH NHLBI

Mechanisms of Sex Differences in COVID-19: Focus on ACE2

Role: Co-I (MPI: Lisa Cassis and Chris Waters)

*In Review, Submitted July 2021*

NIH NHLBI

Angiotensin: A link between obesity and hypertension. Focus on ACE2

Role: Co-I (PI: Lisa Cassis)

UK CAFE Research Activity Award

4/2021

UK RAS Analytical Laboratory

\$25,000

Role: PI

5K12DA035150

9/1/20 – 8/31/22

Dysregulation of ACE2 and Preeclampsia

Internal, Building Interdisciplinary Research Careers in Women's Health (BIRCWH)

75% salary support

Role: PI

5K12DA035150

4/1/20 – 7/31/20

Classical and alternative renin-angiotensin system in pregnancies at high-risk for preeclampsia

Internal, Building Interdisciplinary Research Careers in Women's Health (BIRCWH), pilot

\$10,000

Role: PI

8P20GM103527-05

4/1/19 – 7/31/19

Cardiac consequences of obesity during pregnancy

Internal, Center of Biomedical Research in Obesity and Cardiovascular Disease (COBRE), pilot

\$50,000

Role: PI

17POST33410015

07/01/16 – 12/31/17

American Heart Association postdoctoral fellowship

\$94,000

Role: PI

12PRE12050430

7/1/12 – 6/30/14

American Heart Association predoctoral fellowship

\$50,000

Role: PI

T32HL072743

4/1/12 – 6/1/12

Internal, NIH Interdisciplinary Cardiovascular Training Grant (declined to accept AHA fellowship)

2003-2004 – Undergraduate Fellow: NSF K-12 Science Outreach Education Grant

2003-2004 – Undergraduate Research Opportunities Program: Summer Fellowship