

Stephen Cohen

Curriculum vitae

Colorado State University
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EDUCATION

Ph.D., Cell and Molecular Biology

Colorado State University

Aug. 2013–Apr. 2019

Fort Collins, CO

B.Sc., Cellular and Organismal Biology, *Summa Cum Laude*

Lock Haven University of Pennsylvania

Aug. 2009–Jul. 2013

Lock Haven, PA

RESEARCH AND LABORATORY EXPERIENCE

Colorado State University

Department of Bioagricultural Sciences and Pest Management

Graduate Research Assistant; Advisor: Jan E. Leach

Fort Collins, CO

Jan. 2014–Jun. 2019

Dissertation: "How stress affects rice: a characterization of the rice transcriptome during single and simultaneous abiotic and biotic stresses"

- Characterized the rice core stress response transcriptome using computational methods
- Characterized the rice response to simultaneous disease and heat stress using computational, molecular, greenhouse, and growth chamber methods
- Characterized rice resistance locus *Xo1* using molecular cloning and plant disease assays

Colorado State University

Department of Biology

Rotation Student; Provisional Advisor: June I. Medford

Fort Collins, CO

Aug.–Dec. 2013

- Cloned and tested nanoluciferase-based reporter for Arabidopsis protoplasts

Pennsylvania Department of Agriculture

Plant Pathology Department

Laboratory Technician; Program Manager: Ruth A. Welliver

Harrisburg, PA

May–Aug. 2012

- Monitored crop orchards for plum pox virus using ELISA and qRT-PCR

North Carolina State University

Department of Microbiology

REU Student in Synthetic Biology; Faculty Mentor: Amy M. Grunden

Raleigh, NC

Jun.–Aug. 2011

- Characterized an archaeal lipase using molecular cloning and *in vitro* recombinant expression

REFEREED PUBLICATIONS

Cohen SP, JE Leach. 2019. Abiotic and biotic stress induce a core transcriptome response in rice. *Sci. Rep.* 9:6273. doi: 10.1038/s41598-019-42731-8

Huerta AI, SP Cohen, V Verdier, JE Leach. 2019. Molecular genetics of bacterial blight and bacterial leaf streak and their impact on future control strategies. In: Rice diseases: Biology and selected management practices. T. W. Mew, H. Hibino, S. Savary, C. M. Vera Cruz, R. Opulencia and G. P. Hettel, eds. International Rice Research Institute, Los Baños, Philippines. PDF E-book: <http://rice-diseases.irri.org>

Cohen SP, JM Jacobs, JE Leach. 2018. Spotlight: *In planta* bacterial transcriptomics predict plant disease outcomes. *Trends Plant Sci.* 23(9): 751-753. doi: 10.1016/j.tplants.2018.06.008

Cohen SP, H Liu, CT Argueso, A Pereira, C Vera Cruz, V Verdier, JE Leach. 2017. RNA-Seq analysis reveals insight into enhanced rice *Xa7*-mediated bacterial blight resistance at high temperature. *PLOS One* 12(11): e0187625. doi: 10.1371/journal.pone.0187625.

Triplett LR*, SP Cohen*, C Heffelfinger, CL Schmidt, C Tekete, V Verdier, AJ Bogdanove, JE Leach. 2016. A resistance locus in the American heirloom rice variety Carolina Gold Select is triggered by diverse TAL effectors and is effective against African strains of *Xanthomonas oryzae* pv. *oryzicola*. *Plant J.* 87(5): 472-83. doi: 10.1111/tpj.13212. *co-first authors

HONORS AND AWARDS

I.E. Melhus Graduate Student Symposium Award Recipient <i>APS Foundation, Plant Health 2019</i>	Mar. 2019
William M. Brown Professional Development Award Recipient <i>Department of Bioagricultural Sciences and Pest Management</i>	May 2018
Exploring Career Opportunities Initiative Grant Recipient <i>CSU Graduate School</i>	Feb. 2018
Frank Hawksworth Memorial Scholarship Recipient <i>Department of Bioagricultural Sciences and Pest Management</i>	Dec. 2017
Sustainability Leadership Fellow <i>CSU School of Global Environmental Sustainability</i>	Aug. 2017– May 2018
Phytobiomes Poster Award Recipient <i>Phytobiomes Journal, APS Annual Meeting 2017</i>	Aug. 2017
J. Artie and Arra Browning Student Travel Award Recipient <i>APS Foundation, APS Annual Meeting 2017</i>	Aug. 2017
NSF Travel Award Recipient for Rice: Research to Production Course <i>International Rice Research Institute, Los Baños, Philippines</i>	Aug. 2015
College of Arts and Sciences Highest QPA Award Recipient <i>Lock Haven University of Pennsylvania</i>	Jun. 2013
NSF Research Experience for Undergraduates Student <i>North Carolina State University</i>	Jun.–Aug. 2011
CRC Press Chemistry Achievement Award Recipient <i>Taylor & Francis Group</i>	Oct. 2010

INVITED TALKS

- Cohen SP**, Liu H, Verdier VM, Leach JE. 2018. Rice hormone response is involved in the temperature-dependent function of Xa7-mediated bacterial blight resistance. International Congress on Plant Pathology 2018, Boston, MA.
- Cohen SP**, Zeng Q, Jacobs JM. 2018. Designing artificial TALEs. In: WORKSHOP: Effector-Detector Plants: Teaching & Research Tools for Monitoring Pathogen Virulence Live. International Congress on Plant Pathology 2018, Boston, MA.
- Cohen SP**, H Liu, V Verdier, CT Argueso, JE Leach. 2016. Transcriptomic analysis reveals key genetic responses involved in the rice response to simultaneous abiotic (high temperature) and biotic (bacterial blight) stresses. Keystone Symposium: Phytobiomes: from Microbiomes to Ecosystems, Santa Fe, NM.

POSTER PRESENTATIONS

- Cohen SP**, Leach JE. 2018. Rice bacterial blight resistance at high temperature suppresses the abiotic response. 6th *Xanthomonas* Genomics Conference & 2nd Annual EuroXanth Conference 2018, Halle (Saale), Germany.
- Cohen SP**, H Liu, CT Argueso, C Vera Cruz, V Verdier, JE Leach. 2017. Rice plants exhibiting bacterial blight resistance at high temperature suppress abiotic response. APS Annual Meeting, San Antonio, TX.
- Huerta A, L Triplett, **S Cohen**, C Heffelfinger, C Schmidt, V Verdier, A Bogdanove, JE Leach. 2016. Exception to the norm: Resistance locus *Xo1* is triggered by inactive TAL effectors. Keystone Symposium: Phytobiomes: From Microbiomes to Ecosystems, Santa Fe, NM.
- Cohen SP**, LR Triplett, JE Leach. 2016. A resistance mechanism from the American heirloom rice variety Carolina Gold Select is dependent on TAL effector central repeat region composition, but not the repeat variable diresidues. IS-MPMI XVII Congress, Portland, OR.
- Triplett L, V Verdier, M Alexander, **S Cohen**, J Craven, A Bogdanove, J Leach. 2014. A novel rice resistance phenotype to *Xanthomonas oryzae* TAL effectors does not require the effector transcriptional activation domain. APS-CPS Joint Meeting, Minneapolis, MN.
- Cohen S**, R Killens, A Grunden. 2011. Recombinant Expression of a Thermostable Lipase from *Sulfolobus solfataricus* P2 to Augment Production of Microalgal-derived Biofuel. Summer NC State Undergraduate Research Symposium, Raleigh, NC.

TEACHING AND MENTORING

Teaching Assistant Mentor , Colorado State University <i>Peer mentor to new GTAs in the Biology Department</i>	Aug.–Dec. 2014
Student Research Mentor , Colorado State University <i>Mentored 6 undergraduate and 2 high-school students in the lab</i>	Jul. 2014–Present
Graduate Teaching Assistant Lab Instructor , Colorado State University <i>Lab Instructor, Attributes of Living Systems, 3 semesters</i> <i>Lab Instructor, Cell Biology, 1 semester</i> <i>Recitation Instructor, Molecular Genetics, 1 semester</i>	Aug. 2013–Jul. 2015

PROFESSIONAL MEMBERSHIPS AND ACTIVITIES

International Congress on Plant Pathology , Invited Speaker <i>International Society for Plant Pathology</i>	Jul. 2018
Xanthomonas Genomics Conference , Participant	Jul. 2018
Big Data Workshop , Participant <i>CSU College of Agricultural Sciences</i>	Oct. 2017
Graduate Student Liaison Committee , Elected member <i>CSU Department of Bioagricultural Sciences and Pest Management</i>	2017–2018
American Phytopathological Society 2017 Annual Meeting , Participant	Aug. 2017
American Phytopathological Society , Member	2017–Present
Phytobiomes: From Microbes to Plant Ecosystems , Invited Speaker <i>Keystone Symposia on Molecular and Cellular Biology</i>	Nov. 2016
IS-MPMI XVII Congress , Participant <i>International Society for Molecular-Plant Microbe Interactions</i>	Jul. 2016
International Society for Molecular Plant-Microbe Interactions , Member	2016–Present
Rice: Research to Production Course , Participant <i>International Rice Research Institute</i>	Aug. 2015
NSF GAUSSI , Inaugural Participant <i>Transdisciplinary Training Program in Biosensing and Computational Biology</i>	2015–2016
Cell and Molecular Biology Peer Mentor Club , Co-founder and Member <i>Colorado State University, Cell and Molecular Biology Graduate Program</i>	2014–2018

ADDITIONAL QUALIFICATIONS

Communicating Science to Journalists Training <i>COMPASS Science Communication Workshop</i>	Aug. 2017
Rice: Research to Production Certificate <i>International Rice Research Institute</i>	Aug. 2015

PUBLIC ENGAGEMENTS

- Member of plant pathology outreach group (“Plants Get Sick Too”)**: from 2017–2018, I participated with an outreach group that gives interactive presentations with K-12 students to educate about plant diseases.
- Blogger for the CSU School of Global Environmental Sustainability**: Cohen SP. 2018. “Is the glass of orange juice half empty?” Human Nature: Human Views on the Natural World.
<http://blog.sustainability.colostate.edu/?q=cohen>

OTHER ACTIVITIES

Linux Server Administrator for CSU Department of Bioagricultural Sciences and Pest Management:

From 2018–2019, I administrated the departmental server and helped department members access and technological resources.

Department Representative in Bioinformatics Job Searches: In 2018, I assisted with interviews in job searches for bioinformatics positions in the CSU College of Agricultural Sciences, including Bioinformatics Consultant and IT Coordinator positions.

Organizer of Plant Pathology Journal Club: from 2015–2018, I helped organize and participated in a scientific paper discussion group with student and post-doc members.

Social Chair of the BSPM Graduate Student Liaison Committee: I served as the organizer of social events and professional development workshops for BSPM graduate students in the 2017–2018 school year.

Judge for CSU ERHS450 “Introduction to Radiation Biology” Poster Session: In 2017, I evaluated and gave feedback for student posters for an upper level undergraduate course at CSU.

Co-founder of the CSU Cell and Molecular Biology Peer Mentor Club: I co-founded a multi-disciplinary graduate student organization in 2014. This group brings together graduate students and post-docs from all colleges of the university for support, career development advice, and the exchange of scientific ideas. In 2018, I helped secure funds for the group with a proposal to the CSU Graduate School for the “Exploring Career Opportunities Initiative,” which earned \$1000 to fund student training/career development events.