

KIRA M. VELEY, PhD

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RESEARCH EXPERIENCE

Research Scientist, Donald Danforth Plant Science Center Sept. 2015 – present
Co-Mentors: Rebecca Bart and Jim Carrington

Research focuses:

- Lead and managed team for improve disease resistance in cassava using CRISPR/Cas9 genome editing.
- Submitted provisional patent application for improved genome editing.
- Lead interdisciplinary effort using high-throughput phenotyping for improving sorghum drought resistance and nitrogen use efficiency.
- Designed and initiated project studying epigenetic regulation of plant-microbe interaction

Postdoctoral Fellow, Department of Biology April 2010 – Sep. 2015

Mentor: Elizabeth Haswell, Washington University, St. Louis

Research Highlights:

- Discovered link between plastids and hypoosmotic stress.
- Demonstrated regulation of immune responses by mechanosensitive membrane proteins.

Postdoctoral Fellow, Danforth Plant Science Center Sept. 2009 - April 2010

Mentor: Eliot Herman

Research: Altered protein composition of *Camelina sativa*

Doctoral Thesis, Department of Biology Aug. 2004 - Aug. 2009

Mentor: Scott Michaels, Indiana University, Bloomington

Research focus: Functional roles of floral regulatory genes.

Honors Thesis and Research Assistant, Dept. of Biology May 2002 – Aug. 2004

Mentor: Fred Sack, Ohio State University, Columbus

Research focus: Organ-specific regulation of stomatal patterning.

EDUCATION

Indiana University, Bloomington, IN 2009
Ph.D., Molecular Biology and Genetics

Ohio State University, Columbus, OH 2004
B.S., Biology, College Honors and Distinction

SELECTED PUBLICATIONS

Veley, K.M., Berry, J.C., Fentress, S.J., Schachtman, D.P., Baxter, I., and Bart, R., High-throughput profiling and analysis of plant responses over time to abiotic stress. *Plant Direct*, 2017 1(4): p. 1-13.

<http://dx.doi.org/10.1002/pld3.23>

Veley, K.M., Maksaev, G., Frick, E.M., January, E., Kloepper, S.C., and Haswell, E.S., MSL10 has a regulated cell death signaling activity that is separable from its mechanosensitive ion channel activity. *Plant Cell*, 2014. 26(7): p. 3115-3131.

<https://www.ncbi-nlm-nih.gov.libproxy.wustl.edu/pubmed/25052715>

Veley, K.M., Marshburn, S., Clure, C.E., and Haswell, E.S., Mechanosensitive channels protect plastids from hypoosmotic stress during normal plant growth. *Current Biology*, 2012. 22(5): p. 408-413.

<https://www.ncbi-nlm-nih.gov.libproxy.wustl.edu/pubmed/22326022>

Veley, K.M. and Haswell, E.S., Plastids and Pathogens: Mechanosensitive Channels and Survival in a Hypoosmotic World. *Plant Signaling and Behavior*, 2012. 7(6): p. 668-671.

<https://www.ncbi-nlm-nih.gov.libproxy.wustl.edu/pubmed/22580705>

Feng, W., Jacob, Y., Veley, K.M., Ding, L., Yu, X., Choe, G., and Michaels, S.D., Hypomorphic alleles reveal FCA-independent roles for FY in the regulation of FLC. *Plant Physiology*, 2011. 155(3): p. 1425-1434.

<https://www.ncbi-nlm-nih.gov.libproxy.wustl.edu/pubmed/21209277>

Bhave, N. S., Veley, K.M., Nadeau, J., Lucas, J.R., Bhave, S.L., and Sack, F.D., TOO MANY MOUTHS promotes cell fate progression in stomatal development of Arabidopsis stems. *Planta*, 2009. 229(2): p. 357-367.

<https://www.ncbi-nlm-nih.gov.libproxy.wustl.edu/pubmed/18979118>

Veley, K.M. and S.D. Michaels, Functional redundancy and new roles for genes of the autonomous floral-promotion pathway. *Plant Physiology*, 2008. 147(2): p. 682-695.

<https://www.ncbi-nlm-nih.gov.libproxy.wustl.edu/pubmed/18408043>

Jacob Y, Mongkolsirawatana C, Veley KM, Kim SY, Michaels SD., The nuclear pore protein AtTPR is required for RNA homeostasis, flowering time, and auxin signaling. *Plant Physiology*, 2007. 144(3): p.1383-1390.

<https://www.ncbi-nlm-nih.gov.libproxy.wustl.edu/pubmed/17535820>

FELLOWSHIPS, GRANTS and AWARDS

DOE-JGI Community Science Program - Micro/Metagenome Sequencing Support	2016
Outstanding Research Poster Awards, Departmental Annual Retreats	2017, 14, 12
ASPB Travel Grant	2013
NSF Travel Fellowship	2013
NAASC ICAR Travel Grant (declined)	2013
National Science Foundation Graduate Training Fellowship	2004-2007
Deanman Undergraduate Research Forum Presenter Award	2004
Dean's Undergraduate Research Fund Award	2003
Scarlet and Grey Scholarship	2000-2004
Trustees Scholarship	2000-2004

SCIENCE COMMUNITY INVOLVEMENT and PRESENTATIONS

<i>Co-chair</i> , Committee for Scientific Leadership and Training	2016-2017
<i>Speaker</i> , Empowerment Project/Women in STEM Panel	Oct. 2017
<i>Poster</i> , ASPB Annual Conference, Honolulu, HI	July 2017
<i>Speaker</i> , Advanced Breeding Communications for Women Farmers Conference, National Corn Growers Association, St. Louis	Nov. 2016
<i>Instructor</i> , Girls STEAM ahead Girl Scouts of Eastern Missouri	2016, 2017
<i>Poster</i> , ASPB-Midwest Chapter Meeting, St. Louis, MO	March 2015
<i>Poster</i> , Host-Microbe Interactions Symposium, St. Louis, MO	Sept. 2014
<i>Speaker</i> , Biology Dept. Seminar Series, SIUE, Edwardsville, IL	Feb. 2014
<i>Speaker</i> , Plant Biology Annual Retreat, St. Louis, MO	Oct. 2013
<i>Poster</i> , ASPB Annual Conference, Providence, RI	July 2013
<i>Speaker</i> , Midwest Plant Cell Dynamics Meeting, Madison, WI	June 2013
<i>Poster</i> , Plant Biology Annual Retreat, St. Louis, MO	Oct. 2012 - 2015
<i>Poster</i> , Wash U Postdoc Research Symposium	March 2012
<i>Speaker</i> , Plant Biology Annual Retreat, St. Louis, MO	Oct. 2011
<i>Judge</i> , Indiana Regional Science Fair, Bloomington, IN	April 2008, 2009
<i>Poster</i> , ASPB Plant Biology and Botany Joint Congress, Chicago, IL	July 2007
<i>Poster</i> , UC Riverside Symposium in Plant Biology, Riverside, CA	Jan. 2007
<i>Participant</i> , International Conference on Arabidopsis Research, Madison, WI	July 2005
<i>Poster</i> , Denman Undergraduate Research Forum, Columbus, OH	April 2004

TRAINING and MENTORSHIP

<i>Mentor</i> , Wash U Undergraduate Research Fellow, Diana Fasanella	2016-2017
<i>Mentor</i> , African Women in Agricultural Research and Development, Ihuoma Okwuonu	2016
<i>Graduate Rotation Project Supervisor</i> , Wash U, Gretchen Walljasper	2016
<i>Mentor</i> , Wash U Summer Undergraduate Research Fellowship, Sarah Kloepper	2013
<i>Graduate Rotation Project Supervisor</i> , Wash U Elizabeth Frick	2013
<i>Mentor</i> , Senior High School Research Program (MICDS)	2012
<i>Mentor</i> , Wash U, Undergraduate Independent Study Course, Ray Kim	2012
<i>Teaching Assistant</i> , Genetics, Indiana University	2008-2009
<i>Mentor</i> , Indiana University, three undergraduate research assistants	2007-2008