Ana Maria Porras, Ph.D.

290 Kimball Hall, Cornell University, Ithaca, NY 14850 | www.anamariaporras.com | amp428@cornell.edu

Education

Ph.D. in Biomedical Engineering, **University of Wisconsin-Madison** 2016
Thesis Title: "*Development of Improved Models to Understand the Sequence of Events in Early Calcific Aortic Valve Disease"*
Delta Certificate in Research, Teaching and Learning 2015

M.S. in Biomedical Engineering, **University of Wisconsin-Madison** 2013

B.S. in Biomedical Engineering with High Honors, **University of Texas at Austin** 2011
Minor in German

Research Experience

Cornell Presidential Postdoctoral Fellow 2019 - present
Postdoctoral Associate 2017 - 2019
Cornell University, Meinig School of Biomedical Engineering
Advisor: Prof. Ilana Brito

Postdoctoral Associate, University of Wisconsin-Madison 2017
Advisor: Prof. Kristyn Masters

Graduate Research Fellow, University of Wisconsin-Madison 2011 – 2016
Advisor: Prof. Kristyn Masters

Teaching-as-Research Intern, Physics Learning Center, UW-Madison 2013 – 2014
Advisors: Dr. Amihan Huesmann & Dr. Susan Nossal

Undergraduate Research Assistant, University of Texas at Austin 2008 – 2011
Advisor: Prof. Christine Schmidt

Summer Research Assistant, Pittsburgh Tissue Engineering Initiative 2010
Advisor: Dr. Stephen Badylak

Fellowships, Awards & Grants
Total Funds Raised: $286,100

Cornell Presidential Postdoctoral Fellowship ($219,000) 2019 - 2022

American Association for the Advancement of Science If/Then Ambassador ($5,000) 2019 - 2021

Institute of Biotechnology Seed Grant, Cornell (prepared proposal, PI: Ilana Brito - $10,000) 2019

Building Future Faculty Scholar, North Carolina State University 2019

Postdoc Achievement Award for Excellence in Community Engagement, Cornell University 2018

Two Photon Art Science Communication Small Grant ($100) 2018

American Heart Association Predoctoral Fellowship – Midwest Affiliate ($52,000) 2015-2016

Patricia Heard Outstanding Student Educator Award, University of Texas at Austin 2011

Unrestricted Endowed Presidential Scholarship, University of Texas at Austin 2010

Braden Communication Scholarship, University of Texas at Austin 2008

Bachilleres por Colombia, ECOPETROL 2006-2011

Kenneth Rainin Foundation Synergy Award (prepared proposal - $100,000) submitted

Peer Reviewed Publications

1. **Porras AM**, Brito IL. The Internationalization of Gut Microbiome Research. *Current Opinion in Microbiology,* Accepted, 2019
2. **Porras AM,** Westlund JA, Evans AD, Masters KS. Creation of Disease-Inspired Biomaterial Environments to Mimic Pathological Events in Early Calcific Aortic Valve Disease. *Proceedings of the National Academy of Sciences of the United States of America,* 115(3):E363-E371, 2018.
3. **Porras AM*,** Engeland N*, Marchbanks E, McCormack A, Bouten C, Yacoub MH, Latif N, Masters KS. Robust Generation of Quiescent Porcine Valvular Interstitial Cell Cultures. *JAHA: Journal of the American Heart Association,* 6(3):e005401, 2017. *Denotes equal contribution by authors
4. **Porras AM**, McCoy CM, Masters KS. Calcific Aortic Valve Disease: A Battle of the Sexes. *Circulation Research*, 120(4):604-606, 2017. Invited editorial.
5. **Porras AM*,** Hutson HN*, Berger AJ, Masters KS. Engineering Approaches to Study Fibrosis in 3-D *in Vitro* Systems. *Current Opinions in Biotechnology,* 40:24-30, 2016. *Denotes equal contribution by authors.
6. **Porras AM**, Shanmuganayagam D, Meudt JJ, Kreuger CG, Rahko PS, Reed JD, Masters KS. Development of Aortic Valve Disease in Familial Hypercholesterolemic Swine: Implications for Elucidating Disease Etiology. *JAHA: Journal of the American Heart Association,* 4(10):e002254, 2015.
7. **Porras AM**, Masters KS. Wave Mice: a New Tool in the Quest to Characterize Aortic Valvular Disease Etiologies. *Journal of Thoracic Disease,* 7(9):E332-334, 2015. Invited editorial.
8. **Porras AM**, Shanmuganayagam D, Meudt JJ, Krueger CG, Reed JD, Masters KS. Gene Expression Profiling of Valvular Interstitial Cells in Rapacz Familial Hypercholesterolemic Swine. *Genomics Data*, 1(2):261-263, 2014.
9. Rodriguez KJ, Piechura LM, **Porras AM**, Masters KS. Manipulation of Valve Composition to Elucidate the Role of Collagen in Aortic Valve Calcification. *BMC Cardiovascular Disorders*, 14(29), 2014.

Submitted

10. Márquez MC, **Porras AM**. How to Effectively Make Science Communication Inclusive in a Multicultural Society.

In Preparation

11. **Porras AM**, Shi Q, Montenegro G, Solomons N, Brito IL. Geographic Differences in Gut Microbiome Composition Affect Susceptibility to Enteric Infection.

Oral Presentations

1. **Porras AM**, Shi Q, Callahan RL, Montenegro G, Solomons N, Brito IL. Geographic Differences in Gut Microbiome Composition Affect Susceptibility to Enteric Infection. *BMES 2019 Annual Meeting,* Philadelphia, PA, October 19, 2019.
2. **Porras AM**. Lessons Learned while Communicating Science in Spanish through Crocheted Microbes and Social Media. *InclusiveSciComm Symposium.* Kingston, RI, September 27, 2019.
3. **Porras AM**. Germ Free Mice: an Innovating Platform for the Study of the Relationship Between Enteric Infections and the Gut Microbiome. *Universidad del Valle de Guatemala*, Guatemala, Guatemala, July 15, 2019 and *Universidad Mesoamericana, Quetzaltenango*, Guatemala, July 17, 2019. (*In Spanish)*
4. **Porras AM**. Engineered *in vitro* Models to Explore the Role of the Extracellular Matrix in Disease. *Seminar at the Biomedical Engineering Department in North Carolina State University*, Raleigh, NC, April 4, 2019.
5. **Porras AM**, Rao H, Brandt CR, Masters KS. Manipulation of Extracellular Matrix Composition to Study Disease Etiology in *ex vivo* Organ Cultures", *Society for Biomaterials 2017 Annual Meeting and Exposition: Where Materials Become Medicine*, Minneapolis, MN, April 5, 2017.
6. **Porras AM**, Engeland N, Westlund JW, Bouten C, Yacoub MH, Latif N, Masters KS. Generation of Quiescent Porcine VIC Cultures for Improved Study of Disease Stimuli, *7th Biennial Heart Valve Biology and Tissue Engineering Meeting**, Hilton Head, NC, October 13, 2016. * Meeting was cancelled due to hurricane.

7. **Porras AM**, Rao H, Brandt CR, Masters KS. Temporal Control of ECM Composition in *ex vivo* Heart Valve Organ Cultures, *BMES 2016 Annual Meeting*, Minneapolis, MN, October 7, 2016.
8. **Porras AM**, Rao H, Brandt CR, Masters KS. Creation of Glycosaminoglycan-Enriched Environments to Study Aortic Valve Pathobiology, *Gordon Research Seminar – Signal Transduction by Engineered Extracellular Matrices*, Biddeford, ME, June 25, 2016.
9. **Porras AM**, Shanmuganayagam D, Meudt JJ, Kreuger CG, Reed JD, Masters KS**.** Insights into CAVD Pathobiology and Relationship to Atherosclerosis Provided by Familial Hypercholesterolemic Swine. 6th *Biennial Heart Valve Biology & Tissue Engineering Meeting, Society for Heart Valve* Disease, London, England, September 10, 2014.

Poster Presentations

1. **Porras AM**. Using Crocheted Art and Social Media to Communicate Science and Promote Diversity. *BMES 2019 Annual Meeting*, Philadelphia, PA, October 17, 2019.
2. **Porras AM**, Shi Q, Montenegro G, Solomons N, Brito IL. Geographic Differences in Gut Microbiome Composition Affect Susceptibility to Enteric Infection. *Our Microbes, Our Global Health Symposium*, Ithaca, NY, August 10, 2018.
3. **Porras AM**, Westlund JA, Evans AD, Masters KS. Generation of Glycosaminoglycan-Enriched Scaffolds to Decipher Aortic Valve Disease Pathobiology. *Society for Biomaterials 2017 Annual Meeting and Exposition: Where Materials Become Medicine*, Minneapolis, MN, April 5-7, 2017.
4. **Porras AM**, Rao H, Brandt CR, Masters KS. Creation of Glycosaminoglycan-Enriched Environments to Study Aortic Valve Pathobiology, *Gordon Research Conference – Signal Transduction by Engineered Extracellular Matrices*, Biddeford, ME, June 26-29, 2016.
5. **Porras AM**, Masters KS. Deciphering the Role of Oxidized Lipoproteins in Regulating CAVD Pathology. *2nd Scientific Meeting of The Heart Valve Society*, New York City, NY, March 17, 2016.
6. **Porras AM**, Weis TA, Masters KS. Design of an *in vitro* Platform to Study the Role of Proteoglycan Enrichment in LDL Retention. *The Heart Valve Society Inaugural Scientific Meeting*, Monaco, May 7, 2015.
7. **Porras AM**, Huesmann AS, Nossal SM. Training the Trainers at the Physics Learning Center. *Center for the Integration of Research, Teaching and Learning Network Forum*, College Station, TX, April 13, 2015.
8. **Porras AM**, Shanmuganayagam D, Meudt JJ, Kreuger CG, Rahko PS, Reed JD, Masters KS. Investigation of Rapacz Familial Hypercholesterolemic Swine as a Potential Model of Calcific Aortic Valve Disease. *National Heart, Lung, and Blood Institute Symposium on Cardiovascular Regenerative Medicine*, Bethesda, MD, September 25, 2013.

Teaching Experience

Co-Instructor: Science Reporters, Clubes de Ciencia-Colombia 2019
Taught a 1-week summer camp for children ages 14-17 on science communication with an emphasis on the use of storytelling and art. Co-instructor: Prof. Germán Zafra.

Co-Instructor: Summer Undergraduate Microbiome Reading Group, Cornell University 2018
Developed a 6-week course to introduce students to topics at the intersection of human gut microbiome research and global health. Co-instructor: Prof. Ilana Brito.

Co-Facilitator: Research Mentor Training, Delta Program, University of Wisconsin-Madison 2016

Workshop Leader: New Educators' Orientation, College of Engineering, UW-Madison 2014-2016

Teaching Assistant: Dept. of Biomedical Engineering, University of Wisconsin-Madison 2013-2015
BME 545 – Engineering the Extracellular Matrix (twice) & BME 510 – Introduction to Tissue Engineering (once). Responsibilities included homework, in-class activities, and exam design; grading; and occasional lectures. Instructor: Prof. Kristyn Masters.

Co-Facilitator: Delta Program Brown Bag Buzz, UW-Madison 2013-2014
Led discussions that featured topics within the scholarship of teaching and learning.

Leadership Experience

Co-Founder and Community Co-Manager, LatinX in BME Slack Community — 2019 - present

Co-Organizer, Our Microbes, Our Global Health Workshop and Symposium — 2018

Chair, Gordon Research Seminar: Signal Transduction by Engineered Extracellular Matrices — 2018

President, Colombian Badgers, UW-Madison — 2015 – 2017

President, Biomedical Engineering Graduate Student Association at UW-Madison — 2014 – 2015

President, Tau Beta Pi Texas Alpha Chapter — 2011

Mentoring

Undergraduate Students Mentored in the Laboratory

Abi Anima, Cornell University	2018 – present
Gabriel Welch, Cornell University	2018 – present
Jennifer Westlund, University of Wisconsin - Madison	2015 –2017
Austin Evans, University of Wisconsin – Madison	2015 – 2017
Evelyn Marchbanks, Summer Student, University of Wisconsin-Madison	2016
LaTonya Simon, University of Wisconsin-Madison REU Program	2014
Taylor Weis, University of Wisconsin – Madison	2012-2014

Ekpa'palek, Professional Mentorship Program for Students in Latin America — 2019 - present

Biomedical Engineering Women's Group Mentorship Program — 2019-present

Postdocs and Graduate Students Mentoring Undergraduates, Cornell University — 2018-2019

Cornell-University of Puerto Rico Interuniversity Relief Program — 2018

Professional Service

Reviewer

Frontiers in Communication	2019
Annual Biomedical Research Conference for Minority Students Abstracts	2019
Make Space Awards for Inclusion in STEM, Two Photon Art	2019
Fellowship Applications, Graduate Women in Science	2019
SACNAS Conference Travel Scholarships, Research Presentations & Sessions	2017-2019

Advisor, Graduate and Professional's Women Network, Cornell University — 2019 - present

Director of Communications, Clubes de Ciencia-Colombia — 2019 - present

Graduate Student Representative, UW Delta Program's Steering Committee — 2014 – 2017

Public Engagement with Science

Ambassador, American Association for the Advancement of Science If/Then Program — 2019-2021

Two Photon Fellow, Massive Science Consortium for Science Writing — 2019-present

Science Communicator, @anamaporras and @anaerobias on Instagram, Facebook & Twitter — 2018 – present
Every week I showcase a new crocheted microbe and highlight its importance for our health and that of the planet using parallel accounts I run in both English and Spanish. I also often profile Colombian scientists who study those microbes.

Art Exhibitor, "A square inch of skin", SPACE Exhibition, Tompkins County Public Library — 2019

Volunteer

Letters to a Pre-Scientist	2018-present
Skype a Scientist	2018-2019
Cornell Microbiome Booth, USA Science & Engineering Festival	2018

Workshop Instructor

"Explaining your Science in just 3 Minutes", SACNAS Diversity in STEM Conference 2019

"Learn to Crochet your own Bacteria", Graduate Women in Science 2018 & 2019

Invited Talks Open to the General Public

Science's Next Top Models: Engineering Living Tissues in the Laboratory to Study Disease, *Science on Tap Talk, Graduate Women in Science*, Ithaca, NY, July 31, 2019.

El Microbioma Intestinal Humano: su Exploración y Promesa a Largo Plazo (The Human Gut Microbiome: its Exploration and Long-Term Promise), *Guatemalan National Academy of Medical, Physical, and Natural Sciences,* Quetzaltenango, Guatemala, July 16, 2019.

Del Humano y sus Microbios (Of Humans and their Microbes), Webinar, *Association of Amateur Astronomers of Cali*, Cali, Colombia, October 23, 2018.

Episode 3: Animal Testing, What is it like to Work with Animals in the Lab? – With Ana Maria Porras, *Podcast Interview for Inside the Petri Dish*, http://itpd.mprw.co.uk/2018/02/16/ep-3-animal-testing-ana-porras/, February 2018.

Professional Memberships

American Association for the Advancement of Science	2019 - present
Massive Science Consortium	2019 - present
Society for Advancement of Chicanos/Hispanics & Native Americans in Science (SACNAS)	2017 - present
Biomedical Engineering Society	2016 - present
Tau Beta Pi Engineering Honors Society	2009 - present
Society for Biomaterials	2016 - 2017
American Heart Association	2011-2016

References

Dr. Kristyn Masters
Vilas Distinguished Achievement Professor, H.I. Romnes Faculty Fellow & Vice Chair
Department of Biomedical Engineering
University of Wisconsin – Madison
(608) 265-4052
kmasters@wisc.edu

Dr. Ilana Brito
Assistant Professor, Mong Family Sesquicentennial Faculty Fellow
Meinig School of Biomedical Engineering
Cornell University
(607) 254-2938
ibrito@cornell.edu

Dr. Paul Campagnola
Professor
Department of Biomedical Engineering
University of Wisconsin-Madison
(608) 890-3575
pcampagnola@wisc.edu