Iara Lacher, Ph. D.

Research Associate, Smithsonian Conservation Biology Institute
President/Principal, Conservation Futures
Owner, Seven Bends Nursery
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SUMMARY

Interdisciplinary research ecologist with experience working in complex issues of sustainability and resource use. Skilled in quantitative methods in landscape-scale modeling of land use change/climate change and impacts on ecological function, biodiversity, and ecosystem services. Demonstrated history of effective collaboration with academics and practitioners, including the co-production of science with regional stakeholders. Experienced in methods of social science including surveying, formal expert solicitation, structured decision making, and strategic planning. Vast knowledge of native plants and contribution of flora to regional biodiversity.

CURRENT POSITIONS

Research Associate, Smithsonian Conservation Biology Institute, Front Royal, VA (June 2021-present)

- Collaborative research on management of natural resources, traditional conservation design, and ecological restoration approaches for species of conservation and management concern

Landscape Ecologist / National Native Plant Expert, National Center for Appropriate Technology (June 2021-present)

- Serve as native plant expert for restoration efforts in new or existing solar fields
- Research focused on ecological and social benefits of agri-solar approaches

President/Principal, Conservation Futures LLC (April 2021-present)
Providing expert consulting to non-profits, agencies, and corporations in sustainable land and resource use, biodiversity conservation, and the co-production of science with regional stakeholders and communities.

- Land use modeling, species distribution modeling, GIS
- Scenario planning, strategic planning, structured decision making, formal expert solicitation for non-profits and conservation-minded corporations
- Translating theoretical conservation into applications that can be monitored for success
- Writing and editing conservation plans that increase success of application, including help to define goals, timelines, project monitoring, and adaptive management
- Research and writing of peer-reviewed publications and white papers

Owner, Seven Bends Nursery LLC, SevenBends.org (January 2019-present)
Promoting ecologically functional landscaping through the use of native plants and best practices in land management.

- Site assessments and management recommendations to improve biodiversity and ecologic function
- Research focused on developing new best practices for native plant restoration on private lands
- Partner in the development of a statewide industry for native ecotype seed with the Virginia Pollinator-Smart Program (Department of Conservation and Recreation)

RECENTLY HELD POSITIONS

Research Ecologist, Smithsonian Conservation Biology Institute, Front Royal, VA (September 2018-April 2021)

- Led the development of and implemented a research program called the Changing Landscapes Initiative
- Project development for a suite of studies in support of biological planning and conservation design as part of Changing Landscapes Initiative

- Performed analysis on impacts of stressors (habitat loss, invasive species) on species distribution and occupancy for at-risk or imperiled species and communities to understand the status, trends, drivers, and future trajectories of wildlife populations of management concern in the region
- Used methods including occupancy modeling and species distribution modeling
- Led teams and conducted formal expert elicitation involving multiple stakeholders through scenario planning
- Conducted scenario analysis as a method of risk assessment in response to impacts of stressors such as habitat loss and invasive species for wildlife of management concern in the region
- Developed analysis to assess the spatial role of public and private lands in conservation design
- Published in peer-reviewed journals within conservation biology professions

Smithsonian/Harvard Forest Postdoctoral Fellow, Smithsonian Conservation Biology Institute, Front Royal, VA (July 2015-September 2018) [40 hours/week]

- Led teams and conducted formal expert elicitation involving multiple stakeholders
- Conducted scenario analysis as a method of risk assessment in response to impacts of stressors such as habitat loss and invasive species on ecosystem function and services
- Developed improved techniques using existing platforms for land use modeling at large spatial scales
- Published in peer-reviewed journals within ecological modeling and conservation biology fields

EDUCATION

PhD in Ecology (2013)
Department of Environmental Science and Policy
University of California – Davis, CA
Dissertation - *"Testing assumptions about the relationship between geographic range and climatic tolerance for narrow and broadly distributed species using in-situ observations, ex-situ experiments, and species distribution modeling."*

Master of Environmental Science and Management (MESM) (2008)
Conservation Planning Specialization
Bren School of Environmental Science and Management - University of California, Santa Barbara

Bachelor of Science in Botany (2005)
University of Washington - Seattle, WA

PROFESSIONAL CERTIFICATIONS

Restoration Ecology Certificate - University of Washington Restoration Ecology Network, Seattle, WA (2005)
Scientific Illustration Certificate - University of Washington Extension, Seattle, WA (2005)

PUBLICATIONS

Fergus, C., **Lacher, I.**, Hermann, V., McShea, W J., Akre, T. (In Review) Predicting vulnerability of forest patches to invasion by non-native plants for landscape scale management. Ecological Applications.

Lacher, I., Akre, T., McShea, W J., Fergus, C., Plisinski, J., Morreale, L. (In Progress) Diverging scenarios of landscape composition and structure result from community guided scenario narratives that reflect regional differences in social, economic, and political drivers.

Quinn, J., **Lacher, I**., Fergus, C., Akre, T. (In Progress) Land use impacts on a suite of ecosystem services across five future land use scenarios.

Degano, ME, **Lacher, I**, Fergus, C., Akre, T. (In Progress) At the sweet spot of forest connectivity conservation: prioritizing lands based on their future risk of transformation.

Peters, J., Johnson, A., Fergus, C., **Lacher, I.**, Akre, T., and McShea, W J. (In Progress) Scenario analysis of regional changes in patterns of bird distributions in response to future landscapes in northwestern Virginia.

Noe, G., **Lacher, I.**, Fergus, C., Akre, T. (In Progress). Scenario analysis for five future land use scenarios on thirteen metrics of water quality differs by region in northwestern Virginia: Implications for Chesapeake Bay.

Lorick, C., **Lacher, I.**, Peters, J., Fergus, C., McShea, W., Akre, T. (In Progress) Differential impacts of surrounding land use on imperiled orchid species in northwestern Virginia.

Hood, R R, Shenk, G., Dixon, R., Ball, W., Bash, J., Boomer, K., Brady, D C., Cerco, C., Claggett, P., dDe Mutsert, K., Easton, Z M., Elmore, A J., Friedrichs, M., Harris, L., Ihde, T., **Lacher**, I., Linker, L., Miller, A., Moriarty, J., Noe, G., Onyullo, G., Rose, K., Skalak, K., Smith, S M C., Testa, J M., Tian, R., Veith, T L., Wainger, L., Weller, D., Zhang Y J. (2021) The Chesapeake Bay Program Management Modeling System: Progress, Challenges and Prospects. Ecological Modeling.

Ahmadisharaf, E., **Lacher, I.,** Fergus, C., Benham, B.L., Akre, T., Kline, K.S. (2020) Projecting land use change impacts on nutrients, sediment and runoff in multiple spatial scales: Business-as-usual vs. stakeholder-informed scenario. Journal of Cleaner Production.

Cove, M V., Fergus, C., **Lacher, I.**, Akre, T., and McShea, W J. (2019) Projected mammal distributions in response to future alternative landscapes in a rapidly transitioning region. Remote Sensing.

Lacher, I., Akre, T., McShea, WM., Fergus, C. (2019) Spatial and temporal patterns of public and private land protection within the Blue Ridge and Piedmont ecoregions of the eastern US. Landscape and Urban Planning.

Lacher, I., Akre, T., McShea, W.J., McBride, M., Thompson, J., Fergus, C. (2019) Engaging regional stakeholders in scenario planning for the long-term preservation of ecosystem services in Northwestern Virginia. Case Studies in the Environment.

Lacher, I., Ahmadisharaf, E., Fergus, C., Akre, T., McShea, W.J., Benham, B.L., Kline, K.S. (2019) Coupling a dynamic land use land change model with the Chesapeake Bay model reveals scale-dependent impacts to sediments and pollution. Science of the Total Environment.

Ramirez, K. S., Berhe, A. A., Burt, J., Gil-Romera, G., Johnson, R. F., Koltz, A. M., **Lacher, I.**, McGlynn, T., Nielsen, K.J., Schmidt, R., Simonis, J.L., TerHorst, C.P., Tuff, K. 2017. The future of ecology is collaborative, inclusive and deconstructs biases. *Nature Ecology & Evolution*. http://doi.org/10.1038/s41559-017-0445-7

Lacher, I. 2017. Strategic conservation planning in the Anthropocene. In: Encyclopedia of the Anthropocene, Volume x. D. DellaSalla and M. Goldstein (eds). Elsevier, Oxford.

Winford, E.*, M.L.Wilkerson, L. M. Porensky, **I. Lacher**, K. Garbach, K. Deiner, J.L. Blickley and M. Meek. Skills for non-academic wildlife and conservation careers. 2017. In *Wildlife Professions*. Eds. S.E. Henke and P.R. Krausman. John Hopkins University Press, Baltimore, Maryland. p. 24-28. *All authors except the last contributed equally and are listed in reverse alphabetical order. *(Book Chapter)*

Lacher, I., and M. W. Schwartz. 2016. Empirical test on the relative climatic sensitivity between individuals of narrowly and broadly distributed species. Ecosphere 7(3).

Lacher, I*. and Wilkerson, M. L. 2013. Wildlife Connectivity Approaches and Best Practices in U.S. State Wildlife Action Plans. Conservation Biology, 28: 13–21. doi: 10.1111/cobi.12204 *Equal authorship.

Diamond, T. Waetjen, D., **Lacher, I.** Harrold, K., Shilling, F.M. Prioritizing mitigation for interstates using wildlife movement information. Proceedings of the 2013 International Conference on Ecology and Transportation (ICOET 2013)

Blickley, J*. L., Deiner, K., Garbach, K., **Lacher, I.,** Meek, M. H., Porensky, L. M., Wilkerson, M. L., Winford, E. M. and Schwartz, M. W. 2012. Graduate Student's Guide to Necessary Skills for Nonacademic Conservation Careers. Conservation Biology. DOI: 10.1111/j.1523-1739.2012.01956.x

Wetzel, W., **Lacher, I.**, Swezey, D., Moffitt, S., Manning, D. 2012. Analysis reveals potential rangeland impacts if Williamson Act eliminated. California Agriculture. pp131-136. *(Cover Article)*

Lacher, I., Corey, D. 2007. Conservation Plan for the Lower Santa Clara River Watershed and Surrounding Areas. Ventura, CA. Prepared for The Nature Conservancy. Internal Use Only.

del Moral, R.., **Lacher, I**. 2005. Vegetation Patterns 25 Years after the Eruption of Mount St. Helens, Washington, USA. Amer. J. Bot. **92**(12) 1948-1956.

**equal contribution*

Doctoral Dissertation

Dissertation tests ecological theory that narrowly distributed species are inherently at higher risk of extinction than their broadly distributed counterparts

"Empirical test on the relative climatic sensitivity between narrowly and broadly distributed species

"Temporal changes in population density and reproductive ability challenge assumptions in climatic tolerances for species with small and large ranges"

"Differences in proportional change in projected suitable habitat resulting from the inclusion of temporal variability in species distribution models for species of differing range size"

PRESENTATIONS & POSTERS

Academic

Lacher, I. "Scientific support for strategic planning for the long-term preservation of ecosystem services". 2020. American Planning Association, Virginia Chapter.

Lacher, I., Howard, C. "Smithsonian's Changing Landscapes Initiative". National Park Service, Connected Conservation Series.

Iara Lacher, Amy Hruska, Tracy Allison. SYMPOSIUM. 2020. "Boundary-spanning science in North America, highlighting interdisciplinary conservation research at the Smithsonian Institution". North American Association for Conservation Biology. Denver, CO.

Lacher, I. "Spatial and temporal patterns of public and private land protection within the Blue Ridge and Piedmont ecoregions of the eastern US", International Association of Landscape Ecologists, Apr 8, Fort Collins, CO

ConCom, April 16, "Boundary-spanning science in North America, highlighting interdisciplinary conservation research at the Smithsonian Institution", Smithsonian Environmental Research Center, Edgewater, MD

Lacher, I., "Changing Landscapes Initiative, Integrating land use change science into planning". 2020. North American Association for Conservation Biology. Denver, CO.

Lacher, I., Fergus, C., Akre, T. "Modeling the Risk of Plant Invasion in Northern Virginia Forest Patches". US International Association for Landscape Ecology. Toronto, Ontario, Canada.

Noe, G., Hopkins, K., Claggett, P., Hupp, C., Schenk, E., Metes, M., Lacher, I., Fergus, C., McShea, W.J., Akre, T. 2019. "Comparison of future land-use change scenarios on floodplain and streambank loads of sediment and nutrients in northwestern Virginia."

Lacher, I., Thomas, A., Fergus, C., McShea, W.J., Plisinski, J., Morreale, L., Thompson, J. 2019. "Modeled land use change scenarios developed through participatory stakeholder engagement". International Society for Conservation Biology. Kuala Lumpur, Malaysia.

"Land use change scenarios developed through participatory stakeholder engagement", International Congress for Conservation Biology. July 22, Kuala Lumpur, Malaysia

Lacher, I. Akre, T., McShea, W.J., Fergus, C. 2019. "Spatial and temporal patterns of public and private land protection within the Blue Ridge and Piedmont ecoregions of the eastern US". US International Association for Landscape Ecology. Fort Collins, CO.

Lacher, I. Akre, T., Mcshea, W. J., Thompson, J., Fergus, C. 2018. "Integrating Stakeholder Feedback with Land Use Change Models to Predict Future Scenarios of Forest Loss and Landscape Configuration". Ecological Society of America. New Orleans, LA.

Lacher, I. Akre, T., Mcshea, W. J., Thompson, J., Fergus, C. 2018. "Integrating Stakeholder Feedback with Land Use Change Models to Predict Future Scenarios of Forest Loss and Landscape Configuration". US International Association for Landscape Ecology. Chicago, IL.

Lacher, I. Akre, T., Mcshea, W. J., Thompson, J., Fergus, C. 2017. "Changing Landscapes Initiative: Tying stakeholder feedback to land use change models and ecosystem services". Smithsonian Mason School of Conservation. Front Royal, VA.

Lacher, I. Akre, T., Mcshea, W. J., Thompson, J., Fergus, C. 2017. "Integrated landscape planning for biodiversity and ecosystem services". Seminar Series, Smithsonian Conservation Biology Institute. Front Royal, VA.

Lacher, I. Akre, T., Mcshea, W. J., Thompson, J., Fergus, C. 2017. International Society for Conservation Biology. "Tying stakeholder feedback to land use change models and ecosystem services". Cartagena, Colombia.

Lacher, I. 2017. Assessing the Vulnerability of Species to Climatic Change. International Society for Conservation Biology. Cartagena, Colombia.

Akre, T. Lacher, I. 2017. Knowledge Café: How can we bridge the gap between large-scale conservation vision and locally-applied action? International Society for Conservation Biology. Cartagena, Colombia.

Lacher, I. Akre, T., Mcshea, W. J., Thompson, J., Fergus, C. 2017. "Tying stakeholder feedback to land use change models and ecosystem services", US International Association for Landscape Ecology. Baltimore, MD.

Lacher, I. 2015. "Testing assumptions about the relationship between geographic distribution and climatic tolerance". Smithsonian Environmental Research Center. Edgewater, MD

Lacher, I. 2013. "Testing assumptions of the climatic envelope for rare and common plant species using empirical methods". Interdisciplinary Graduate and Professional Student Symposium. Seattle, WA.

Lacher, I. 2012. "Testing assumptions of the climatic envelope for rare and common plant species using empirical methods". Graduate Climate Conference. Seattle, WA.

Lacher, I. 2012. "Climatic Tolerances of Rare and Common Plants: Implications to Species Distribution Models and Biodiversity Management". California Native Plant Society. San Diego, CA.

Lacher, I. 2011. "Climatic Tolerances of Rare and Common Plants: Implications to Species Distribution Models and Biodiversity Management". Invited Speaker, Yosemite National Park Forum, CA.

Lacher, I. 2010. "The Williamson Act and Rangeland Conservation in California". Keynote Speaker, UC Davis, CA.

Lacher, I. 2010. "Climate Change, Sustainability, and the Environment". UC Davis Sustainable Design
, Davis, CA.

Lacher, I. 2009. "Wildlife Action Plans". Graduate Student Symposium, UC Davis, CA

Lacher, I. 2009. Ecology and Evolution Undergraduate Seminar Series, UC Davis, CA

Lacher, I. 2008. "Wildlife Action Plans". Hyatt Santa Barbara, Santa Barbara, CA

Lacher, I. 2005. "Vegetation Survey of the Pumice Plains 25 Years after the Eruption of Mount St. Helens". Undergraduate Research Symposium, UW, Seattle, WA.

Public Outreach

Lacher, I. "In consideration of Native Plants for our landscapes", Master Gardeners of Fauquier and Rappahannock. 2021

Lacher, I. "In consideration of Native Plants for our landscapes", Luray Garden Club. 2021

Lacher, I. "In consideration of Native Plants for our landscapes", Smithsonian Earth Optimism. 2021

Lacher, I. "In consideration of Native Plants for our landscapes", Winchester Garden Club. 2021

Lacher, I. "Boundary-Spanning Science for Change". 2020. Be In the Change, Global Huddle.

Lacher, I. "Changing Landscapes Initiative: Supporting Decision Making for Change" 2020. Webinar. Potomac Drinking Water Source Protection Partnership.

Lacher, I. 2018. "Saving the Planet, One Plant at a Time: How a community's renewed love of native plants can contribute to large-scale biodiversity conservation". Mountain Maryland Native Plant Festival.

Lacher, I. 2017. "Saving the Planet, One Plant at a Time: How a community's renewed love of native plants can contribute to large-scale biodiversity conservation". Virginia Native Plant Society, Potowmack Chapter.

Lacher, I. 2016. "The Changing Landscapes Initiative". Shenandoah National Park Conservation Summit. Luray, VA.

Lacher, I. 2016. *Keynote* "Coping with global change through a renewed public love of native plants". White House Farm – Luray, VA

Lacher, I. 2013. "The Science and Art of Rare Plants". American River College, Sacramento, CA.

- PUBLIC OUTREACH PRESENTATIONS in 2020:
  - Virginia Conservation Network, Oct 11, Richmond, VA. http://www.vcnva.org/assembly/

- Citizen Science Training for Orchid Surveys (Tissue Collection), Oct 11, SCBI Front Royal, VA
- Frederick County CEA, August 26, Frederick County Administration Offices
- Blue Ridge Conservation Alliance, August 27, Cool Springs, VA
- Albemarle County Planning, August 26, Albemarle County Offices
- Resilient Virginia Conference, August 19, Charlottesville, VA https://resilientvirginia.org/events/2019-resilient-virginia-conference#agenda
- Core Advisory Presentation, August 15
- "Land use change scenarios developed through participatory stakeholder engagement", International Congress for Conservation Biology. July 22, Kuala Lumpur, Malaysia
- Citizen Science Training for Orchid Surveys (Field Observations), Apr 26, SCBI Front Royal, VA
- Forum for Sustaining Agriculture, Mar 8, Winchester, VA https://blog.jcda.net/blog/agricultural-forum-shares-new-ideas-for-enhancing-rural-businesses
- Rappahannock-Rapidan Regional Commission, Feb 21, Culpeper, VA

SERVICE & OUTREACH

Board of Directors, **Chair of Science Committee, Chair of Strategic Planning Committee,** Friends of the North Fork of the Shenandoah River (March 2021-present)

Section Editor, Case Studies in the Environment, University of California Press (2017- present)

Associate Editor, Conservation Science and Practice, Society for Conservation Biology (2020-present)

SCBI Seminar Series Coordinator – Bi-weekly seminar for local and visiting scholars in conservation biology sciences (2017-2020)

Board Member - **Science Ambassador Scholarship** - Full ride college scholarship for women in STEM fields (2015- present)

Kids into Discovering Science (KiDS) Program - Hands on science in the classroom at Lower Lake Elementary, Lower Lake, CA (March 2012 and January - February 2014)

Plant Ecology Specialist - Strategies for Ecology Education, Diversity and Sustainability Bioblitz Biodiversity Assessment. Plant Ecology Specialist, Pittsburgh, PA (Aug 2010)

Judge - Coliseum College Prep Academy & Roots International 2nd Annual Science Fair. Oakland, CA (May 2009)

AWARDS

Research Grant – Lacher, I. Bridging the Gap: Connecting Conservation Science and Outreach, Appalachian Trail Conservancy (2020) $15,000

Research Grant – Lacher, I., Whigham, D. Engaging the Public in the Science of Conservation for America's Native Orchids, Smithsonian Women's Committee (2020) $18,200

Research Grant – Connette, G., Stabach, J., Lacher, I. Crego, R., Hughey, L., Vanthomme, H., Sanchez Cuervo, A., Songer, M. Hindsight is 20/20, but Foresight is Even Better: Developing a 'Mass Market' Approach to Conservation Scenario Modeling with Google Earth Engine, Working Land and Seascapes Amplification fund (2019) $75,000

Research Grant – Komatsu, K., Ogburn, M., Lacher, I. Johnson, A., Hruska, A., Tracy, A., Lubell, M., Lefcheck, J., Cawood, A., Connette, G. Bridging the land-sea interface: Chesapeake Bay as a model ecosystem for conservation science, partnerships, and actions, Working Land and Seascapes Amplification fund (2019) $75,000

Research Grant – Lacher, I. Changing Landscapes Initiative. Working Land and Seascapes Amplification fund. (2019) $160,000

Research Grant – Teixeira, K., Tepley, A., Lacher, I. Forest Resilience to Imminent Ash die-off in Shenandoah National Park. Shenandoah National Park Trust. (2018) $15,000

Research Grant – Lacher, I., McShea, W.J., Estimating invasion risk for native forest in Northwestern Virginia. Washington Field Biologists Club. (2017) $5000
Research Grant – Lacher, I., McShea, W.J., Estimating invasion risk for native forest in Northwestern Virginia. Virginia Native Plant Society (2016) $5000
Fulbright Scholar (U.S. Core Program) – Universidade Federal de Goiás, Goiânia, Brazil (2014) $30,000 for 4 months
NSF IGERT Travel award – University of California, Davis (2013) $5000
Professors for the Future Fellowship - University of California, Davis (2012-2013)
Jastro Shields Award – University of California, Davis (2011)
California Native Plant Society Educational Grant – Sacramento, CA (2010)
NSF IGERT Travel award – University of California, Davis (2010)
Jastro Shields Award - University of California, Davis (2010)
NSF REACH IGERT Trainee Award (Response to Rapid Environmental Change) - University of California, Davis (2008-2010) $60,000
Fee Fellowship Award – The Donald Bren School of Environmental Science and Management, UCSB (2007)
Conference Scholar - The Central California Land Use and Planning Law Conference, Avila Beach, CA (2007)
NSF Research Experience for Undergraduates Award (NSF-REU) – University of Washington, Seattle, WA (2004)

DATA DEVELOPMENT

Data Visualizations of impact of future land use scenarios on viewsheds for Albemarle County, Frederick County, and Rockingham County

- Collaboration with Nelson Byrd Woltz, Landscape Architecture, Charlottesville, VA
- Viewshed visualizations
- Graphic presentation of data
- Stylized illustrations of water quality impacts for use in outreach materials

Shilling, F., Waetjen, D., **Lacher, I.**, Cardenas, S. "Water Sustainability Decision-Support Tool and Sustainability Indicators Catalog" (http://indicators.ucdavis.edu/)

- Support for the statewide California Water Plan Update 2013

WORKSHOPS & WORKING GROUPS

- *Chesapeake Bay Program Modeling in 2025 and Beyond: A Proactive Visioning Workshop*. January 17-19, 2018. (Participant)
- *Changing Landscapes Initiative Scenario Building Workshops*. August 25 & 30, 2016. Harrisonburg & Culpeper, VA
- *Changing Landscapes Initiative Northern Shenandoah Valley Meeting*. February 2, 2016. Bluemont, VA
- *Science Advisory Meeting for the Changing Landscapes Initiative*. October 7-8, 2015. Smithsonian Conservation Biology Institute, Front Royal, VA
- *Training Future Professors to Identify and Teach Skills Applicable in Pursuing Careers Outside of Academia*. May 17, 2013. University of California, Davis.
- *The Williamson Act and Rangeland Conservation in California*. September 14, 2010. University of California, Davis.

TEACHING EXPERIENCE

Course Development:

- "Stakeholder-Driven Scenario Models for Strategic Conservation Planning". Six-day intensive professional development course. Smithsonian Mason School of Conservation. Front Royal, VA.
- "Climate change impacts on biodiversity and biodiversity conservation". Three-day intensive professional development course. Universidade Federal de Goiás, Goiânia, Brazil (Implemented in 2014)

Mentorship:

Smithsonian Conservation Biology Institute, Front Royal, VA (August 2015-present)

- Mentored 11 interns over 6 year period
  - Jacob Peters – GIS Intern (present)
  - Meredith Hickman - Outreach and Communications (2020-2021)
  - Maria Eugenia Degano– GIS Intern (2019-2021)
  - Erin Carroll – GIS Intern (2019)
  - Carlyle Howard – Outreach and Communications Coordinator (2019-2020)
  - Sarah Halperin – GIS Intern (2018)
  - Carlyle Howard – Outreach and Communications Intern (2018-2019)
  - Sultana Majid – GIS Intern (2017)
  - Samantha Alexander – Undergraduate Research Experience, George Mason University (2017)
  - Brandon Hays – Field Intern (2016)
  - Craig Fergus – GIS Intern (2015-2016); Spatial Analyst (2016-2017); Lab Manager (2017-present)

University of California, Davis (March 2010-October 2013)

- 32 undergraduate interns
- Developed and implemented short course program for individual mentorship

Guest Instructor:

- **"**Drivers of Environmental Change and Ecosystem Services". Conservation 401. Smithsonian Mason School of Conservation. Front Royal, VA (2017)
- **"**Scenario Planning for Natural Resources Conservation". Conservation 401. Smithsonian Mason School of Conservation. Front Royal, VA (2016)

Teaching Assistant:

- Introductory Biology: Ecology, University of California, Davis (2013)
- Introduction to Environmental Science and Policy, University of California, Davis (2010)
- New Venture Ideas, University of California, Santa Barbara (2007)

Volunteer Teaching Sessions:

- Introductory Biology: Ecology, University of California, Davis (2013)

OTHER WORK EXPERIENCE

Graduate Student Research:

- GIS analyst - Department of Environmental Science and Policy, University of California, Davis (2011- 2013)
- GIS analyst - Road Ecology Center , University of California, Davis (2011)
- Public Relations - John Muir Institute for the Environment, University of California, Davis (2011)

Internships:

- Ecotourism - Dominica Parks & Wildlife Division, Dominica, W.I. (2010)
- Conservation Planning - The Nature Conservancy, Ventura, CA (May 2007- Oct 2007)
- Restoration Ecology - Coal Oil Point Reserve, Shoreline Preservation Fund, Goleta, CA (Oct 2006 -Dec 2006)
- Urban Ecology - Goleta Valley Beautiful, Goleta, CA (Oct 2006-Jan 2007)
- Plant Community Ecology – Department of Biology, University of Washington, Seattle, WA (June 2004-September 2004)
- Tropical Botany and Carbon - Conservation International - Estação Ferreira Penna, of the Museu Emílio Goeldi, Amazon Basin & Washington DC (May 2003-July 2003)

PRESS

Smithsonian Magazine, "Using Science and Local Knowledge to Guide the Future of Virginia's Landscapes", https://www.smithsonianmag.com/blogs/conservation-commons/2019/03/22/using-science-and-local-knowledge-guide-future-virginias-landscapes/

American University Radio *WAMU,* "Rare, Critically Imperiled Orchid Found in Virginia", https://wamu.org/story/19/08/13/rare-endangered-orchid-found-in-virginia/

Smithsonian Magazine, "Citizen Scientists Discover Endangered Orchid in Virginia", https://www.si.edu/newsdesk/releases/citizen-scientists-discover-endangered-orchid-virginia

Northern Virginia Daily, "Local citizen scientists find endangered Virginia orchid", https://www.nvdaily.com/nvdaily/local-citizen-scientists-find-endangered-virginia-orchid/article_7b2c55f2-9372-5437-b05e-b4425472ab9c.html

PODCAST: Important, Not-Important, "Boundary Spanning Science for Change" https://www.importantnotimportant.com/podcast/tag/Smithsonian+Institution

"Ash Tree Die-Off is Focus of 2018 Research Grant Awarded in Shenandoah National Park" (https://www.nps.gov/shen/learn/news/ash-tree-die-off-is-focus-of-2018-research-grant-awarded-in-shenandoah-national-park.htm)

"Featured speakers at 2018 Mountain Maryland Native Plant Festival**"** **(**https://www.wvnews.com/garrettrepublican/community/featured-speakers-at-mountain-maryland-native-plant-festival/article_4992d630-7ce9-57a7-930a-5f22348bcf39.html**)**

"Connectivity approaches in state wildlife action plans". Conservation Corridor (http://www.conservationcorridor.org/2014/03/connectivity-approaches-state-wildlife-action-plans/)

"A graduate student's guide to necessary skills for landing a job". Early Career Ecologists (http://earlycareerecologists.wordpress.com/2013/02/12/a-graduate-students-guide-to-necessary-skillsfor-landing-a-job/)

"Next- generation point of view: getting a job". International Network of Next-Generation Ecologists (http://innge.net/?q=node/332)

"So, you want a job that lets you save the world". The Quantitative and Applied Ecology Group. (http://qaeco.com/2012/11/19/so-you-want-a-job-that-lets-you-save-the-world/)

"Rangeland at Risk" **NPR**'s KQED show Forum with Michael Krasny. (http://www.kqed.org/a/forum/R201210300930)

"Williamson Act cuts: Ranch land, critical conservation areas, at risk" ANR News Release. (http://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=8593)

"Wildlife habitat would suffer without Williamson Act, survey finds" Plant and Environmental Sciences, UC Davis. (http://www.plantsciences.ucdavis.edu/plantsciences/features/recent_news/williamson_act.htm)

"Highlight: California's Williamson Act, cattle ranch economics, and biological conservation". IGERT News. (http://www.igert.org/highlights/741)

"Save the Planet: Keep the Williamson Act/ Repeal AB 32". Stephen Frank's California. (http://capoliticalnews.com/2013/01/21/save-the-planet-keep-the-williamson-actrepeal-ab-32/)

"Alumna co-authors paper on budgetary impacts of Williamson Act" Events and Media from the Bren School. (http://www.bren.ucsb.edu/news/williamson_act.htm)

"ESA 2013 Preview: Tackling assumptions on the climatic tolerances of narrowly vs broadly distributed species". Ecology Graduate Student Association (http://egsa.ucdavis.edu/blog/tag/esa2013/)

AFFILIATIONS

AAAS/Science - via the Program for Excellence in Science
Ecological Society of America (ESA)

Society for Conservation Biology (SCB)
Virginia Native Plant Society (CNPS)
UC Davis Ecology Graduate Group Sustainability Committee: Founder, Chair 2008-2012

LANGUAGE

Brazilian Portuguese – Fluent
Spanish – Conversational

NOTABLE COMPUTING SKILLS

ArcGIS
R programming platform
DinamicaEGO