

DR. GRAHAM J. DOW

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FIELDS OF STUDY

The intersection of molecular biology, organismal development, and plant ecophysiology with expertise in cellular signaling, stomatal development and leaf structure, and plant responses to the environment.

EDUCATION

- 2008 – 2014 **Stanford University**, Department of Biology
Ph.D, Cell and Molecular Biology, *Bio-X Bowes Fellow*
- 2003 – 2007 **Cornell University**, College of Agriculture and Life Sciences
B.Sc, Ecology and Evolutionary Biology, *Magna Cum Laude*

APPOINTMENTS

- 2016 – Present **Boston University**, Department of Biology
Research Assistant Professor
- 2014 – 2016 **Harvard University**, Department of Organismic and Evolutionary Biology
NOAA Climate & Global Change Postdoctoral Fellow

FELLOWSHIPS & AWARDS

- 2014 – 2016 **NOAA Climate & Global Change Postdoctoral Fellowship**,
University Corporation for Atmospheric Research (UCAR)
- 2013 **Travel Award**, American Society of Plant Biologists (ASPB), Davis, CA
- 2012 **Travel Award**, 29th New Phytologist Symposium: Stomata, Manchester, UK
- 2009 – 2012 **Bio-X Interdisciplinary Graduate Fellowship**, Stanford University
- 2007 **Merrill Presidential Scholar**, top 1% of graduating class, Cornell University
- 2007 **Chancellor's Award for Student Excellence**, State University of New York
- 2007 **Top 25 Most Influential Undergraduates**, Cornell University Daily Sun
- 2007 **Rhodes Scholarship**, Finalist
- 2006 **Natural Sciences and Engineering Research Council of Canada (NSERC)
Undergraduate Student Research Award (USRA)**, University of British Columbia
- 2005 **NSERC USRA**, University of British Columbia
- 2005 **Top Student Poster**, Evolutionary Biology, Cornell University
- 2004 **William T. Keeton Prize**, top student Introductory Biology, Cornell University

PUBLICATIONS

- 2017 **Dow GJ**. Plant Biology: Rethinking structure-function relationships in guard cells. *Current Biology*, 27:1069-1071.
- 2017 **Dow GJ**, Berry JA, Bergmann DC. Disruption of stomatal lineage signaling or transcriptional regulators has differential effects on mesophyll development, but maintains coordination of gas-exchange. *New Phytologist*, 216:69-75.
- 2017 Carins Murphy MR, **Dow GJ**, Jordan GJ, Brodribb TJ. Vein density is independent of epidermal cell size in *Arabidopsis* mutants. *Functional Plant Biology*, 44:410-418.
- 2014 **Dow GJ** and Bergmann DC. Patterning and processes: how stomatal development defines physiological potential. *Current Opinion in Plant Biology*, 21:67-74.

- 2014 **Dow GJ**, Bergmann DC, Berry JA. An integrated model of stomatal development and leaf physiology. *New Phytologist*, 201:1218-1226.
- 2014 **Dow GJ**, Berry JA, Bergmann DC. The physiological importance of developmental mechanisms that enforce proper stomatal spacing in *Arabidopsis thaliana*. *New Phytologist*, 201:1205-1217.
- Special commentary on 2014 New Phytologist articles:** Franks PJ and Casson S. Connecting stomatal development and physiology. *New Phytologist*, 201:1079-1082.
- 2013 Voiniciuc C, Dean GH, Griffiths JS, Hwang YT, Gillett A, **Dow G**, Western TL, Haughn GW. FLYING SAUCER 1 is a transmembrane RING protein that promotes pectin methylesterification in *Arabidopsis* seed mucilage. *Plant Cell*, 25:944-959.
- 2010 Wu Y, Cain-Hom C, Choy L, Hagenbeck TJ, de Leon GP, Chen Y, Finkle D, Venook R, Wu X, Ridgway J, Schahin-Reed D, **Dow GJ**, Shelton A, Stawicki S, Watts RJ, Zhang J, Choy R, Howard P, Kadyk L, Yan M, Zha J, Callahan CA, Hymowitz SG, Siebel CW. Therapeutic antibody targeting of individual NOTCH receptors. *Nature*, 464:1052-1057.

FUNDING

- 2014 - 2016 **NOAA Climate & Global Change Postdoctoral Fellowship**, UCAR (\$138,000)
- 2009 - 2012 **Bio-X Interdisciplinary Graduate Fellowship**, Stanford University (\$156,000)
- 2009 - 2012 **Stanford Graduate Fellowship**, Stanford University (\$99,000; offer declined)
- 2006 **NSERC USRA**, University of British Columbia (\$4,500)
- 2005 **NSERC USRA**, University of British Columbia (\$4,500)

INVITED PRESENTATIONS

- 2017 **ASPB Annual Meeting**, Whole Plant Ecology/Ecophysiology Session, Honolulu, HI. Spatial and temporal relationships between stomatal development and function in a temperate forest canopy.
- 2017 **Massachusetts Institute of Technology**, PINE Seminar Series, Boston, MA. Is stomatal development linked to photosynthetic capacity?
- 2016 **Boston University**, Biogeosciences Seminar Series, Boston, MA. Understanding stomatal function in plants – from model systems to model behavior.
- 2016 **Woods Hole Marine Biological Center**, Ecosystem Center Seminar Series, Woods Hole, MA. Stomatal dynamics in a changing climate – linking genes, development, and physiology.
- 2016 **Boyce Thompson Institute for Plant Research**, Ithaca, NY. Stomatal dynamics in a changing climate – linking genes, development, and physiology.
- 2016 **Texas Tech University**, Department of Biological Sciences, Lubbock, TX. Stomatal dynamics in a changing climate – linking genes, development, and physiology.
- 2016 **Boston University**, Department of Biology, Boston, MA. Stomatal dynamics in a changing climate – linking genes, development, and physiology.
- 2015 **Harvard University**, Herbaria Seminar Series, Cambridge, MA. Applying lessons from a genetic model system to understand stomatal function in natural ecosystems.
- 2014 **California Institute of Technology**, Environmental Science and Engineering Seminar Series, Pasadena, CA. The physiological consequences of altering stomatal development in plants – lessons from *Arabidopsis*.
- 2013 **ASPB Western Section Meeting**, Davis, CA. Coordinated development of epidermal and mesophyll tissues enhances photosynthetic capacity in *A. thaliana*.
- 2012 **29th New Phytologist Symposium: Stomata**, Manchester, UK. Physiological consequences of stomatal patterning and density in *Arabidopsis thaliana*.

TEACHING & ADVISING

- 2017 **Postdoctoral Research Advisor**, Boston University, Boston, MA. Advising the research of a postdoctoral scholar in my laboratory studying cell-to-cell communication in the stomatal lineage.
- 2017 **Undergraduate Research Opportunities Program (UROP) Mentor**, Boston University, Boston, MA. Mentoring two undergraduate students pursuing research projects in my laboratory.
- 2014 **Research Experience for Undergraduates (REU) Mentor**, Harvard Forest, Petersham, MA. Mentored undergraduate student in summer field research and analysis.
- 2012 **Undergraduate Tutor**, BIO 43: Plant Biology, Evolution, and Ecology, Stanford University. Individualized tutoring sessions for fifteen students struggling to learn course material.
- 2011 **Undergraduate Research Advisor**, Stanford University. Taught and supervised undergraduate student to perform plant gas-exchange experiments for summer internship.
- 2010 **Teaching Assistant**, BIO 125: Ecosystems of California, Prof. Harold Mooney, Stanford University. Assisted in lectures, led discussions and office hours, graded exams and presentations.
- 2009 **Teaching Assistant**, BIO 43: Plant Biology, Evolution, and Ecology, Prof. Mary Beth Mudgett, Stanford University. Led student sections reviewing course material; designed and graded exams.

LEADERSHIP & SERVICE

- 2017 **USDA-NIFA Fellowships Program Review Panel**, Washington, DC.
- 2017 **Session Chair, Whole Plant Ecology/Ecophysiology**, ASPB Annual Meeting, Honolulu, HI.
- 2017 **Biogeosciences Graduate Student Awards Committee**, Boston University, Boston, MA.
- 2015 **Poster Session Organizer**, Harvard Plant Biology Symposium, Plants in a changing world: from leaves to ecosystems, Harvard University and Arnold Arboretum, Boston, MA.
- 2003 – 2007 **Men's Varsity Basketball Team**, Cornell University, Team Captain 2006-2007
First-Team Academic All-American, ESPN The Magazine, 2007
- 2006 – 2007 **Sphinx Head Senior Honor Society**, Cornell University
- 2006 **Student Athlete Representative**, Cornell University Board of Trustees and University Council
- Ongoing **Peer Reviewer for Scientific Journals**: Current Biology; New Phytologist; Plant Cell; Plant, Cell & Environment; Plant Physiology; Plant Science; Scientific Reports; Tree Physiology.