

CURRICULUM VITAE

Name: Ibra (Drew) S. Fancher, IV

Title: Assistant Professor – Tenure Track

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Education and Training:

Research Assistant Professor in the laboratory of Irena Levitan at the University of Illinois at Chicago - April, 2019- August, 2020.

Postdoctoral position at the University of Illinois, Chicago (2014-2019)
75% appointment with College of Medicine: Department of Pulmonary, Critical Care, Sleep and Allergy – Primary Mentor, Irena Levitan, PhD
25% appointment with College of Applied Health Sciences, Secondary Mentor, Shane Phillips, PT, PhD

Ph.D.; Exercise Physiology; West Virginia University School of Medicine (2009-2014)

B.S.; Biology; St. Vincent College; Latrobe, PA (2005-2009)

Funding:

NIH P20GM113125-06 6564, start date 9/1/21. Lead PI: David G. Edwards, PhD.

University of Delaware General University Research award, 8/1/21

Awards and Honors:

University of Delaware INBRE Start-up Award, 8/19/21

University of Delaware INBRE Core Center Access Award, January 2021

Presented in the University of Illinois at Chicago Alumni Spotlight, Spring 2021 edition

Co-chaired a Microcirculatory October webinar series entitled “Cerebrovascular Health in Aging and Obesity.” 10/2020

Membership in Professional Organizations:

American Physiological Society (2012-present)
American Heart Association (2013-present)
North American Vascular Biology Organization (2015-2018)
Member of the Postdoctoral Association (2015-2019)
Microcirculatory Society 2020-present

Peer-reviewed publications:

1. Hwang CL, Chen SH, Chou CH, Grigoriadis G, Liao TC, **Fancher IS**, Arena R, Phillips SA. The physiological benefits of sitting less and moving more: Opportunities for future research. *Prog Cardiovasc Dis*. 2021 Jan 13;S0033-0620(21)00003-7. Online ahead of print.
2. **Fancher IS**, Le Master E, Ahn SJ, Adamos C, Lee JC, Berdyshev E, Dull RO, Phillips SA, Levitan I. Impairment of Flow-Sensitive Inwardly Rectifying K⁺ Channels via Disruption of Glycocalyx Mediates Obesity-Induced Endothelial Dysfunction. *Arterioscler Thromb Vasc Biol*. 2020 Sep;40(9):e240-e255. doi: 10.1161/ATVBAHA.120.314935.
3. †**Fancher IS** and Levitan I. Electrophysiological recordings of single-cell ion currents under well-defined shear stress. *J Vis Exp*. (150), e59776, doi:10.3791/59776 (2019).
†Corresponding author.
4. Boriushkin E, **Fancher IS**, and Levitan I. Shear-stress sensitive inwardly-rectifying K⁺ channels regulate developmental retinal angiogenesis by vessel regression. *Cell Physiol Biochem*. 2019;52(6):1569-1583.
5. **Fancher IS**, Rubenstein I, Levitan I. Potential strategies to reduce blood pressure in treatment resistant hypertension using FDA-approved nanodrug delivery platforms. *Hypertension*. 2019 Feb;73(2):250-257.
6. LeMaster E, **Fancher IS**, Lee J, and Levitan I. Comparative analysis of endothelial cell and sub-endothelial cell elastic moduli in young and aged mice: Role of CD36. *J BioMech*. 2018 Jul 25;76:263-268.
7. †**Fancher IS**, Ahn SJ, Adamos C, Osborn C, Oh MJ, Fang Y, Reardon CA, Getz GS, Phillips SA, †Levitan I. Hypercholesterolemia-Induced Loss of Flow-Induced Vasodilation and Lesion Formation in Apolipoprotein E-Deficient Mice Critically Depend on Inwardly Rectifying K⁺ Channels. *J Am Heart Assoc*. 2018 Mar 3;7(5). Pii: e007430. doi: 10.1161/JAHA.117.007430.
†Corresponding authors. Received Editorial in JAHA entitled “Regulation of Kir2.1 Function Under Shear stress and Cholesterol Loading.”
8. LeMaster E, Huang RT, Zhang C, Bogachkov Y, Coles C, Shentu TP, Sheng Y, **Fancher IS**, Ng C, Christoforidis T, Subbaiah PV, Berdyshev E, Qain Z, Eddington D, Lee J, Cho M, Fang Y, Minshall RD, and Levitan I. Proatherogenic Flow Increases Endothelial Stiffness via Enhanced CD36 (Cluster of Differentiation 36)-Mediated OxLDL (Oxidized Low-Density Lipoprotein) Uptake. *Arterioscler Thromb Vasc Biol*. 2018 Jan;38(1):64-75.

9. Robinson AT, **Fancher IS**, Mahumoud AM, Phillips SA. Microvascular Vasodilator Plasticity Following Acute Exercise. *Exerc Sport Sci Rev*. 2018 Jan;46(1):48-55.
10. *Zinkevich NS, ***Fancher IS**, Gutterman DG, Phillips SA. Roles of NADPH-oxidase and mitochondria in flow-induced vasodilation of human adipose arterioles: ROS induced ROS release in coronary artery disease. *Microcirculation*. 2017 Aug;24(6). DOI: 10.1111/micc.12380
*Authors contributed equally.
11. Ozemek C, Phillips SA, Popovic D, Laddu-Patel D, **Fancher IS**, Arena R, Lavie CJ. Nonpharmacologic management of hypertension: a multidisciplinary approach. *Curr Opin Cardiol*. 2017 Jul;32(4):381-388.
12. Robinson AR, **Fancher IS**, Sudhahar V, Bian JT, Cook MD, Ushio-Fukai M, Brown MD, Fukai T, and Phillips SA. Short-term Regular Aerobic Exercise Reduces Oxidative Stress Produced by Acute High Intraluminal Pressure in the Adipose Microvasculature. *AJP Heart and Circ*. 2017 May 1; 312(5):H896-H906.
13. Ahn SJ, **Fancher IS**, Bian JT, Zhang CX, Schwab S, Gaffin R, Phillips SA, and Levitan I. Inwardly-rectifying K⁺ channels are major contributors to flow-induced vasodilation in resistance arteries. *J Physiol*. 2017 April 1; 595(7):2339-2364.
14. DelloStritto D, Connell PJ, Dick GM, **Fancher IS**, Klarich B, Fahmy JN, Kang PT, Chen YR, Damron DS, Thodeti CK, and Bratz IN. Differential regulation of TRPV1 channels by H₂O₂: implications for diabetic microvascular dysfunction. *Basic Res Cardiol*. 2016 Mar;111(2):21.
15. **Fancher IS**, Butcher JT, Brooks SD, Rottgen TS, Skaff PR, Frisbee JC, and Dick GM. DPO-1-sensitive K⁺ channels contribute to the vascular tone and reactivity of resistance arteries from brain and skeletal muscle. *Microcirc*. 2015 May;22(4):315-25.
16. *Rottgen TS, ***Fancher IS**, Asano S, Widlanski TS, Dick GM. Bisphenol A activates BK channels through effects on α and β 1 subunits. *Channels*. 2014 Jan 29;8(3), 1-9.
*Authors contributed equally.
17. **Fancher IS**, Dick GM, Hollander JM. Diabetes reduces the function and expression of ATP-dependent K⁺ channels in cardiac mitochondria. *Life Sci*. 2013 Mar 28;92(11):664-8.
18. Asano S, Bratz IN, Berwick ZC, **Fancher IS**, Tune JD, Dick GM. Penitrem A as a tool to understand the role of BK channels in vascular function. *J Pharmacol Exp Ther*. 2012 Aug;342(2):453-60.

Invited Book chapters and Commentaries:

1. **Fancher IS**. Cardiovascular mechanosensitive ion channels – Translating physical force into physiological responses. *Curr Top Membr*. 2021;87:47-95.
2. **Fancher IS** and Levitan I. Endothelial inwardly-rectifying K⁺ channels as a key component of shear stress-induced mechanotransduction. Ion Channels and Ca²⁺ Signaling in the Microcirculation. 2020 May; Ch. 3: 59-88.
3. Levitan I, **Fancher IS**, Berdyshev E. Association of circulating oxidized lipids with

cardiovascular outcomes. Lipidomics in Health and Disease: Methods and Application. 2018; Ch.9: 137-154.

4. **Fancher IS**, Robinson AT, and Phillips, SA. Crosstalk Debate: Comment on “Acute exercise elicits damage to the endothelial layer of systemic blood vessels in healthy individuals” entitled *A necessary distinction when discussing acute exercise and the endothelium*. *J Physiol* 0.0 (2018) pp 1-7.
5. Levitan I, **Fancher IS**, Ahn SJ, and Rosenhouse-Dantsker A. Physiological roles and cholesterol sensitivity of endothelial inwardly-rectifying K⁺ channels: specific cholesterol-protein interactions through nonannular binding sites. Vascular Ion Channels in Physiology and Disease. 2016 Sept; Ch.15: 327-347.

Invited Presentations/Symposia:

University of Delaware, Department of Biological Sciences 2021 Fall Seminar Series. Title: Obesity and Endothelial Dysfunction: Impairment of Flow-sensitive Kir Channels in Distinct Vascular Beds. September 13th, 2021; in-person and virtual.

University of Illinois at Chicago, Diabetes & Obesity Research Seminar Series. Title: Impairment of Flow-Sensitive Inwardly Rectifying K⁺ Channels via Disruption of Glycocalyx Mediates Obesity-Induced Endothelial Dysfunction. April 14, 2021; virtual.

2018 Rapid Oral Fire Presentation at American Heart Association, Scientific Sessions, Chicago, IL. Session Title: Revelation of unprecedented molecular mechanisms of endothelial dysfunction
Abstract Title: Obesity Induces Endothelial Dysfunction in Arteries of Visceral Adipose Through Impairment of the Inwardly Rectifying K⁺ (Kir2.1) Channel. November 12, 2018.

University of Illinois at Chicago, Dept. of Pharmacology. October 15, 2018.

University of Illinois at Chicago, Dept. of Medicine. February 1, 2018.

2017 South Eastern Lipid Research Conference/UK Cardiovascular Research Day. Hypercholesterolemia-induced endothelial dysfunction is rescued by overexpression of endothelial Kir2.1 in resistance arteries. November 3, 2017.

University of Illinois at Chicago, Dept. of Medicine. March 2, 2017.

University of Illinois at Chicago, Dept. of Medicine. August 4, 2014.

University of Wisconsin-Madison. July 14, 2014.

Ohio State University. June 27, 2014.

University of Virginia. April 11, 2014.