

JESSICA VANDERPLOEG

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EDUCATION:

- 2014 Ph.D., Biology, McMaster University, Hamilton ON
- Supervisor: Dr. Roger Jacobs
- 2009 B.Sc. *with Distinction*, Biology, Trinity Western University, Langley BC

PROFESSIONAL APPOINTMENTS:

- 2015- Assistant Professor, Department of Biology, Taylor University, Upland IN
- 2014-2015 Postdoctoral Fellow, Department of Biology, McMaster University, Hamilton ON

RESEARCH EXPERIENCE and INTERESTS:

- 2015- Personal and student projects, Biology, Taylor University, Upland IN
- *A frizzled-independent planar cell polarity pathway in the Drosophila wing*
 - *Matrix metalloproteases are required for cell polarity during Drosophila heart tubulogenesis*
 - *Src42A kinase promotes Drosophila embryonic heart cell migration*
- 2014-2015 Postdoctoral fellowship, Biology, McMaster University, Hamilton ON
- *A role for extracellular matrix interactions in Drosophila larval heart structure and function*
- 2009-2014 Ph.D., Biology, McMaster University, Hamilton ON
- *α PS3 β PS1 integrin and its adaptor Talin are essential for Drosophila embryonic heart tubulogenesis*
 - Research key words: genetics, cell and molecular biology, cell polarity, integrin, Talin, microscopy, immunolabeling, protein overexpression, antibody construction
 - Supervisor: Dr. Roger Jacobs
- 2007-2009 Undergraduate Summer and Thesis Projects, Trinity Western University, Langley BC
- *A screen for modifiers of frizzled-independent epithelial planar polarity in Drosophila*
 - Research key words: genetics, molecular biology, mutagenesis screen
 - Supervisor: Dr. Dennis Venema

PUBLICATIONS:

- 2017 **Vanderploeg, J.** and Jacobs, J. R. Mapping heart development in flies: Src42A acts non-autonomously to promote heart tube formation in *Drosophila*. *Vet Sci* 4:23 (2017)
- 2017 Raza, Q., **Vanderploeg, J.** and Jacobs, J. R. Matrix Metalloproteinases are required for membrane motility and lumenogenesis during *Drosophila* heart development. *PLoS ONE* 12:e0171905 (2017)
- 2015 **Vanderploeg, J.** and Jacobs, J. R. Talin is required to position and expand the luminal domain of the *Drosophila* heart tube. *Dev Biol* 405:189 (2015)
- 2015 Bogatan, S., Cevik, D., Demidov, V., **Vanderploeg, J.**, Panchbhaya, A., Vitkin, A. and Jacobs, J. R. Talin is required continuously for cardiomyocyte remodeling during heart growth in *Drosophila*. *PLoS ONE* 10:e0131238 (2015)
- 2012 **Vanderploeg, J.**, Vazquez Paz, L. L., MacMullin, A. and Jacobs J. R. Integrins are required for cardioblast polarisation in *Drosophila*. *BMC Dev Biol* 12:8 (2012)

GRANTS:

- 2017 “*Drosophila melanogaster* and planar cell polarity” – research grant funded by the Faculty Mentored Undergraduate Summer Scholarship (Taylor University, \$14,279.20)
- 2016-2017 “Biology – Labeling Kit for Confocal Fluorescent Microscope” – research grant funded by the Women’s Giving Circle (Taylor University, \$3,500)
- 2016 “Planar Cell Polarity” – research grant funded by the Faculty Mentored Undergraduate Summer Scholarship (Taylor University, \$10834.40)
- 2016 “BIO 203 Genetics Lab Redesign with Vertical articulation with BIO 201 and BIO 312, 450, 452, 462, and 471” – educational grant funded by the Bedi Center for Teaching and Learning Excellence (Taylor University, \$500).
- 2015-2016 “The Fruit Fly as a Biological Tool for Faculty-Mentored Student Research” – research grant funded by the Women’s Giving Circle (Taylor University, \$4,500)

Selected RESEARCH PRESENTATIONS:

- 2017 Barnett, D., Crosley, A., Phillips, C., and Vanderploeg, J. Fruit fly research: Pointing us in the right direction. Student oral presentation at the 2017 Celebration of Scholarship, Taylor University (Upland, IN)
- 2016 Vanderploeg, J. A Tal(in) of a broken heart: Tubulogenesis through the lens of the *Drosophila* heart. Invited seminar presentation (Goshen College, Goshen IN)

- 2016 Vanderploeg, J. A Tal(in) of a broken heart: Integrin adhesion instructs *Drosophila* heart tube development. Invited seminar presentation for the American Society for Microbiology's BSU chapter (Ball State University, Muncie IN)
- 2015 Vanderploeg, J. Fruit fly research: A Tal(in) of a broken heart. Talin-mediated Integrin adhesion in *Drosophila* heart development. Invited Science Seminar presentation for the School of Natural and Applied Sciences (Taylor University, Upland IN)
- 2013 Vanderploeg, J. and Jacobs, J. R. Talin is essential for cell polarization and lumen formation during *Drosophila* embryo heart assembly. Oral presentation at the Canadian *Drosophila* Research Conference, CanFly (Vancouver BC)
- 2010 Vanderploeg, J., Vazquez Pas, L., and Jacobs, J. R. A role for Integrins during lumen formation in *Drosophila* heart development. Poster presented at the Genetics 2010: Model Organisms to Human Biology Conference (Boston MA)
- 2010 Vazquez Pas, L., MacMullin, A., Vanderploeg, J., and Jacobs, J. R. Integrins are required for Slit and Robo localization during assembly of the *Drosophila* heart. Poster presented at the 51st Annual *Drosophila* Research Conference (Washington DC)
- 2009 Vanderploeg, J. and Venema, D. A screen for modifiers of *frizzled*-independent epithelial planar polarity in *Drosophila*. Poster presented at the annual Trinity Western University Faculty of Natural and Applied Sciences Research Session (Langley BC, Canada).

TEACHING EXPERIENCE:

- 2015- Assistant Professor of Biology, Taylor University
 Developmental Biology (Fall 2015, 2017)
 Cell Biology and Genetics lab (Fall 2015 - 2017 and Spring 2016, 2017)
 Directed Research (Spring 2016, 2017)
 Microbiology and Immunology (Spring 2016, 2017)
 Research Methods (Fall 2015, Fall 2016)
 Molecular Genetics lab (Fall 2016)
- 2014 Adjunct Instructor, McMaster University
 Laboratory Methods in Molecular Biology (Fall 2014)
- 2013-2014 Invited lecturer, McMaster University
 Cell Biology (Fall 2013, 2014 and Winter 2014)
 Experimental Design in Biology (Fall 2013, 2014)
 Genetics (Fall 2013, 2014 and Winter 2014)

PROFESSIONAL MEMBERSHIPS:

- 2016- Genetic Society of America
- 2016- Indiana Academy of Science
- 2015-2016 National Association of Biology Teachers
- 2010 American Scientific Association

PROFESSIONAL DEVELOPMENT:

- 2017 New Faculty Institute (Council of Christian Colleges and Universities, Calvin College)
- 2017 Faith and Learning Seminar class (Taylor University)
- 2014 Principles and Practices of University Teaching (Education 750, McMaster University)

PROFESSIONAL COMMITTEE and TASKFORCE involvement:

- 2017- Enrollment and Athletics Committee
- 2017- Faculty Salary Compensation Task Force
- 2016- Euler Safety Committee
- 2016-2017 University Librarian Search Committee