

Thomas J. Poorten

Davis, California
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RESEARCH INTERESTS

Bioinformatics, Host-Pathogen Interactions, Evolutionary Genomics

EDUCATION

University of California, Berkeley Berkeley, CA
Ph.D., Environmental Sciences, Policy, & Management, December 2015
Advisor: Dr. Erica Bree Rosenblum

Wake Forest University Winston-Salem, NC
M.S., Biology, May 2008, GPA: 3.77
Advisor: Dr. Ray Kuhn
B.S., Biology, May 2006, GPA: 3.37

RESEARCH SKILLS

- **Computational biology data analysis:** genome assembly utilizing multiple data types, snakemake workflow development, SNP calling, alignment, annotation, transcriptomics, gene expression, custom scripts for SNP and haplotype analysis
- **Statistical data analysis and visualization:** regression models; parametric and permutation significance tests; GLMM; multivariate statistics (e.g. clustering, PCA); custom R plotting with ggplot
- **Bioinformatics scripting:** expert in R; proficient in Unix, Python
- **Extensive molecular biology experience:** PCR, genome library prep, ELISA
- **Mentoring:** I have trained numerous undergrads, graduate students, and post-docs in research methods

WORK & TEACHING EXPERIENCE

University of California, Davis, 2016-present Davis, CA
Bioinformatics Postdoctoral Scholar, Strawberry Breeding Program
Mentor: Dr. Steven J. Knapp

Invitae Corporation, June-October 2015 San Francisco, CA
Bioinformatics Consultant (part-time) – providing next-generation sequence analysis services for assay development

University of California, Berkeley, 2014-2015 Berkeley, CA
Graduate Student Instructor in:
ESPM 100 ES – Introduction to the Methods of Environmental Science

University of Idaho, 2008-2010

Moscow, ID

Scientific Aide - laboratory of Dr. Erica Bree Rosenblum

- Conducting research on host-pathogen interaction of amphibians and *Batrachochytrium dendrobatidis*
- Co-authoring research manuscripts and review articles
- Managing lab operations (purchasing, equipment maintenance, lab safety)

Wake Forest University, 2006-2008

Winston-Salem, NC

Teaching Assistant in:

Comparative Physiology Lab, 3 semesters

Developmental Biology Lab, 1 semester

PUBLICATIONS

Edger PP, Van Buren R, Colle M, **Poorten TJ**, ..., Knapp SJ. 2017. Single-molecule sequencing and optical mapping yields an improved genome of woodland strawberry (*Fragaria vesca*) with chromosome-scale contiguity. Gigascience gix124.

Poorten TJ and EB Rosenblum. 2017. Population genetic structure of the endangered Sierra Nevada yellow-legged frog (*Rana sierrae*) in Yosemite National Park based on multi-locus nuclear markers. Conservation Genetics 18(4): 731-44.

Poorten TJ and EB Rosenblum. 2016. Comparative study of host response to chytridiomycosis in susceptible and resistant toad species. Molecular Ecology 25(22): 5663-79.

Poorten TJ, Stice-Kishiyama M, Briggs CJ, and EB Rosenblum. 2016. Mountain yellow-legged frogs do not produce antibodies in response to immunization with *Batrachochytrium dendrobatidis*. Journal of Wildlife Disease 52(1): 154-8.

Refsnider JM*, **Poorten TJ***, Langhammer PF, Burrowes PA, and EB Rosenblum. 2015. Genomic Correlates of Virulence Attenuation in the Deadly Amphibian Chytrid Fungus, *Batrachochytrium dendrobatidis*. G3: Genes|Genomes|Genetics. 5:2291-8.

* Authors contributed equally to this work

Piovia-Scott J, Pope K, Worth SJ, Rosenblum EB, **Poorten TJ**, Refsnider J, Rollins-Smith LA, Reinert LK, Wells HL, Rejmanek D, Lawler S, and J Foley. 2014. Correlates of virulence in a frog-killing fungal pathogen: Evidence from a California amphibian die-off. ISME 9(7): 1570-8.

Rosenblum, EB, James TY, Zamudio KR, **Poorten TJ**, Ilut D, Rodriguez D, Eastman J, Richards-Hrdlicka K, Joneson S, Jenkinson TS, Longcore J, Parra Olea G, Toledo LF, Arellano ML, Tovar EM, Restrepo S, Flechas SV, Berger L, Briggs CJ, and JE Stajich. 2013. Complex history of the amphibian-killing chytrid fungus revealed with genome resequencing data. Proceedings of the National Academy of Sciences 110(23): 9385-9390

Rosenblum EB, **Poorten TJ**, Joneson S, and M Settles. 2012. Substrate-Specific Gene Expression in *Batrachochytrium dendrobatidis*, the Chytrid Pathogen of Amphibians. PLoS ONE 7(11): e49924.

Rosenblum EB, **Poorten TJ**, Settles M, and GK Murdoch. 2012. Only skin deep: shared genetic response to the deadly chytrid fungus in endangered frogs. Molecular Ecology 21(13): 3110-3120 *from the cover article, selected by faculty of 1000

Robertson JM, Hoversten K, Grundler M, Hews D, **Poorten TJ**, and EB Rosenblum. 2011. Colonization of novel white sands habitat associated with changes in lizard anti-predator behaviour. Biological Journal of the Linnean Society. 103(3): 657–667.

Rosenblum EB, Voyles J, **Poorten TJ**, and JE Stajich. 2010. The Deadly Chytrid Fungus: A Story of an Emerging Pathogen. PLoS Pathogens 6(1): e1000550.

Rosenblum EB, Fisher MC, James TY, Stajich JE, Longcore JE, Gentry LR, and **TJ Poorten**. 2009. A Molecular Perspective on the Biology of the Emerging Pathogen *Batrachochytrium dendrobatidis*. Diseases of Aquatic Organisms. 92: 131-147.

Rosenblum EB, **Poorten TJ**, Settles M, Murdoch GK, Robert J, Maddox N, and MB Eisen. 2009. Genome-Wide Transcriptional Response of *Silurana (Xenopus) tropicalis* to Infection with the Deadly Chytrid Fungus. PLoS ONE 4(8): e6494.

Poorten TJ and RE Kuhn. 2009. Maternal transfer of antibodies to eggs in *Xenopus laevis*. Developmental and Comparative Immunology 33(2): 171-175.

PRESENTATIONS

Evolution 2014. June 24, 2014. Raleigh, NC. “Understanding variation in susceptibility and host response to the amphibian-killing chytrid fungus: a case study in two bufonid species.” **Oral Presentation.**

Guest Lecture. April 26, 2013. UC Berkeley Undergraduate Course – *Microbial Ecology*. “Ecological genomics of *Batrachochytrium dendrobatidis*: Probing the genome of the deadly chytrid pathogen.” **Oral Presentation.**

Society for Integrated & Comparative Biology Annual Meeting. January 6, 2013. San Francisco, CA. Workshop: “Genomics for non-model organisms: custom microarray development and analysis.” **Co-taught workshop** with Dr. Matt Settles

Integrated Research Challenges in Environmental Biology. Emerging Wildlife Diseases: Threats to Amphibian Biodiversity. November 10-11, 2012. Arizona State University, Tempe, AZ. “Comparing disease outcome and host response in two bufonid species following lab infection with Bd.” **Oral Presentation.**

University of Idaho Innovation Showcase. April 28, 2011. “Genomic Approaches to Understanding Frog-Chytrid Interactions.” **Oral Presentation.**

Fungal Genetics Conference. March 15-19, 2011. “Examining the Molecular Basis of Pathogenesis of *Batrachochytrium dendrobatidis*: A Functional Genomics Approach.” **Poster Presentation.**

Integrated Research Challenges in Environmental Biology. Emerging Wildlife Diseases: Threats to Amphibian Biodiversity. November 6-7, 2010. Arizona State University, Tempe, AZ. “Only skin deep: shared genetic response to the deadly chytrid fungus in endangered frogs.” **Oral Presentation.**

Guest Lecture. December 8, 2010. Univ. of Idaho Undergraduate Course – *Introduction to Herpetology*. “Only skin deep: shared genetic response to the deadly chytrid fungus in endangered frogs.” **Oral Presentation.**

Integrated Research Challenges in Environmental Biology. Emerging Wildlife Diseases: Threats to Amphibian Biodiversity. November 13-14, 2009. Arizona State University, Tempe, AZ. “Genome-wide transcription changes of *Batrachochytrium dendrobatidis* in responses to different substrates.” **Oral Presentation.**

AWARDS

UC Berkeley Outstanding Graduate Student Instructor Award (2015)

UC Berkeley ESPM Organisms & Environment Division Summer Fellowship (2014)

UC Berkeley Graduate Division Travel Grant (for attending Evolution 2014)

UC Berkeley Graduate Division Summer Grant (2013)

UC Natural Reserve Graduate Student Research Grant via Valentine Eastern Sierra Reserve (summer 2013)

University of Idaho Graduate Research Fellowship in Bioinformatics and Computational Biology (8/2011-5/2012)

University of Idaho Graduate Student Association: Travel Award (for attending Fungal Genetics Conference - 3/2011)

Undergraduate Summer Research Fellowship, Wake Forest University (Summer 2005)