

# Curriculum Vitae

**Jennifer L. Walker**

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## Higher Education

<u>Date</u>	<u>Name of Institution</u>	<u>Degree</u>
2016-	University of Pittsburgh Dept of Biological Sciences PI: Dr. Jacob D. Durrant <b>(graduation: Jan 2022)</b>	PhD in Mol, Cell, Dev Bio (Computational Biology)
2009	West Virginia University School of Human Resources and Education	M.A. in Secondary Science Education
2005	Washington State University School of Molecular Biosciences	M.S. in Biochemistry
2002	University of Pittsburgh Dept. of Biological Sciences	B.S. in Molecular Biology – Biochemistry

## Scientific Career

Aug 16 - Present	Graduate Student Researcher, Teaching Assistant, Programmer Dr. Jacob D. Durrant Molecular Dynamics of Hexokinase II, Structural Bio insights Programming, High-Performance Computing, Big Data, Pipelining
Jun 12 – Aug 16	Research Technician, Lab Manager University of Pittsburgh, Department of Computational and Systems Biology, Pittsburgh, PA Dr. Nathan Clark
Jan 08 - Jan 09	Research Associate I (Part-Time) West Virginia University, Department of Biological Sciences, Morgantown, WV Dr. Ashok Bidwai
Dec 06 – June 07	Research Associate I

Washington State University, Department of Biological Sciences, Pullman, WA  
Drs. David and Stacia Moffett

- May 05 – Feb 06      Research Technician I  
University of Idaho, Dept. of Microbiology, Molecular Biology and Biochemistry. Moscow, ID  
Dr. Patricia L. Hartzell
- Aug 02 – May 05      Graduate Student, Teaching Assistant  
Washington State University, School of Molecular Biosciences, Pullman, WA  
Dr. William B. Davis
- Aug 00 – Aug 02      Undergraduate Researcher  
University of Pittsburgh, Department of Biological Sciences, Pittsburgh, PA  
Dr. Jeffrey L. Brodsky

## Publications

Erich Helleman [1], **Jennifer L. Walker** [1], Mitch Lesko [1], Allyson F. O'Donnell, Martin Schmidt, Jacob D. Durrant. Propagation of structural flexibility leads to ligand binding changes: a novel mutation in yeast hexokinase II studied using lab evolution and molecular dynamics simulations. (2020, in preparation)

Melissa S. Plakke, **Jennifer L. Walker**, Jeffrey B. Lombardo, Breanna J. Goetz, Gina N. Pacella, Jacob D. Durrant, Nathan L. Clark, and Nathan I. Morehouse. Characterization of Female Reproductive Proteases in a Butterfly from Functional and Evolutionary Perspectives. *Physiological and Biochemical Zoology* (2019) 92:6, 579-590

Ropp, P.J., Spiegel, J.O., **Walker, J.L.** *et al.* Gypsum-DL: an open-source program for preparing small-molecule libraries for structure-based virtual screening. *J Cheminform* 11, 34 (2019) doi:10.1186/s13321-019-0358-3

Ottillie, S., Goldgof, G.M., Cheung, A.L., **Walker, J.L.**, *et al.* Two inhibitors of yeast plasma membrane ATPase 1 (ScPma1p): toward the development of novel antifungal therapies. *J Cheminform* 10, 6 (2018) doi:10.1186/s13321-018-0261-3

**Jennifer L. Walker**, Raghav Partha, David A. Taft, Brandon S. Small, and Nathan L. Clark. Coevolution in the Yeast Nuclear Pore: Investigating Compensatory Changes in the Nup84/Nup145C Interface. (2015, in preparation.)

Amy M. Martin, Derek J. Pouchnik, **Jennifer L. Walker**, and John J. Wyrick. Redundant Roles for Histone H3 N-Terminal Lysine Residues in Subtelomeric Gene Repression in *Saccharomyces cerevisiae*. (2004) *Genetics*. **167**:1123-1132.

Christina M. Coughlan, **Jennifer L. Walker**, Jared C. Cochran, K. Dane Wittrup, and Jeffrey L. Brodsky. Degradation of Mutated Bovine Pancreatic Trypsin Inhibitor in the Yeast Vacuole Suggests Post-Endoplasmic Reticulum Protein Quality Control. (2004) *J. Biol. Chem.* **279**(15):15289-15297.

#### **Codeathons and Programming coursework:**

**Introduction to Python for Computational Biologists** (2018), taught by Dr. David Koes from the Computational and Systems Biology Department. An intense graduate-level course that covered all relevant Python packages for bio- and chem-informatics researchers.

**NCBI Genomics Hackathon**, January 2020, Carnegie Mellon University, Pittsburgh, PA. Team Member: Neoepitopes. **Contribution: Writing documentation and preparing paper, coordinating others with various skillsets.** Github link: <https://github.com/NCBI-Codeathons/NI>

**ShelInnovates2020 University of Pittsburgh Women's Hackathon**, February 2020, University of Pittsburgh, Pittsburgh, PA. Team Lead: BusCrowd. **Contribution: Coordinating a varied group of people, connecting front-end to back-end, learning JavaScript.** Github link: [https://github.com/jlwalker977/BusCrowd\\_ShelInnovates2020](https://github.com/jlwalker977/BusCrowd_ShelInnovates2020)

**ShelInnovates2020 University of Pittsburgh Women's Hackathon**, February 2020, University of Pittsburgh, Pittsburgh, PA. Team Lead: GetGoing2021. **Contribution: Coordinating a varied group of people, connecting front-end to back-end, learning JavaScript.**

Github link: <https://github.com/jlwalker977/getgoing-si2021>  
SteelHacks2021

University of Pittsburgh, Pittsburgh, PA. Team Lead: Learn2Earn.  
Contribution: product management and user interface design  
Github link: <https://github.com/jlwalker977/Learn2Earn>

#### **Programming Languages:**

- Python – using packages to optimize functionality, pipelining, data analysis
- Bash/Unix – file/directory manipulation, high-performance computing, pipelining
- R – data analysis
- LaTeX

#### **Abstracts and Presentations**

**Walker JL**, Taft DA, Small BS, Clark NL. Coevolution of interacting proteins in the yeast nuclear pore complex. Science 2015 Unleashed poster session, Pittsburgh, PA. October 9, 2015

**Walker JL**, Taft DA, Small BS, Clark NL. Coevolution of interacting proteins in the yeast nuclear pore complex. Computational and Systems Biology Annual Retreat poster session, Pittsburgh, PA. May 15, 2015

**Walker JL**, Taft DA, Small BS, Clark NL. Coevolution of interacting proteins in the yeast nuclear pore. Pittsburgh Yeast Meeting presentation, Pittsburgh, PA. March 20, 2015

**Walker JL**, Taft DA, Clark NL. Coevolution of Interacting proteins in yeast. MELD Journal Club presentation, Pittsburgh, PA. October 31, 2014.

Yang R, **Walker J.L.**, and Hartzell PL. Analysis of AglZ, a myosin-like protein required for Adventurous gliding motility. Conference on the Biology of *Myxobacteria*. Vancouver B.C., July 10-13, 2005.

**Walker J.L.** and Davis W.B. Characterization of the Short-Patch Base Excision Repair Enzyme, hOGG1. NIH Biotechnology Training Program Poster Session. Pullman, WA. April 2004.

Coughlan C.M., **Walker J.L.**, Smith C.M., Wittrup D., and Brodsky J.L. Evidence for post-endoplasmic reticulum protein quality control: Analysis of BPTI mutants in the yeast secretory pathway. In Abstracts of the Molecular Biology of the Cell for the 42<sup>nd</sup> annual meeting of the American Society for Cell Biology. San Francisco, CA. Dec 14-18, 2002.

#### **Educational Outreach Activities/Teaching Experience**

**Teaching Assistant** for Univ of Pittsburgh Bio Dept Biochemistry 1000 class (Jan 2019-May 2019) for Dr. Laura Zapanta.

**Presenter/Coordinator** of field trip with Mr. Phil Morrow's Bioengineering class from Montour High School, at the lab in BST3, Pittsburgh, PA. March 26, 2015. Students did activities related to gel electrophoresis. Q and A about careers in the field.

**Presenter** for Univ of Pittsburgh Bio Dept Summer program, with Marcie Warner. July, 24, 2014. Ran activity and presentation on what the Comp Bio department is and what we do.

**Presenter/Activity Leader** at Tour Your Future event, organized through the Carnegie Science Center Girls in Math and Stem initiative, Pittsburgh, PA. March 15, 2014. With Kristina Buschur and Ericka Mochan. Presented on Comp Bio department, toured lab, ran activities, Q and A with students.

**Presenter/Activity Leader** at SciTech Days at the Carnegie Science Center, Pittsburgh, PA. Nov 7-8, 2013. With ShaNay Baker. Ran activities with children, promoted the Office of Science Education and Outreach within the Med School.

**Teacher**, Chemistry and Physics. Aug 09 – Jun 12  
Lewis County High School, 205 Minuteman Dr, Weston, WV 26452  
(304) 269-8315  
Principal: Mr. Timothy Derico

**Teaching Assistant.** Aug 04 - Dec 04  
School of Molecular Biosciences, Washington State University  
Assistant to Dr. Wendy Shuttleworth  
MBIOS 304, Intro. Biochemistry Lab

## References

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