

J. Steen Hoyer

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- 2017–present **Postdoctoral associate**, laboratory of Siobain Duffy, Rutgers U.
High-throughput sequence analysis of experimentally evolved cassava mosaic virus populations in the laboratory of in collaboration with groups at NC State University, BecA-ILRI Hub (Kenya), and elsewhere.
See CassavaVirusEvolution.org
- 2017 **PhD**, Computational and systems biology, Washington U. St. Louis.
Thesis research in the laboratory of James C. Carrington at the Donald Danforth Plant Science Center (DDPSC; 2011 to 2017) and Oregon State University (2009 to 2011), supported by an NSF graduate research fellowship.
- Used high-throughput automated yeast 1-hybrid assays to identify upstream regulators of *ARGONAUTE* genes
 - Characterized transcription factor binding sites using histological reporter gene assays and transgenic complementation tests, enabled by high-throughput Raspberry Pi timelapse imaging.
 - Collaborative project with several laboratories at the DDPSC and the labs of Steve A. Kay (USC), and Martin F. Yanofsky (UCSD).
- 2009 **BA**, Biology and chemistry, Swarthmore College.
Honors thesis research in the laboratory of Nicholas J. Kaplinsky, supported by an HHMI summer research fellowship. Other projects with Amy Cheng Vollmer (microarray experiment) and Ed Gooding (spectroscopy).
- 2006, 2007 **Lab assistant**, University of Delaware.
Contributions to several projects on plant immune receptors in the laboratory of Blake C. Meyers, primarily using sequence analysis and degenerate PCR.

Awards

- 2018 Catalyzing new research partnerships travel award from CRDF Global (\$20K). This award enabled myself and NCSU graduate student A.E. Dye to travel to the BecA-ILRI Hub in Nairobi, Kenya, for collaborative pilot studies of cassava brown streak virus evolution.

- 2016 Ko Shimamoto travel award; Poster presentation at International Society for Molecular Plant-Microbe Interactions (MPMI) Congress.
- 2015 Student travel award; Poster presentation and minitalk at University of Missouri Interdisciplinary Plant Group Annual Symposium.
- 2014 Poster award, DDPSC scientific retreat.
- 2010–2013 NSF graduate research fellowship.
- 2010 Anita S. Summers travel award; Poster presentation at Gordon Research Conference on Plant Molecular Biology.

Teaching and professional activities

- 2011–present *Ad hoc* reviewer, BMC Genomics, Bioinformatics, Gene, and PeerJ. Assisted others with reviews for Plant Cell and PNAS.
- 2011–2017 DDPSC Committee on Scientific Training and Mentoring
 1. Taught informal course on the R Statistical Computing Environment
 2. Organized and led survey and Responsible Conduct of Research session at scientific retreat
 3. Started and organized journal club
 4. Organized new faculty welcome party and other social events
 5. Organized interview workshop/discussion with Florian Bruhns (KWS Inc.)
- 2011–2012 DDPSC Safety Committee
- 2011 Teaching assistant, Techniques in molecular and cellular biology (MCB 525), Oregon State University.
I provided hands-on support for this graduate-level two-week laboratory course, and designed and taught a bioinformatics module. Among other projects, students sequenced, assembled, annotated, and compared four mycobacteriophage genomes
- 2007–2009 Teaching assistant, Chemistry Department, Swarthmore College. Supervised biochemistry lab sections (two semesters), ran organic chemistry clinics (three semesters), and graded environmental chemistry assignments (one semester)

Publications

- (1) D. E. Perez, J. S. Hoyer (co-first author), A. I. Johnson, Z. R. Moody, J. Lopez and N. J. Kaplinsky, "BOBBER1 Is a noncanonical *Arabidopsis* small heat shock protein required for both development and thermotolerance", *Plant Physiology*, 2009, **151**, 241–252, DOI: 10.1104/pp.109.142125.
- (2) N. Fahlgren, S. R. Bollmann, K. D. Kasschau, J. T. Cuperus, C. M. Press, C. M. Sullivan, E. J. Chapman, J. S. Hoyer, K. B. Gilbert, N. J. Grünwald and J. C. Carrington, "*Phytophthora* have distinct endogenous small RNA populations that include short interfering and microRNAs", *PLOS ONE*, 2013, **8**, e77181, DOI: 10.1371/journal.pone.0077181.
- (3) H. Garcia-Ruiz, A. Carbonell, J. S. Hoyer, N. Fahlgren, K. B. Gilbert, A. Takeda, A. Giampetruzzi, M. T. Garcia Ruiz, M. G. McGinn, N. Lowery, M. T. Martinez Baladejo and J. C. Carrington, "Roles and programming of *Arabidopsis* ARGONAUTE proteins during Turnip mosaic virus infection", *PLOS Pathogens*, 2015, **11**, e1004755, DOI: 10.1371/journal.ppat.1004755.
- (4) M. A. Gehan, N. Fahlgren, A. Abbasi, J. C. Berry, S. T. Callen, L. Chavez, A. N. Doust, M. J. Feldman, K. B. Gilbert, J. G. Hodge, J. S. Hoyer, A. Lin, S. Liu, C. Lizárraga, A. Lorence, M. Miller, E. Platon, M. Tessman and T. Sax, "PlantCV v2: Image analysis software for high-throughput plant phenotyping", *PeerJ*, 2017, DOI: 10.7717/peerj.4088.
- (5) J. Tovar, J. S. Hoyer (co-first author), A. Lin, A. Tielking, S. Callen, E. Castillo, M. Miller, M. Tessman, N. Fahlgren, J. C. Carrington, D. A. Nusinow and M. A. Gehan, "Raspberry Pi powered imaging for plant phenotyping", *Applications in Plant Sciences*, 2018, DOI: 10.1002/aps3.1031.
- (6) J. S. Hoyer, J. L. Pruneda-Paz, G. Breton, M. A. Hassert, E. E. Holcomb, H. Fowler, K. M. Bauer, J. Mreen, S. A. Kay and J. C. Carrington, "Functional dissection of the *ARGONAUTE7* promoter", *Plant Direct*, 2019, **3**, e00102, DOI: 10.1002/pld3.102.

Note that the author list for this last publication includes five undergraduate mentees.

See my Google Scholar profile (AWRhHIsAAAAJ) for citation data and my ORCID page (0000-0002-1338-8900) for a list of datasets shared via Zenodo.org

Three short letters I wrote were published in *Science*, on evaluation of scientists (352, p. 30), microbiology research for indoor farming (352, p. 889), and postdoctoral training (360, p. 27)