Christa Y Heyward ***christa.heyward@gmail.com***
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Education and Training

Postdoctoral Fellow, Cornell University, Ithaca, N.Y. **2013-Present**
Investigate the role of immunity in placenta formation.
Marine Biology Labs Microbial Diversity Course **Summer 2013**
Summer Training course in Microbiology, Woods Hole, MA
Ph.D., ***University of Pennsylvania,*** *Philadelphia, PA* **2011**
Thesis: Adenovirus E1A protein mediates evasion of Natural Killer cells.
M.S., ***Duquesne University****, Pittsburgh, PA* **2004**
Thesis: Assessment of cellular attachment, proliferation and differentiation on titanium-coated CMOS sensors for use in biomedical therapeutics.
B.S., ***Villanova University,*** *Villanova, PA* **2002**
Major: Biology, Minor: Spanish

Research Experience

- Investigate the role of uterine natural killer cells in vascular remodeling and placenta formation. (Postdoctoral Fellowship-Cornell University, Robin L. Davisson, Advisor)
- Characterized the environmental preferences of Multicellular Magnetotactic Bacteria that reside in the Sippewisset Salt Marsh, MA. Identified sediment depth preferences and magnetic pole selection. Characterized the diversity of magnetotactic bacteria present in the Sippewisset Salt Marsh using 16S analysis. (Woods Hole Microbial Diversity research project) Techniques Acquired: Scanning electron Microscopy, 16S sequence analysis, Microbial culture, Fluoroescence *In Situ* Hybridization, Microscopy
- Investigated the role of Adenovirus E1A protein in regulating Natural Killer cell activation ligands. (Ph.D. thesis research- University of Pennsylvania, Robert Ricciardi, Advisor). Techniques Acquired: Flow cytometry, Real-Time q-PCR, cloning, Western Blot, cell culture, NK cell cytotoxicity assays.
- Investigated attachment, proliferation, and differentiation of human adult stem cells and osteoblast-like cells on titanium-coated silicon sensors for use in biomedical therapeutics. (M.S. thesis research-Duquesne University 2004, John S. Doctor, Advisor) Techniques acquired: Fluorescence microscopy, cell culture, Scanning Electron Microscopy.

Publications

- Adenovirus 12 tumorigenic cells resist lysis by Natural Killer cells due to diminished surface expression of NKG2D activation ligands. Christa Y. Heyward, Rajen Patel, Emily M. Mace, Jennifer T. Grier, Andrew Makrigiannis, Jordan S. Orange, Robert P. Ricciardi. Immunology Letters. 30 May 2012; 144 (1-2) 16-23.

Professional and Leadership Experience

Resource Coordinator and Editorial Assistant for Dr. Steven Douglas.
Children's Hospital of Philadelphia **2011-2013**

- Assess the clinical efficacy of biomarkers and assist in the preparation of manuscripts and grants.
- Convey complex scientific ideas in terms comprehensible to the general public.
- Organize documentation related to Dr. Douglas's research projects.
- Coordinate communications between members of the lab.
- Track literature relevant to Dr. Douglas's area of research.

Vice Chair of Finance for the Graduate and Professional Student Assembly (GAPSA),
University of Pennsylvania **2008-2009**

- Budgeted and administered a $1M student government fund.
- Improved budget transparency and negotiated for a 20% budget increase.
- Reformed the event funding process for graduate student organizations.
- Represent GAPSA on several university committees, including a subcommittee of the University Council.

Vice Chair for Equity and Access for the Graduate and Professional Student Assembly,
University of Pennsylvania **2007-2008**

- Advocated on behalf of all graduate student organizations including underrepresented student organizations, served as a liaison between the student governments of the twelve schools at the university and the centralized student government, GAPSA.
- Interviewed, selected and appointed students to nearly 100 positions on various university committees.
- Advocated on behalf of GAPSA and the interests of graduate students on several university committees, including a subcommittee of the University Board of Trustees.
- Manage a policy council on issues related to open expression, women at Penn, manufacturing responsibility, and underrepresented graduate student populations.

Treasurer for the Black Graduate and Professional Student Assembly,
University of Pennsylvania **2006-2007**

- Co-authored a new graduate student government constitution, including the creation of the Vice Chair of Equity and Access position
- Managed the organization's finances,
- Organize academic forums and social events for the black graduate student community, reserved event locations, obtaining caterers for events. Also served as Chairwoman of the Events Committee 2005-2006.
- advocated on behalf of underrepresented students to the broader university community and represented the organization on various university committees.

Presentations at Meetings (* presenting author)

- Adenovirus 12 tumorigenic cells resist lysis by Natural Killer cells due to diminished surface expression of NKG2D activation ligands. Christa Y. Heyward*, Rajen Patel, Emily M. Mace, Jennifer T. Grier, Andrew Makrigiannis, Jordan S. Orange, Robert P.

Ricciardi. Society for Natural Immunity Meeting April 20-24, 2012, Asilomar, California

- Tumorigenic Ad12 E1A protein regulates susceptibility to Natural Killer cell lysis. *C Heyward and R Ricciardi. AACR Tumor Immunology. December 2-5, 2008. Miami, Florida.
- Evaluating FDA-approved calcium phosphate biomaterials as delivery vehicles for human adult mesenchymal stem in bone tissue engineering. H Qidwai, *C Heyward, P Campbell, J Doctor. Annual meeting of the Society for Developmental Biology. July 31-August 3, 2004. Calgary, Alberta Canada.
- Assessment of cellular attachment on CMOS sensors. *C Heyward, F Alfaro, P Campbell, J Doctor, G Fedder, M Miller, L Weiss. Pennsylvania Infrastructure Technology Alliance. October 29, 2003. Pittsburgh, PA.
- Evaluation of FDA-approved calcium phosphate biomaterials as delivery vehicles for human adult stem cells in bone repair. *C Heyward, H Qidwai, J Doctor, P Campbell. Pittsburgh Science Symposium September 25, 2003. Pittsburgh, PA.
- Evaluation of FDA-approved calcium phosphate biomaterials as delivery vehicles for human adult stem cells in bone repair. *C Heyward, H Qidwai, J Doctor, P Campbell. Pittsburgh Bone tissue Engineering Symposium- August 18-23, 2003. Pittsburgh, PA.
- Evaluating FDA-approved calcium phosphate biomaterials as delivery vehicles for human adult mesenchymal stem in bone tissue engineering. H Qidwai, C Heyward, P Campbell, *J Doctor. Annual meeting of the Society for Developmental Biology. July 30-August 3, 2003. Boston, MA.

Teaching Experience and Curriculum Development

- **Volunteer Instructor, Penn Academy for Reproductive Sciences,** University of Pennsylvania, 2011-Present. Instruct high school girls on research related to fertility, oncofertility, genetics, and the female reproductive tract.
- **Volunteer Instructor, Science Education Academy,** University of Pennsylvania, 2012-present. Teach basic principals of Physics, Chemistry, and Biology. Assist elementary school children with projects for the Philadelphia Science Fair competition.
- **Teaching Assistant, Microbial Diversity and Pathogenesis,** University of Pennsylvania, 2012. Professor: Mechthild Pohlschroder. Lead recitation. Taught lab techniques in microbiology. Grades exams and homework assignments. Guest lectured.
- **TA helper, Introduction to Molecular Biology,** University of Pennsylvania, 2012. Supported the teaching assistant in demonstrating lab techniques and explaining basic molecular biology.
- **Teaching Assistant, Molecular Biology and Genetics,** University of Pennsylvania, 2012. Professors: Nancy Bonini and Kim Gallagher. Lead recitation and reviewed lecture material and homework questions, graded exams, and provided feedback to instructors.
- **Student representative, Cell and Molecular Biology Executive Committee,** University of Pennsylvania, 2007-2009. Provide the graduate student perspective on

issues such as class relevance, teaching awards, development of new Ph.D. degree and certificate programs, new student orientation activities, length of rotations, organization of the yearly symposium.

- **Student representative, Cell Growth and Cancer Curriculum Committee**, University of Pennsylvania, 2006-2007. Reviewed required coursework concerning relevance to the student population.
- **Student representative, Cell Growth and Cancer Recruitment Committee,** University of Pennsylvania, Student Representative, 2005-2007. Developed and implemented strategies to successfully recruit perspective students to the program.
- **Graduate Teaching Assistant, General Biology,** Duquesne University, 2002-2003 Laboratory Instructor. Taught classes of 25 students, prepared lesson background information, lab set up, instructed students on various laboratory techniques, graded laboratory work and exams, and provided recitation of course material.
- **Villanova Summer Research Institute Counselor,** Villanova University, 2000-2001. Mentored and trained high school students through an introductory lab experience. Taught basic laboratory skills, epidemiology, and population growth statistics, planned social activities, and supervised field trips, managed housing.

Professional Associations

- American Association for Cancer Research 2007-present
- American Society for Biochemistry and Molecular Biology 2011-present
- Society for Natural Immunity 2012-present

Honors

- President and Provost's Citation for Exceptional Commitment to Graduate and Professional Student Life 2011 (University of Pennsylvania)
- ASBMB Hill Day Science Advocacy participant 2011
- Penn Women's Center Leadership Award 2009 (University of Pennsylvania)
- Woman of Color Graduate Student Awardee 2009 (University of Pennsylvania)
- Leadership Education And Policy (LEAP) Program addressing Health Disparities 2008, 2009 (University of Pennsylvania)
- Biotechnology Institute's Minority Fellows Program, 2007 (*University of Pennsylvania*)
- Virology training grant, NIH division of HHS, 2006-2008 (*University of Pennsylvania*)
- FASEB-MARC Travel Award for attendance of the 2004 Annual meeting of the Society for Developmental Biology (*Duquesne University*)
- Bayer Graduate Research Fellowship for academic and research excellence, 2003-2004 (*Duquesne University*)
- Villanova Track and Field Big East All Academic Team Award – Track and Field, 1998-2002 (*Villanova University*)
- Presidential Scholarship, 1998-2002 (*Villanova University*)
- Villanova HHMI/NSF Young Scholars Program, 1997 (*Villanova University*)