

PAULINE P. WARD, PhD

CONTACT DETAILS

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Central College 1300 Holman, Houston, TX 77004
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EDUCATION

1992 to 1996 **Postdoctoral Research Associate**, Baylor College of
Medicine, Houston, TX Department of Molecular & Cellular
Biology
1988 to 1992 **PhD in Biochemistry**, National University of Ireland, Galway, Ireland
Co-Mentored by Dr. Denis Headon (NUI, Galway) and Dr. Orla Conneely
(Baylor College of Medicine).
1984-1987 **Bachelor of Science (Honors) in Biochemistry**, National University of Ireland,
Galway, Ireland

TEACHING EXPERIENCE

2012-present **Houston Community College Central College, Houston, TX**
Biology and Physical Science Department
Full time Faculty
Courses Taught: Human Anatomy & Physiology I Lecture and Lab, General
Biology I for Majors Lecture and Lab (Regular and Honors College sections),
Introductory Biology I Lecture, Nutrition and Diet Therapy Lecture. Instructional
modality: In person and Online.
2010-2011 **Houston Community College System Houston, TX** Biology and Physical
Science Department *Adjunct Faculty*
Courses: Human Anatomy and Physiology I, General Biology I and General Biology II
2010-2011 **University of Houston, Houston, TX**
Center for Life Sciences Technology, College of Technology
Adjunct Faculty
Courses: Introduction to Biotechnology

PROFESSIONAL EXPERIENCE

2005 to 2009 **Education Consultant and Intern Program Coordinator**, FÁS, Science Challenge
Program, Houston, TX
2002 to 2007 **Assistant Professor**, Department of Molecular & Cellular Biology,
Baylor College of Medicine, Houston, TX
1996 to 2001 **Instructor**, Department of Molecular & Cellular Biology, Baylor College
of Medicine, Houston, TX
1993 to 2001 **Scientific Affairs Consultant**, Agennix Inc., Houston, TX

HONORS & AWARDS

2007 to present **Adjunct Assistant Professor**, Molecular & Cellular Biology,
Baylor College of Medicine, Houston Texas
2022 "Honorable Mention" at the **Faculty Teaching
Excellence Awards**, Bedichek Orman Auction, HCC
2021 **Immersive Learning & Best Practices Award** as part of a
cohort of Biology faculty recognized as a pioneer in
implementing XR/VR technologies within our
discipline. **Faculty Awards & Student Engagement**

2020	Innovation Symposium Xemplary Service Award in appreciation for Co- presenting with Dr. Madhavi Nayar "Exam Review: The Student's WAY!" during the HCC Faculty Awards & Student Engagement Innovation Symposium
2017	SGA Eagle Service Award , Central College, HCC
2016	National Society of Leadership and Success Excellence in Teaching Award , Central College, HCC
2015	Anthony Chee Teaching Excellence Award , Central College, HCC
2014	Pearson's One Professor Project Honoree , nominated by HCC Student
2012-2014	Faculty Mentor Awardee. UST/HCC STEM Scholars & Articulation Program, Undergraduate
2005	Organizing committee: The VII th International Conference on Lactoferrin Structure, Function and Applications, October 16-19, 2005, Honolulu, Hawaii
2000-2005	Peer Referee for Scientific Journals including Molecular Endocrinology, European Journal of Biochemistry, Biochemistry and Cell Biology, Biotechnology Progress and Biochimica et Biophysica Acta
2002	Pilot/Feasibility Awardee. Texas Gulf Coast Digestive Diseases Center
2002	Extern Examiner for Ph.D. candidate for the National University of Ireland
2000	Awarded Patent , "Lactoferrin variants and uses thereof" Inventors: Conneely, Orla M; Ward, Pauline P

PROFESSIONAL DEVELOPMENT & ADVANCED TRAINING

2023	Online Teaching Essentials Certificate: Increasing Interaction and Engagement. Online Learning Consortium (OLC) workshop
2023	Flipped learning course design Certificate. Online Learning Consortium (OLC) workshop
2023	Rubric Design for Effective Assessment Certificate Online Learning Consortium (OLC) workshop
2021	Open Educational Resources Core Elements Academy Certificate (15 professional development hours)
2009-2020	Annual International Space Medicine Summit- Invited Guest and Participant in the Education Group , Baker Institute, Rice University
2017	Certificate of Teaching Excellence for TLE Certified Course program, 21 st Century Xemplary Faculty designation.
2012-2016	Camp Inspire Annual Workshop Participant , HCC
2012-2016	QEP INSPIRE. Member of the Biology Module Development and Implementation Team
2016	On Course Workshop: Strategies for Success in College and in Life, HCC
2014	Distance Education Teaching Certificate , HCC
2010	Foundations of Leadership Certificate , Rice University
2007-2010	Director , Texas Chapter, Biolink USA-Ireland
2007	STEM K-12 Educational Conference "Improving Science and Math Education: Texas confronts the gathering storm"

COLLEGE AND COMMUNITY SERVICE

2019-2023	Co-Chair, Anatomy & Physiology Subcommittee , HCC
2023-Present	Member, Nutrition Subcommittee , HCC
2016-present	Mentor, Supplemental Instruction Program , HCC

2016-present	Member, Introductory Biology Subcommittee, HCC
2015-present	Honors College, Biology Professor, HCC
2012-present	Member, Anatomy & Physiology Subcommittee, HCC
2012-present	Member, General Biology Subcommittee, HCC
2008-2021	Board Member, Irish Society, Houston, TX
2019	Mars Exploration in the 21 Century: STEM Approach” Symposium. Houston Community College’s Division of Natural Sciences in collaboration with the University of Houston’s Sasakawa International Center for Space Architecture (SICSA), WHI, HCC. Organizers: Dr. Mullins and Dean Drain. Actively involved in the planning, preparation and participation of this initiative with 13 students involved in four poster presentations.
2017-2018	Module Developer. Co-developed two learner-centered modules for interdisciplinary use at as part of a Collaborative Project between HCC, NASA, and the University of Houston on Creating Space-Related Learning Experiences in STEM Education and Building Connections between HCC STEM Curriculum and NASA Space Exploration Programs
2017	Presenter. Faculty Teaching Rounds, IIED's 5th Annual Faculty Awards & Student Engagement Innovation Symposium, HCC.
2016-2017	Mentor, Joint Math/Science Mentor Program, HCC
2016	Member, Syllabus Subcommittee, Biology Department, HCC
2015-2017	Chair, General Biology Subcommittee, HCC
2013-2016	Co-Faculty Advisor, Science Club, HCC Central
2014	Chair, Hiring Committee, Biology and Physical Sciences Division Chair
2014	Judge, Gulf Coast Undergraduate Research Symposium, Rice University
2014	Hiring Committee, Biology Faculty, HCC Southeast
2014	Joint Presenter: Faculty Teaching Rounds, CTLE Faculty Student Engagement Instructional Design Symposium, HCC “The dating game” J. ONeil, L. Sawant, N.Dikeocha, P.Ward, A. Krishnaswamy, T. Loesch
2013-2014	Organizing Committee Member, “STEM On-And-Off The Planet” Education and Outreach Summit for Debakey High school students and HCC students, National Space Biomedical Research Institute, Houston, TX
2013	Science Fair Judge, 3rd Annual Science Fair, Harmony School of Fine Arts and Technology, Houston, TX
2012-2013	Co-Chair, International Garden, Roberts Elementary, Houston, TX
2007-2010	Director, Texas Chapter, BiolinkUSA-Ireland

UNDERGRADUATE RESEARCH

2016	Poster Presentation: 6th Annual STEM Symposium, HCC Central. “Immunohistochemical Analysis of Cell Proliferation in a Mouse Mammary Gland Model of Cancer”. Saul Ayala ¹ , Abigail Gonzalez ¹ , Yanet Galaeno ¹ , Sem Quintanilla ¹ , Yonairy Blanco ¹ , Josue Rodriguez ¹ , Mark Yanez ¹ , Maria Szwarc ² , John Lydon ² , Pauline Ward ³ ¹ <i>Honors College, Houston Community College Central College, Houston, TX</i> ² <i>Department of Molecular & Cellular Biology, Baylor College of Medicine, Houston, TX</i> ³ <i>Department of Biology and Physical Science, Houston Community College, Houston, TX</i>
2015	Poster Presentation: <u>First Place</u>: STEM Symposium, HCC SW Genotyping Progesterone Receptor (PR) Knockout/Knockin Mice Magana, Gabriela ¹ ; Soares da Silva, Alexandre ¹ ; Lydon, John PhD.2; and Ward, Pauline PhD ³ ¹ Honors College, Houston Community College Central College, Houston, TX ² Department of Molecular & Cellular Biology, Baylor College of Medicine,

Houston, TX ³ Department of Biology and Physical Science.

- 2015 **Poster Presentation: STEM symposium, HCC SW.** "Extraction of Mouse Tail Genomic DNA to Identify MMTV-RANKL Transgenic Mice." Hysi A¹, Delgado C¹, Lydon, JP² and Ward PP³ ¹ Honors College, Houston Community College Central College, Houston, TX ² Department of Molecular & Cellular Biology, Baylor College of Medicine, Houston, TX ³ Department of Biology and Physical Science, HCC
- 2014 **Poster Presentation: First Place. Second Annual Houston Global Health Collaborative Connect 2014 Conference, Baylor College of Medicine, Houston TX.** March 22-23 2014. "The Initiation of an Undergraduate Research Project involving a Metagenomic Study of Viral Populations Carried by Mosquitoes in the Houston Area" Calles I¹, Anokwuru C², Chilcott T², Hysi E², Menendez S¹, Bagnall RA¹, Rosell RC¹, McWhinney D², Ward PP² and Larios-Sanz M¹. ¹ Department of Biology, University of St. Thomas, Houston, TX. ² Department of Biology and Physical Science, Houston Community College, Houston, TX.:
- 2014 **Poster Presentation: Joint First Place: STEM Symposium, HCC SW** "The Initiation of an Undergraduate Research Project involving a Metagenomic Study of Viral Populations Carried by Mosquitoes in the Houston Area" Calles I¹, Anokwuru C², Chilcott T², Hysi E², Menendez S¹, Bagnall RA¹, Rosell RC¹, McWhinney D², Ward PP² and Larios-Sanz M¹. ¹ Department of Biology, University of St. Thomas, Houston, TX. ² Department of Biology and Physical Science, Houston Community College, Houston, TX.

PUBLICATIONS

2021: Cellular Respiration/Photosynthesis-Think/Pair/Share Activity. Published in the **Texas Higher Education Coordinating Board OERTX Repository.**

2020-2021: **General Biology I Laboratory Manual: A Hands-On Experience.** HCC Central, 5th Edition, Hayden-McNeil Publishers **Co-Editor**

2020-2021: **Human Anatomy & Physiology I Laboratory Manual,** HCC Central; 8th Edition, Hayden-McNeil Publishers **Co-Editor**

2015-2021: **General Biology I Laboratory Manual: A Hands-On Experience.** HCC Central, Hayden-McNeil Publishers **Co-Author**

2015-2021: **Human Anatomy & Physiology I Laboratory Manual,** HCC Central; 8th Edition, Hayden-McNeil Publishers **Co-Author**

2020: "Use of virtual reality for active learning, student engagement and collaboration in the health sciences"-Renu Jain, Madhavi Nayar & **Pauline Ward**, Educator, *Journal of Human Anatomy and Physiology Society*, August 2020, Special Edition

2018: Mars and Space Exploration Program: Empowering Undergraduate Stem Education through Hands-On Collaborative Projects Olga Bannova, Irina Mullins, Pedro Mateo Alvarez, Spencer McClain Stanford, Kazuhiko Momose, **Pauline Ward**, Madhavi Nayar, Karolos Grigoriadis 69th *International Astronautical Congress 69 (IAC)*, Bremen, Germany.

Ward, PP, Mendoza-Meneses, M, Park, PW and Conneely, OM (2008) Stimulus-dependent impairment of the neutrophil oxidative burst response in lactoferrin-deficient mice. *American Journal of Pathology*. 172:1019-29

Ward, PP, Paz, G and Conneely, OM (2005). Multifunctional roles of lactoferrin: a critical overview. *Cellular and Molecular Life Sciences*. 62:2540-2548.

Ward PP, Conneely OM (2004). Lactoferrin: Role in iron homeostasis and host defense against microbial infection. *BioMetals*. 17: 203-208.

Ward PP, Mendoza-Meneses M, Cunningham GA, Conneely OM (2003). Iron status in mice carrying a targeted disruption of lactoferrin. *Molecular & Cellular Biology*. 23, 178-185.

Ward PP, Uribe-Luna S, and Conneely OM (2002) Lactoferrin and Host Defense. *Biochemistry and Cellular Biology*. 80: 95-102. Cumberbatch M, Dearman RJ, Uribe-Luna S, Headon DR.

Ward PP, Conneely OM, Kimber I (2000). Regulation of langerhans cell migration by lactoferrin. *Immunology*. 100:21-28.

Kimber I, Cumberbatch M, Dearman RJ, Conneely OM, **Ward PP**, Headon DR, Tucker SC and Griffiths CEM. (2000) Lactoferrin and regulation of cutaneous immunity and inflammation. Shimazaki, K-C., Tsuda, H., Tomita, M., Kuwata, T., Perraudin, J.P., editors. Elsevier Science B.V. Amsterdam, The Netherlands. Lactoferrin: Structure, Function and Applications. p.87-94

Sherman MP, Zhou X, Hwang FY, **Ward PP**, Conneely OM and Headon DR. (2000) Lactoferrin, endotoxin, and nitric oxide metabolism in pulmonary alveolar macrophages. Shimazaki, K-C, Tsuda, H., Tomita, M., Kuwata, T., Perraudin JP., editors. Elsevier Science B.V. Amsterdam, The Netherlands. Lactoferrin: Structure, Function and Applications. p 87-93.

Ward PP, Mendoza-Meneses M, Mulac-Jericevic B, Cunningham GA, Saucedo-Cardenas O, Teng CT, Conneely OM (1999). Restricted spatiotemporal expression and distribution of lactoferrin during murine embryonic development. *Endocrinology*. 140:1852-1860

Kimber I, Cumberbatch M, Dearman RJ, **Ward PP**, Headon DR, and Conneely OM. (1998). Regulation by lactoferrin of epidermal langerhans cell migration. Spik, G., Legrand, D., Mazurier, J., Pierce, A. and Perraudin, J-P., editors. *Adv. Exp. Med Biol*. 443:251-255

Ward PP, Mendoza MM, Saucedo-Cardenas O, Cunningham G, Mulac-Jericevic B and Conneely OM. (1998). Restricted spatiotemporal expression of lactoferrin during murine embryogenesis. Spik, G., Legrand, D., Mazurier, J., Pierce, A. and Perraudin, J-P., editors. *Adv. Exp. Med Biol*. 443: 91- 100.

Ward PP, Chu H, Zhou X, Conneely OM (1997). Expression and characterization of recombinant murine lactoferrin. *Gene* 204:171-176.

Ward PP, Cunningham GA, and Conneely OM. (1997). Commercial production of lactoferrin, a multifunctional iron-binding glycoprotein. Tombs, M.P., editor. *Biotechnol.Genet.Eng.Rev*. 14: 303-319

Ward PP, Zhou X, Conneely OM (1996). Cooperative interactions between the amino- and carboxy-terminal lobes contribute to the unique iron-binding stability of lactoferrin. *J.Biol.Chem*. 271:12790- 12794.

Miehlke S, Reddy R, Osato MS, **Ward PP**, Conneely OM, Graham DY (1996) Direct antibacterial activity of recombinant human lactoferrin against *Helicobacter pylori*. *J.Clin.Microbiol*. 34:2593- 2594.

Conneely OM, **Ward PP**, Zhou X, and Wagner S. (1996). The Role of Lactoferrin in the Gastrointestinal Tract. Bindels, J.G., Goedhart, A.C. & Visser, H.K.A, editors. Kluwer Academic Publishers. *Recent Development in Infant Nutrition*. 337-386.

Ward PP, Piddington CS, Cunningham GA, Zhou X, Wyatt RD, and Conneely OM. (1996). Expression and Functional Analysis of Recombinant Human Lactoferrin. Hutchens, T.W. & Lonnerdal, B., editors. Humana Press Inc, *Lactoferrin Structure and Function*.

Ward PP, Piddington CS, Cunningham GA, Zhou X, Wyatt RD, Conneely OM (1995). A system for production of commercial quantities of human lactoferrin; a broad spectrum natural antibiotic. *Biotechnology*. 13:498-503.

Ward PP and Conneely OM. (1993). Using Biotechnology to Improve Enzyme Yields: From DNA to the Marketplace. Werk, C. & Boessinger, M., editors. *Enzymes in Animal Nutrition*. 16-21.

Ward PP, Lo JY, Duke M, May GS, Headon DR, Conneely OM (1992). Overproduction of biologically active recombinant human lactoferrin in *Aspergillus oryzae*. *Biotechnology* .10:784-789.

Ward PP, May GS, Headon DR, Conneely OM (1992). An inducible expression system for the production of human lactoferrin in *Aspergillus nidulans*. *Gene*. 122:219-223.

ORAL PRESENTATIONS

- 2020: "Exam Review: The Student's WAY!" Co- presented with Dr. Madhavi Nayar **HCC Faculty Awards & Student Engagement Innovation Symposium**.
- 2019: "Virtual Reality in health Sciences". **HCC Instructional Day**
- 2018: "Girls in STEM". **Panel Discussion member, Outreach event for Middle School Students**. The Center For Learning Innovation, HCC Eastside campus
- 2018: "HCC's Virtual Reality Lab and Studio: An Immersive Learning Space". **Panel Discussion member: UH Downtown's Technology Conference**
- 2016: "Teaching as a career": **Career Symposium, Systems Biology Department, MD Anderson** Houston, TX
- 2013: "Biology Module and Piloting Experience". **Annual Faculty Conference "All Tech Considered"** HCC
- 2004: "Physiological Role of Lactoferrin in Immomodulation and Host Defense". **Mead Johnson Site Visit, The Children's Nutrition Research Center**, 1100 Bates Street, Houston, Texas.
- 2003: "Analysis of Physiological Role of Lactoferrin Using Knockout and Transgenic Mouse Models". **The Sixth International Conference on Lactoferrin: Structure, Function and Applications**, Capri, Italy.
- 2003: "Use of Knockout and Transgenic Mouse models to examine the role of lactoferrin in host defense". **Pediatric Gastroenterology Research Workshop. Baylor College of Medicine** Feigin Center, Houston, Texas
- 2002: "Analysis of Physiological Role of Lactoferrin using Knockout and Transgenic Mouse models". **The Children's Nutrition Research Center**, 1100 Bates Street, Houston, Texas.
- 2002: "The reality of commercially producing human milk proteins". **Experimental Biology Annual Meeting**. New Orleans, LA.
- 2001: "Physiological Role of Lactoferrin in Neonatal Development and Host Defense". **Bristol-Myers Squibb/Mead Johnson Site Visit**, The Children's Nutrition Research Center, 1100 Bates Street, Houston, Texas.
- 2001: "Physiological Consequences of Lactoferrin Ablation". **The Children's Nutrition**

Research Center, 1100 Bates Street, Houston, Texas.

1997: "*Disruption of LF expression in Mice*". **Third International Conference on Lactoferrin Structure and Function**, Le Touquet, France.

POSTER PRESENTATIONS

Presented research at several National and International conferences