

# Allison Q. Byrne, PhD

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she/they

## CURRENT POSITION

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Oct. 2021 Postdoctoral Scholar, **Resilience Institute Bridging Biological Training and Research (RIBBiTR)**.  
**University of California, Berkeley, CA**  
Department of Environmental Science, Policy & Management  
Supervisor: Dr. Erica Bree Rosenblum

## PROFESSIONAL PREPARATION & EDUCATION

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2020 - 2021 Postdoctoral Fellow, **Smithsonian Conservation Biology Institute**, Washington, D.C.  
Supervisors: Dr. Brian Gratwicke, Dr. Carly Muletz Wolz, Dr. Roberto Ibáñez

2014 - 2020 Ph.D. from the Department of Environmental Science, Policy & Management  
**University of California, Berkeley, CA**  
Advisor: Dr. Erica Bree Rosenblum  
Affiliated Graduate Student at the Museum of Vertebrate Zoology

2008 - 2013 B.S. in Environmental Science, Concentration: Ecology & Conservation  
**Drexel University, Philadelphia, PA**  
Graduated *summa cum laude* from the Pennoni Honors College  
Cumulative GPA: 3.91

## PUBLICATIONS

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2022 **Byrne, A.Q.**, Waddle, A.W., Jaeger, J.R., Richards-Zawacki, C.L., Voyles, J., Rosenblum, E.B. *Host Species is Linked to Pathogen Genotype for the Amphibian Chytrid Fungus (*Batrachochytrium dendrobatidis*) in the USA*. *PLOS ONE*. 17(3), p.e0261047.

2022 Basanta, M.D., Ávila-Akerberg, V.D., **Byrne, A.Q.**, Castellanos-Morales, G., González Martínez, T.M., Maldonado-López, Y., G., Rosenblum, E.B., Suazo, I., Parra-Olea, G., Rebollar, E.A. *The fungal pathogen *Batrachochytrium salamandrivorans* is not detected in wild and captive amphibians from Mexico*. *PeerJ*. 10:e14117.

2022 Basanta, M.D., Rebollar, E.A., García-Castillo, M.G., Rosenblum, E.B., **Byrne, A.Q.**, Piovia-Scott, J., Parra-Olea, G. *Genetic variation of *Batrachochytrium dendrobatidis* is linked to skin bacterial diversity in the Pacific treefrog *Hylliola regilla* (*hypochondriaca*)*. *Environmental Microbiology*, 24(1), 494-506.

2021 **Byrne, A.Q.**, Richards-Zawacki, C.L., Voyles, J., Bi, K., Ibáñez, R., Rosenblum, E.B. *Whole exome sequencing identifies conservation units and the potential for genetic rescue in critically endangered Panamanian golden frogs*. *Global Change Biology*; 27(1), 50-70.

2021 Basanta, M.D., **Byrne, A.Q.**, Rosenblum, E.B., Piovia-Scott, J., Parra Olea, G. *Early presence of *Batrachochytrium dendrobatidis* in Mexico with a contemporary dominance of the global panzootic lineage*. *Molecular Ecology*; 30(2), 424-437.

2021 Rothstein, A.P., **Byrne A.Q.**, Knapp, R.A., Briggs, C.J., Voyles, J., Richards-Zawacki, C.L., Rosenblum, E.B. *Divergent regional evolutionary histories of a devastating global amphibian pathogen*. *Proceedings of the Royal Society B*; 288(1953), 20210782.

2021 Sheets, C.N., Schmidt, D.R., Hurtado, P.J., **Byrne, A.Q.**, Rosenblum, E.B., Richards-Zawacki, C.L., Voyles, J. *Thermal Performance Curves of Multiple Isolates of *Batrachochytrium dendrobatidis*, a Lethal Pathogen of Amphibians*. *Frontiers in Veterinary Science*, 8, p.648.

- 2020 Olivares-Miranda, M., Vredenburg, V.T., García-Sánchez, J.C., **Byrne, A.Q.**, Rosenblum, E.B., Rovito S.M. *Fungal infection, decline and persistence in the only obligate troglodytic Neotropical salamander*. PeerJ; 8:e9763
- 2020 Lambert, M.R., Womack, M.C., **Byrne, A.Q.**, Hernández-Gómez, O.H., Noss, C.F., Rothstein, A.R., Blackburn, D.C., Collins, J.P., Crump, M.L., Koo, M.S., Nanjappa, P., Rollins-Smith, L., Vredenburg, V.T., Rosenblum, E.B. *Comment on "Amphibian fungal panzootic causes catastrophic and ongoing loss of biodiversity"*. Science; 367(6484).
- 2020 Hernández-Gómez, O.H., **Byrne, A.Q.**, Gunderson, A.R., Jenkinson, T.S., Noss, C.F., Rothstein, A.R., Womack, M.C., Rosenblum, E.B. *Invasive vegetation affects amphibian skin microbiota and body condition*. PeerJ; 8:e8549
- 2019 **Byrne, A.Q.**, et al. (28 additional co-authors), Erica Bree Rosenblum. *Cryptic diversity of a widespread global pathogen reveals expanded threats to amphibian conservation*. Proceedings of the National Academy of Sciences; 116(41), 20382-20387.
- 2018 **Byrne, A.Q.**, Poorten, T., Voyles, J., Willis, C.K.R., Rosenblum, E.B. *Opening the file drawer: Unexpected insights from a chytrid infection experiment*. PLOS ONE; 13(5): e0196851.
- 2018 Voyles, J., Woodhams, D.C., Saenz, V., **Byrne, A.Q.**, Perez, R., Rios-Sotelo, G., Ryan, M.J., Bletz, M., Sobell, F.A., McLetchie, S., Reinert, L., Rosenblum, E.B., Rollins-Smith, L.A., Ibáñez, R., Ray, J.M., Griffith, E.J., Ross, H., Richards-Zawacki, C.L. *Shifts in disease dynamics in a tropical amphibian assemblage are not due to pathogen attenuation*. Science; 359(6383).
- 2017 **Byrne, A.Q.**, Rothstein, A., Poorten, T. J., Erens J., Settles M. L., & Rosenblum, E. B. *Unlocking the story in the swab: A new genotyping assay for the amphibian chytrid fungus *Batrachochytrium dendrobatidis**. Molecular Ecology Resources; 17(6), 1283-1292.
- 2016 **Byrne, A.Q.**, Voyles, J., Rios-Sotelo, G., & Rosenblum, E. B. *Insights from Genomics into Spatial and Temporal Variation in *Batrachochytrium dendrobatidis**. Progress in Molecular Biology and Translational Science; 142, 269-290.
- In Review
- 2022 **Byrne, A.Q.**, Rothstein, A.P. (co-first authors), Smith, L., Kania, H., Knapp R.A., Boiano, D.M., Briggs, C.J., Backlin, A.R., Fisher, R.N., Rosenblum E.B. *Revisiting conservation units for the endangered mountain yellow-legged frog species complex (*Rana muscosa*, *Rana sierrae*) using multiple genomic methods*. Submitted to Conservation Genetics.
- 2022 Saenz, V., **Byrne, A.Q.**, Altman, K., Brannelly, L., Hammond, T., Ohmer, M., Rosenblum, E.B., Richards-Zawacki, C. *Understanding the landscape-level movement of an emerging wildlife pathogen*. Submitted to Journal of Animal Ecology.
- 2022 Ghose, S., Yap, T., **Byrne, A.Q.**, Sulaeman, H., Rosenblum, E.B., Chan-Alvarado, A., Chaukulkar, S., Greenbaum, E., Koo, M.S., Kouete, M.T., Lutz, K., McAloose, D., Moyer, A.J., Parra, E., Portik, D.M., Rockney, H., Zink, A., Blackburn D.C., Vredenburg, V.T. *Continent-wide recent emergence of a global pathogen in African amphibians*. Submitted to Frontiers in Conservation Science.

## **TEACHING, MENTORSHIP & OUTREACH**

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- 2022 Co-designed and taught Genetics of Amphibian Declines: A Course-based Undergraduate Research Experience (ESPM 139A) Fall semester at UC Berkeley
- 2022 Taught workshop on analyzing pathogen genetic data using reproducible workflows in Rstudio and Github at RIBBiTR team meeting, Pymatuning Field Station, University of Pittsburgh, PA
- 2022 Invited Guest Lecture for Landscape Ecology at Cal Poly Pomona

2019-2020	Mentor for Berkeley GiGS (Getting into Graduate School) Program
2019	GSI for ESPM50AC: Introduction to Culture & Natural Resource Management (Led discussion section)
2019	Volunteer Mentor for oSTEM national mentorship program
2019	Volunteer Student Mentor at the Joint Meeting of Ichthyologists and Herpetologists
2018-2020	Mentor for the Berkeley Connect program
2018	GSI for ESPM100ES: Methods in Environmental Science (Mentored students writing senior thesis proposals, led workshops)
2018	Guest Lecture in ESPM112: Microbial Ecology
2017	GSI for ESPM137: Landscape Ecology (Led computer-based lab section)
2016-2017	Volunteer for Bay Area Scientists in School outreach program
2016	Guest Lecture in ESPM98: <i>One Health for Action: Integrating Human, Animal, and Environmental Health</i>
2016-Present	Mentored 8 undergraduate students in laboratory techniques related to DNA extraction, PCR, R coding, and genetic data analyses. <i>Madeline Moore, Madeline Gregory, Shreeya Garg, Christina Meyer, Sylvia Targ, Courtney Hendrickson, Sean O'Neil, Ismena Jameau</i>

## PRESENTATIONS

(\*indicates invited seminar)

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2022	<i>A snapshot of Batrachochytrium dendrobatidis (Bd) genetic diversity across the continental United States.</i> Oral presentation given virtually at the Global Amphibian and Reptile Disease conference. August 8.
2021	<i>Host Species is Linked to Pathogen Genotype for the Amphibian Chytrid Fungus (Batrachochytrium dendrobatidis)</i> Oral presentation given virtually at the Joint Meeting of Ichthyologists and Herpetologists. July 22. Oral presentation given virtually at the Amphibian Pathogens Annual Meeting. 12 November.
2019	<i>Cryptic diversity of a widespread global pathogen reveals new threats for amphibian conservation.</i> Oral presentation given at the Joint Meeting of Ichthyologists and Herpetologists. July 26. Snowbird, UT.
2019	<i>The genetics of persistence in the Panamanian Golden Frog.</i> Oral presentation given at the Evolution Conference. June 22. Providence, R.I.
2019	* <i>Surviving chytrid: Dynamics of a globalized amphibian pathogen and how some frogs are fighting back.</i> Oral presentation given for the Wildlife & Conservation Biology Seminar Series at UC Berkeley. April 12. Berkeley, CA
2018, 2019	<i>Using whole exome sequencing to reveal genetic mechanisms of persistence in the critically endangered Panamanian golden frogs.</i> Oral presentation given at Ecology Society of America Conference. August 7, 2018. New Orleans, LA. Oral presentation given at Museum of Vertebrate Zoology Research Symposium. January 17, 2019. Berkeley, CA
2017	<i>Unlocking the story in the swab: A new genotyping assay for the amphibian chytrid fungus.</i> Oral presentation given at Evolution Conference. June 25. Portland, OR.

- 2013 *Hitching a Ride: Did Herpetologists Introduce the Deadly Chytrid Fungus to Southern Mexico?* Oral presentation given as part of the Museum of Vertebrate Zoology Lunch Seminar Series. September 4. Berkeley, CA.
- 2013 *Morphological Variation along an Elevation Gradient in Two Amphibian Species from Bioko Island, Equatorial Guinea.* Poster presented at the Drexel University College of Arts & Sciences Research Day. April 9. Philadelphia, PA.
- 2012 *Distribution and Abundance of Frogs at Moka Wildlife Center, Bioko Island, Equatorial Guinea.* Poster presented at the Drexel University College of Arts & Sciences Research Day. April 3. Philadelphia, PA.
- 2009 *Vegetation Survey of Southeastern Pennsylvania Wetlands to Assess Habitat Quality.* Poster presented at the Drexel University College of Arts & Sciences Research Day. April 6. Philadelphia, PA.

## GRANTS & AWARDS

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- 2021 “Lightning Award” for most scientifically-exciting talk – Amphibian Pathogens Annual Meeting
- 2021 Revive and Restore Catalyst Science Fund: \$211,000 awarded for postdoc stipend and research expenses at the Smithsonian Conservation Biology Institute
- 2020 Smithsonian Institution Postdoctoral Fellowship: \$50,400 awarded for 1-year postdoctoral stipend
- 2019 Winner of Henri Seibert Competition for Best Student Presentation in Conservation – Joint Meeting of Ichthyologists and Herpetologists, Snowbird, UT
- 2019 Outstanding Graduate Student Instructor Award – UC Berkeley
- 2019 Best Student Presentation – Museum of Vertebrate Zoology Research Symposium
- 2018 Bob Lane and Sandy Purcell Graduate Support Fund (College of Natural Resources, UC Berkeley): Awarded for Research Expenses - \$1500
- 2018 UC Berkeley MVZ Wake Fund: Awarded for Research Expenses - \$1000
- 2017 Oliver Lyman Fund for Wildlife Research, ESPM Dept. UC Berkeley - \$1500
- 2017 UC Berkeley MVZ Wilhelm Martens: Awarded for Research Expenses - \$1500
- 2016 UC Berkeley MVZ Wake Fund: Awarded for Research Expenses - \$2000
- 2015 National Science Foundation Graduate Research Fellowship - \$102,000
- 2014 UC Berkeley ESPM Starter Grant: Awarded for Research Expenses - \$1000
- 2012 Benjamin A. Gilman International Scholarship: Awarded for Study Abroad to Bioko Island, Equatorial Guinea – \$4000
- 2012 Drexel University Study Abroad Scholarship: Awarded for Study Abroad to Bioko Island, Equatorial Guinea – \$1000
- 2008 – 2013 A.J. Drexel Scholarship awarded by Drexel University – \$14,500 per quarter

## ACADEMIC SERVICE

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- 2019 Served as graduate student representative for faculty search committee in ESPM department at UC Berkeley.
- 2019 Served on the graduate student admissions committee for ESPM department at UC Berkeley.

- 2017-2018 Reviewer for ESPM Starter Grant. Allocated \$20,000 in research funds to first-year graduate students in ESPM by judging submitted proposals.
- 2017-Present Reviewed manuscripts for Microbial Ecology, Animal Conservation, Conservation Genetics, Evolutionary Applications, PLOS ONE, Hydrobiologia, and Microbiology
- 2017-Present Member of Amphibiaweb guiding committee

## RELEVANT WORK EXPERIENCE

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- 2016 – 2018 Lab Manager Rosenblum Lab, UC Berkeley, CA  
 Inventoried, stocked, and organized molecular lab.  
 Onboarded and trained new graduate and undergraduate students.  
 Ensured compliance with environmental health & safety measures.
- 2013 – 2014 GIS Analyst Home Junction, Inc. San Diego, CA  
 Digitized neighborhoods and school attendance areas in ArcGIS.
- 2013 VertNet Intern Museum of Vertebrate Zoology. UC Berkeley.  
 Designed an independent research project using museum data to study the spread of Chytrid fungus in Central American amphibians.
- 2011 – 2012 Watershed Sciences Co-op Philadelphia Water Department. Philadelphia, PA  
 Lead a team of two in collecting field data for various stream studies. Developed and implemented a stormwater basin inspection plan.
- 2010 Environmental Science Student Intern Federal Aviation Administration. William J. Hughes Technical Center, Egg Harbor City, NJ  
 Completed a vegetation survey of the base's 5000+ acres using ArcPad. Designed a presentation on stormwater and pollution. Assisted various biologists with field work including bat, butterfly, and snake surveys.