

KELLY E. MCKINNON

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EDUCATION / TRAINING

Northwestern University Chicago, IL Feinberg School of Medicine, Department of Obstetrics and Gynecology Laboratory of <u>Teresa K Woodruff, Ph.D.</u> Co-advised by Spiro Getsios, Ph.D Doctoral Candidate	September 2013-present
Emory University Atlanta, GA Department of Medicine Laboratory of George R. Beck, Jr., Ph.D. Undergraduate Research Fellow	May 2012-July 2013
Georgia Gwinnett College Lawrenceville, GA School of Science & Technology B.S. in Biology, Biochemistry Concentration	May 2010-May 2013

HONORS & AWARDS

Science Outside the Lab – Science Policy Fellow Awarded to one NU trainee to attend policy workshop in Washington, D.C. Selected by the Graduate School at Northwestern	Summer 2017
Constance Campbell Memorial Travel Grant Center for Reproductive Science at Northwestern	2017
Conference Travel Grant The Graduate School at Northwestern	2017
National Institute of Health/National Cancer Institute training grant NRSA T32 CA009560 Carcinogenesis Training Program	2016-present
Mentor of the Year Driskill Graduate Program at NU	2016
National Science Foundation – Honorable Mention Graduate Research Fellowship Program	2015
Constance Campbell Memorial Research Award – Poster Presentation 34th Annual Mini-symposium on Reproductive Biology Awarded to trainees with the best presentations at symposium.	2015

Science and Society Class Distinction Award Awarded to two students a year based on submitted article aimed at lay audience	2014
Dean's List Member Georgia Gwinnett College	2011-2013
Summer Undergraduate Research Poster Award Emory University – 2012 Summer Undergraduate Research Symposium Awarded to undergraduate trainees with best presentations at symposium	2012
HHMI Summer Undergraduate Research Fellowship Emory University Rewarded on the basis of academic achievement and demonstrated effort in Biology	Summer 2012

CLUB & SOCIETY PARTICIPATION

Endocrine Society – Trainee Member	2016-present
National Association of Science Writers – Student Member	2015-present
Chicago Science Writers – Student Member	2015-present
Northwestern University Center for Reproductive Science – Trainee Member	2014-present
Northwestern University Women's Health Research Institute – Student Member	2015-present
Georgia Gwinnett College Pride Alliance	2010-2013

TEACHING & RELATED WORK EXPERIENCE

Guest Speaker – Glenbard High School Day spent with middle school classrooms to discuss women's health and women in science	2018
Guest Lecturer – “Communicating science to a doubtful world” Invited speaker for ProSeminar Lecture Series Northwestern University MS Health Communications Program Course Director: Kimberley Cornwell, MS	Winter 2017
Course Instructor – “Bioengineering the Ovary” 2016 International Oncofertility Consortium Conference – Trainee Education Lab Sessions Program Founder/Director: Teresa Woodruff, Ph.D., Northwestern University	Fall 2016
Teacher's Assistant – Cell Biology Feinberg School of Medicine, Northwestern University Course Directors: Steven Kosak, Ph.D and Brian Mitchell, Ph.D	Spring 2016
Course Instructor – “Decellularizing a bovine ovary” Women's Health Science Program for high school girls Program Founder/Director: Teresa Woodruff, Ph.D., Northwestern University	2015-present

EDUCATIONAL ACTIVITIES AND SKILLS / CAREER ADVANCEMENTS

Science Writing & Careers – Medill School of Journalism, NU Competitive course aimed at teaching scientists how to use principles of journalism in order to more effectively communicate science to a lay audience. Skillset includes: Narrative structure, social media, blogging, data visualization	Fall 2015
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Good Tissue Practice and Good Manufacturing Practice Standard Operating Procedure Training Sept 2014
 Under the direction of: Ann LeFever, PhD, Director of Mathews Center for Cellular Therapy
 Skillset includes: environmental monitoring, gowning, sterility testing, supply management, document control

Graphics Manager – Scholastic Advertising, Inc. 2007-2013
 Skillset includes: graphic design, website management, marketing, MS office, Adobe Creative Suite, team management

SERVICE, CIVIC ENGAGEMENT AND PUBLIC OUTREACH

Northwestern University Leadership Council Live Webinar – “Women in Science” Invited panelist 2018

Women’s Health Research Day – Developed, organized and managed pop-up science event at Illinois State Building to celebrate advances in women’s health 2018

Center for Reproductive Science Advisory Board – Trainee Representative 2017-present
 Duties include: Evaluate CRS mission, programming, and training endeavors; provide recommendations to improve and strengthen CRS

Reproductive Science and Medicine Summit Planning Committee 2017
 Duties included: Develop program for meeting, choose judges, select abstracts and awards

March for Science Chicago Expo – Woodruff Lab booth 2017
 Organized, developed materials for, and managed science booth at public expo event

Driskill Graduate Program Student Council – Class representative 2016-present
 Northwestern University – The Graduate School

Woodruff Lab, Oncofertility Consortium, and WHRI Outreach 2016-present
 Design infographics for use on website, banners, and other materials
 Manage social media outlets to engage the public
 Contribute terms to Repropedia
 Develop scientific content for Woodruff Lab website
 Press relations and media outreach for Woodruff Lab

Mentor - Women’s Health Science Program 2015-present

Volunteer – Winship Cancer Institute – Ambulatory Infusion Center 2012-2013
 Emory University

Peer Tutor – Organic Chemistry 2011-2012
 Georgia Gwinnett College

Peer Tutor – Anatomy & Physiology 2008-2009
 Georgia Perimeter College

MENTORED TRAINEES

Chloe Williams, Gender Studies/Chemistry Undergraduate Student, NU March 2016-July 2017
 Taught sterile technique, basic cell culture and molecular biology techniques; mentoring on transitioning from undergraduate student to laboratory technician, and eventually to MD or PhD program.

Rhitwika Sensharma, Biotechnology Masters Student, NU December 2015-July 2017
 Taught basic tissue culture and tissue engineering techniques, basic molecular biology techniques, and light/florescent microscopy; Mentored through MS thesis work, including journal clubs, poster presentations, and lab meetings. – Currently interviewing for MD/PhD programs

Jovanka Ravix, Mechanical Engineering Undergraduate Student, NU March 2016-September 2016
 Taught light microscopy and imaging, cell culture, basic molecular biology techniques, and how to use software such as ImageJ to analyze data. Mentored through individual summer research project in the Woodruff lab summer 2016. – Currently in competitive fellowship at Mayo Clinic

Sasha Howey, Biological Science Undergraduate Student, University of Victoria, BC Summer 2015
 Taught basic tissue culture and tissue engineering techniques, immunohistological analysis, and light/florescent microscopy. Mentored through summer undergraduate research project in the Woodruff lab.

PUBLICATIONS

Kelly E. McKinnon, Rhitwika Sensharma, Chloe Williams, Jovanka Ravix, Spiro Getsios, Teresa K. Woodruff. 3D-engineered human cervix model differentiates, responds to hormones, produces mucins, and reveals distinct follicular and luteal phase transcriptional profiles. (*In preparation*).

Kelly E. McKinnon^{**}, Emma Gargus^{**}, Hunter Rogers^{**}, Maxwell Edmonds^{**}, Teresa K. Woodruff. Engineering Reproduction (Review). *In review*.
^{**denotes equal first author contribution.}

Kelly E. McKinnon^{**}, Shuo Xiao^{**}, Jonathon R. Coppeta^{**}, Jie Zhu^{**}, Hunter Rogers^{**}, Susan A. Olalekan^{**}, Brett C. Isenberg, Danijela Dokic, Alexandra S. Rashedi, Daniel J. Haisenleder, Saurabh S. Malpani, Chanel Arnold-Murray, Kuanwei Chen, Mingyang Jiang, Monica M. Laronda, Thomas Hope, Mary Ellen Pavone, Michael J. Avram, Elizabeth C. Sefton, Spiro Getsios, Joanna Burdette, J. Julie Kim, Jeffrey T. Borenstein, Teresa K. Woodruff. (2017). 28-day Menstrual Cycle Hormone Control of Human Reproductive Tract Function in a Microfluidic Culture System. Accepted at *Nature Communications*. Publication date: 03/28/2017. ^{**denotes equal first author contribution.}

MM Laronda, KE McKinnon, AV LeFever, TK Woodruff. (2016). Good manufacturing practice requirements for the production of tissue vitrification and warming and recovery media for clinical research. *Journal of Assisted Reproduction and Genetics*. <https://www.ncbi.nlm.nih.gov/pubmed/27900615>

Pope, W. H., Bowman, C.A., Russell, D.A., Jacobs-Sera, D., Asai, D.J, Creswan, S.G., Jacobs, W.R., Hendrix, R.W., Lawrence, J.G., Hatfull, G.F. (2015). *eLife*. Whole genome comparison of a large collection of mycobacteriophages reveals a continuum of phage genetic diversity.
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4408529/>.

^{** This work included hundreds of undergraduates across the nation in the discovery, sequencing, annotation and report of over 600 phage genomes. My specific contributions were the genome annotations of phages Mufasa and Hope4Ever. Full author list is available as part of the supplementary info.}

Lin, Y., McKinnon, K. E., Ha, S.W., & Beck, G. R. (2014). Inorganic phosphate induces cancer cell mediated angiogenesis dependent on forkhead box protein C2 (FOXC2) regulated osteopontin expression. *Molecular Carcinogenesis*. <http://www.ncbi.nlm.nih.gov/pubmed/24700685>

WRITING FOR LAY AUDIENCE

KE McKinnon. Meet Evatar: The Mother of Microhumans. Woodruff lab website.
<https://www.woodrufflab.org/Evatar%20MPS>.

KE McKinnon (2014). Anti-vaccine movement a major risk to public health. *Helix Magazine*.
<http://helix.northwestern.edu/article/anti-vaccine-movement-major-risk-public-health>.

ABSTRACT PRESENTATIONS

Kelly E. McKinnon, Rhitwika Sensharma, Chloe Williams, Hunter Rogers, Shuo Xiao, Spiro Getsios, Teresa Woodruff. Development of novel 3D microphysiologic and microfluidic human ectocervical model systems for studying hormonal effects on differentiation, barrier properties, and infection. Gordon Research Conference (and Seminar) on Epithelial Differentiation and Keratinization. 2017. Lucca, Italy.

Monica Laronda, Kelly E. McKinnon, Allison Ting, Mary Zelinski, Teresa Woodruff. Good manufacturing practice requirements for the production of tissue vitrification and warming and recovery media for clinical research. Annual International Oncofertility Consortium Conference. November 14, 2016. Chicago, IL.

Kelly E. McKinnon, Rhitwika Sensharma, Teresa Woodruff, Spiro Getsios. Ovarian hormone regulation of proliferation, differentiation, and barrier properties of the human ectocervix. Annual Lurie Cancer Center Symposium & Scientific Poster Session. Northwestern University. June 23, 2016. Chicago, IL.

FemKUBE Technology Team: Jonathan Coppeta, Brett Isenberg, Jeffrey T. Borenstein; **FemKUBE Biology Teams:** *EstroKUBE:* Shuo Xiao, Alexandra Rashedi; *TubeKUBE:* Joanna Burdette, Jie Zhu; *UteroKUBE/EndocerixKUBE:* J.Julie Kim*, Susan Olalekan, Sevim Yildiz Arslan, Thomas Hope; *EctocervixKUBE:* Spiro Getsios, Kelly McKinnon; *iPSC Development:* Monica M. Laronda, Hanna Valli; *Gynecology Tissue Core:* Mary Ellen Pavone, Saurabh Malpani, Chanel Arnold-Murray; *Bioengineering:* Peter Chen, Mingyang Jiang, Hunter Rogers; *Pharmacokinetics:* Michael Avram; *Project Management:* Elizabeth C. Sefton; PI: Teresa K. Woodruff. Female Reproductive Tract Integration in a 3D Microphysiologic System. Organ-on-a-chip World Congress, July 7, 2016, Boston, MA.

Kelly E. McKinnon, Paul Hoover, Teresa K. Woodruff, Spiro Getsios. Engineering a three-dimensional human ectocervical tissue model to study hormonal regulation and immune response of female reproductive tract. Lewis Landsberg Research Day. Feinberg School of Medicine, Northwestern University. April 2, 2015. Chicago, IL. *Poster presentation.*

Kelly E. McKinnon, Paul Hoover, Teresa K. Woodruff, Spiro Getsios. Engineering a three-dimensional human ectocervical tissue model to study hormonal regulation and immune response of female reproductive tract. Center for Reproductive Science Minisymposium, Northwestern University, January 26, 2015, Chicago, IL. *Poster presentation. *Received the Constance Campbell Memorial Research Award.*

Kelly E. McKinnon. The Importance of Undergraduate Research. GGC STEM Faculty/Staff Symposium. Gwinnett Arena, 2013. ***Invited student speaker and panelist.***

Kelly E. McKinnon, George R. Beck. Inorganic phosphate regulated proliferation and transformation. Emory University Undergraduate Research Conference. 2013. *Poster presentation.*

Kelly E. McKinnon. Inorganic phosphate regulated proliferation and transformation. Georgia Gwinnett College - Science, Technology and Research Show. 2013. *Oral presentation.*

Kelly E. McKinnon. Applying to Grad School 101. Georgia Gwinnett College – Science, Technology and Research Show. 2013. ***Invited student speaker and panelist.***

Kelly E. McKinnon, Abraham M. Bailey, Penelope S. Carter, Natalie C. Deans, Elizabeth V. Dyle, Alexandra Florea, Tatiana A Giraldo, Michael A Hayes, Jasmine Ikejiani, William C. Seawell, Hita Shah, Terrence E. Toussaint, Damion Coleman, Latanya P. Hammonds-Odie, Alessandra L. Barrera. Annotated genome of K2 mycobacteriophage Mufasa. Georgia Gwinnett College - Science, Technology and Research Show. (2013). *Poster presentation.*

Kelly E. McKinnon, Laura M. Garneys, George R. Beck. Inorganic phosphate regulated proliferation and transformation. Summer Undergraduate Research Experience (SURE) Poster Symposium. Emory University. 2012. *Poster presentation.*

****Received summer undergraduate research award***

MEDIA FEATURING KELLY MCKINNON

“Professional Networking for Today’s Scientist.”

<http://www.labmanager.com/leadership-and-staffing/2017/11/professional-networking-for-today-s-scientist#.Wle5CpM-eA8> (2017)

“Q&A: How the ‘Mother of Microhumans’ Could Improve Personalized Medicine.”

<https://www.biosciencetechnology.com/article/2017/07/q-how-mother-microhumans-could-improve-personalized-medicine> (2017)

“Science Outside the Lab 2017.”

<http://www.tgs.northwestern.edu/about/news-events/stories/2017/science-outside-the-lab-2017.html> (2017)

“Kelly McKinnon, PhD Candidate selected to attend the Science Outside the Lab Policy Workshop, Washington, DC.”

<http://www.crs.northwestern.edu/news/2017/kelly-mckinnon,-phd-candidate,-selected-to-attend-the-science-outside-the-lab-policy-workshop,-washington,-dc.html> (2017)

“Why Scientists are Building Human Organs on Microchips.”

https://tonic.vice.com/en_us/article/bm4wkd/why-scientists-are-building-human-organs-on-microchips (2017)

“Scientists have recreated a period – and it’s a big deal for women’s health.”

<http://mashable.com/2017/03/31/scientists-create-menstrual-cycle-on-a-chip/#hXuuOpMV6Zqm> (2017)

ADDITIONAL RESEARCH REWARDS – MEDIA AND OTHER

“NIEHS names EVATAR top research paper of 2017.” <https://factor.niehs.nih.gov/2018/1/feature-2-papers/index.htm>” (2018)

“Research of the Year 2017.” <https://cen.acs.org/articles/95/i49/chemistry-research-of-the-year-2017.html>