

# Nina Maggi Kelly

University of California, Berkeley  
Dept of Environmental Sciences, Policy & Management  
Division of Agriculture and Natural Resources  
@nmaggikelly

130 Mulford Hall #3114  
Berkeley, CA 94720-3114  
510.642.7272  
maggi@berkeley.edu

<http://kellylab.berkeley.edu>

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## EDUCATION

1998	National Research Council Postdoctoral Associate. NOAA-NMFS Lab, Beaufort, NC
1996	Ph.D. Department of Geography. University of Colorado, Boulder, Colorado
1991	M.A. Department of Geography. University of North Carolina, Chapel Hill, North Carolina
1988	Cartography Certificate. California State University, Hayward, California
1988	B.A. Department of Geography, University of California, Berkeley, California
1986	Junior Year Abroad. Department of Geography, University of Wales, Aberystwyth

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## AREAS of RESEARCH and OUTREACH SPECIALIZATION

I am Professor and Cooperative Extension Specialist based at UC Berkeley. My lab's motto is "mapping for a changing California", and I use a range of techniques - remote sensing, object-based image analysis, geospatial modeling, lidar analysis, participatory webGIS and field methods - to answer applied questions about how and why California landscapes are changing, and what that change means for those who live on and manage our lands. I primarily work in California: on wetland, forest and urban landscapes. The geo-informatics field is evolving quickly, and I actively work to build a community interested in applied geospatial research and outreach locally at UC Berkeley and across the state. I am Faculty Director of the UCB Geospatial Innovation Facility (GIF) and Director of the ANR Statewide Program in Informatics and Geographic Information Systems (IGIS), both of which are dedicated to bringing cutting-edge mapping technology, training, and research support to the ANR network, students, staff, faculty, and the public.

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## APPOINTMENTS

2017-present	Affiliate Professor. Department of Geography, University of California, Berkeley
2010-present	Professor in Residence and Specialist in Cooperative Extension. Ecosystem Sciences Division of the Department of Environmental Sciences, Policy and Management. University of California, Berkeley
2014-present	Senior Fellow at the Berkeley Institute for Data Sciences (BIDS)
2012-present	Director, ANR Statewide Program for Informatics and Geographic Information Systems (IGIS)
2003-2010	Associate Specialist in Cooperative Extension and Adjunct Associate Professor. Ecosystem Sciences Division of the Department of Environmental Sciences, Policy and Management. UC Berkeley
2005-present	Faculty Director. Geospatial Innovation Facility (GIF), College of Natural Resources, UC Berkeley
1999-2003	Assistant Specialist in Cooperative Extension and Adjunct Assistant Professor. Department of Environmental Sciences, Policy and Management. University of California, Berkeley
1998-1999	Lecturer. Department of Geography. San Diego State University
1996-1999	Visiting Scholar. San Diego Supercomputer Center
1996-1998	NRC Postdoctoral Associate. NOAA-NMFS Southeast Fisheries Laboratory. Beaufort, NC
1996	Physical Scientist. National Geophysical Data Center, NOAA. Boulder, Colorado
1996	GIS Lab Manager and GIS facilitator. NOAA-NMFS Southeast Fisheries Laboratory. Beaufort, NC
1991-1995	Teaching Assistant and Research Assistant. Geography. University of Colorado, Boulder
1989-1991	Research Assistant and RS/GIS Laboratory Manager. Geography Department. UNC, Chapel Hill

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## PUBLICATIONS

### Accepted or In Press

Kelly, M, K J Easterday, M Koo, J H Thorne, S Mukythar and B Galey. Geospatial informatics key to recovering and sharing historical ecological data for modern use. Accepted in *Photogrammetric Engineering and Remote Sensing*

### Published

Boisrame, GF, SS Thompson, M Kelly, S Stephens, and J Cavalli. **2017**. Vegetation Change Induced by Changing Fire Regime. *Forest Ecology and Management* 402: 241–252

Tsalyuk, M, M Kelly, and W Getz. **2017**. Improving the measurement of African savanna vegetation using time series analysis of MODIS vegetation indices. *ISPRS Journal of Photogrammetry and Remote Sensing* 131: 77–91

- Palomino, J, O Muellerklein, and M Kelly. **2017**. A review of the emergent ecosystem of collaborative geospatial tools for addressing environmental challenges. *Computers, Environment and Urban Systems* 65: 79–92
- Laraia, B, J Downing, YT Zhang, W Dow, M Kelly, SD Blanchard, N Adler, D Schillinger, HH Moffet, M Warton, and AJ Karter. **2017**. Food environment and weight change: does residential mobility matter? The Diabetes Study of Northern California (DISTANCE). *American Journal of Epidemiology* 1-8.
- Kelly, M. **2017**. Drones in California research and extension. *California Agriculture* 71(1): 4
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- Kramer, HA, BM Collins, CV Gallagher, J Keane, SL Stephens, and M Kelly. **2016**. Accessible LiDAR: estimating large tree density for habitat identification. *Ecosphere* 7(12): e01593
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- Kelly, M, KJ Easterday, G Rapacciuolo, M S Koo, P McIntyre, and J Thorne. **2016**. Rescuing and sharing historical vegetation data for ecological analysis: The California Vegetation Type Mapping project. *Biodiversity Informatics* 11: 40-62
- Kramer, HA, BM Collins, FK Lake, MK Jakubowski, M Kelly, and SL Stephens **2016**. Estimating ladder fuels: a new approach combining field photography with LiDAR. *Remote Sensing* 8(9): 766
- Xiao, P, X Zhang, D Wang, M Yuan, X Feng, M Kelly. **2016**. Change detection of built-up land: A framework of combining pixel-based detection and object-based recognition. *ISPRS Journal of Photogrammetry and Remote Sensing* 119: 402–414
- Su, Y, Q Guo, B M Collins, D Fry, and M Kelly. **2016**. Forest fuel treatment detection using multi-temporal airborne Lidar data and high resolution aerial imagery: A case study in the Sierra Nevada, California. *International Journal of Remote Sensing* 37(14): 3322–3345
- Müller, MF, SE Thompson, and M Kelly. **2016**. Bridging the information gap: A webGIS tool for rural electrification in data-scarce regions. *Applied Energy* 171(1): 277-286
- Su, Y, Q Guo, DL Fry, BM Collins, M Kelly, JP Flanagan, and JJ Battles. **2016**. A vegetation mapping strategy for conifer forests by combining airborne lidar data and aerial imagery. *Canadian Journal of Remote Sensing* 42: 1–15
- Eitzel, M V, M Kelly, I Dronova, J Solera, and P de Valpine. **2016**. Challenges and opportunities in synthesizing historical geospatial data using statistical models. *Ecological Informatics* 31: 100–111
- Tempel, DJ, RJ Gutiérrez, JJ Battles, DL Fry, Y Su, Q Guo, MJ Reetz, SA Whitmore, GM Jones, BM Collins, SL Stephens, M Kelly, WJ Berigan, and MZ Peery. **2015**. Modeling short- and long-term impacts of fuel treatments and wildfire on an old-forest species. *Ecosphere* 6(12): Article 261
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- Lei, S and M Kelly. **2015**. Evaluating adaptive collaborative management in Sierra Nevada forests by exploring public meeting dialogues using Self-Organizing Maps. *Society and Natural Resources* (28)8: 873-890  
DOI:10.1080/08941920.2015.1045645
- Kelly, M and S Di Tommaso. **2015**. Mapping forests with Lidar provides flexible, accurate data with many uses. *California Agriculture* 69(1): 14-20

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- Zhang, YT, BA Laraia, MS Mujahid, A Tamayo, SD Blanchard, EM Warton, M Kelly, HH Moffet, D Schillinger, N Adler, and AJ Karter. **2015**. Does food vendor density mediate the association between neighborhood deprivation and BMI?: A G-computation mediation analysis. *Epidemiology* 26(3): 344-52
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- Li, L, Q Guo, S Tao, M Kelly, and G Xu. **2015**. Lidar with multi-temporal MODIS provide a means to upscale predictions of forest biomass. *ISPRS Journal of Photogrammetry and Remote Sensing* 102: 198–208
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- Lewis, S, S Gross, A Visel, M Kelly, and W Morrow. **2015**. Fuzzy GIS-based multi-criteria evaluation for U.S. *Agave* production as a bioenergy feedstock. *Global Change Biology Bioenergy* 7: 84–99
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- Ferranto, S, L Huntsinger and M Kelly. **2014**. Sustaining ecosystem services from private lands in California: the role of the landowner. *Rangelands* 36(5): 44-51
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- Kramer, HA, B Collins, M Kelly, and S Stephens. **2014**. Quantifying ladder fuels in forests: a new approach using LiDAR. *Forests* 5: 1432-1453
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- Brown, G, M Kelly and D Whital. **2013**. Which “public”? Sampling effects in public participation GIS (PPGIS) and Volunteered Geographic Information (VGI) systems for public lands management. *Journal of Environmental Planning and Environment* 57(2): 190- 214
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- De Chant, T and M Kelly. **2009**. Individual object change detection for monitoring the impact of a forest pathogen on a hardwood forest. *Photogrammetric Engineering and Remote Sensing* 75(8): 1005-1013
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- Kelly, M, D Liu, B McPherson, D Wood and R Standiford. **2008**. Spatial pattern dynamics of oak mortality and associated disease symptoms in a California hardwood forest affected by sudden oak death. *Journal of Forest Research* 13: 312-319
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- Helly, JH, NM Kelly, D Sutton, and T. Elvins. **2001**. Collaborative management of natural resources in San Diego Bay. *Coastal Management* 29(2): 117- 132
- Kelly, NM, M Fonseca, and P Whitfield. **2001**. Predictive mapping for management and conservation of seagrass beds in North Carolina. *Aquatic Conservation: Marine and Freshwater Ecosystems* 11(6): 437-451
- Kelly, NM **2001**. Changes to landscape pattern of coastal North Carolina wetlands under the Clean Water Act. *Landscape Ecology* 16(1): 3-16
- Kelly, NM **2000**. Spatial accuracy assessment of wetland permits. *Cartography and Geographic Information Systems* 27(2): 117-128

## Book Chapters

- Blaschke, T, M Kelly, H Merschdorf. **2015**. Object Based Image Analysis: Evolution, History, State-of-the-Art and Future Vision. Chapter 14 in: Thenkabail, P.S. (Ed.), Remote Sensing Handbook; Vol. I Data: Characterization, Classification, and Accuracies. Taylor & Francis
- Elena-Rosselló, R, M Kelly, S González-Avila, A Martín, D Sánchez de Ron and JM García del Barrio. **2013**. Recent Oak Woodland Dynamics: A Comparative Ecological Study at the Landscape Scale. Chapter 14 in P. Campos et al. (eds.), Mediterranean Oak Woodland Working Landscapes, 427 Landscape Series 16, DOI: 10.1007/978-94-007-6707-2\_14, Springer Science
- Kelly, M and K Tuxen. **2009**. Remote sensing support for tidal wetland vegetation research and management. Invited chapter in: Remote Sensing and Geographic Information Systems for Coastal Ecosystem Assessment and Management: Principles and Applications. Pp. 341-364. Xiaojun Yang (Editor). Springer-Verlag
- Tuxen, K and M Kelly. **2008**. Multi-scale functional mapping of tidal wetlands: an object-based approach. Chapter in Object-based Image Analysis: Spatial concepts for knowledge driven remote sensing applications. Pages 415-442. Thomas Blaschke, Stefan Lang and Geoffrey Hay (Editors). Springer Lecture Notes in Geoinformation and Cartography
- Kelly, M and Q Guo. **2007**. Integrated agricultural pest management through remote sensing and related technologies. Invited chapter in: Integrated Management of Plant Pests and Disease. Pages 191-226. Aurelio Ciancio and K. G. Mukerji (Editors). Kluwer
- Kelly, NM, **2001**. Linking biogeography and environmental management in the wetland landscape of coastal North Carolina: the difference between nationwide and individual wetland permits. pp. 281-294 in GIS and Remote Sensing Applications in Biogeography and Ecology. A. Millington, S. Walsh and P. Osborne (Editors), Kluwer Academic Press, Boston MA
- Kelly, NM, F Cross, D Field, and R Emmett, **1999**. Remote sensing of forest clearing effects on essential fish habitat of Pacific salmon. pp. 252-267 in Fish Habitat: Essential Fish Habitat and Habitat Rehabilitation, L. Beneka (Editor), American Fisheries Society, Bethesda MD

## Selected Reports

- Kelly, M **2017**. Chapter 6: Mapping Forest Conditions Past, Present, and Future. In Gutiérrez, R J, P N Manley, and P A Stine, technical editors. The California spotted owl: current state of knowledge. Gen. Tech. Rep. PNWGTR-254. Albany, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station. 294 p.
- Kelly, M **2015**. California's majestic trees are declining — a harbinger of future forests. The Conversation. January 28, 2015.
- Kelly, M, J Connors, S Lei. **2010**. OakMapper 2.0: Distributed Participatory Sensing for Monitoring and Management of Sudden Oak Death. Gen. Tech. Rep. PSW-GTR-229, Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture. Pp. 334-337
- McPherson, BA, DL Wood, M Kelly, SR Mori, P Svihra, AJ Storer, and RB Standiford. **2010**. Impacts of *Phytophthora ramorum* on Oaks and Tanoaks in Marin County, California Forests Since 20001. Gen. Tech. Rep. PSW-GTR-229, Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture. Pp. 210-212
- Tuxen, K and M Kelly. **2008**. The OakMapper webGIS: Improved access to sudden oak death spatial data. Gen. Tech. Rep. PSW-GTR-214, Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture.
- McPherson, B, DL Wood, SR Mori, P Svihra, RB Standiford, and M Kelly. **2008**. Consequences of *Phytophthora ramorum* infection in coast live oaks. Gen. Tech. Rep. PSW-GTR-217. Albany CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture: 199-208
- DeChant, T, M Kelly and B Allen-Diaz. **2008**. Gap dynamics in oak woodlands across a gradient of disturbance. Gen. Tech. Rep. PSW-GTR-217. Albany CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture: 251-262
- Doherty, T, B Allen-Diaz and M Kelly. **2008**. Using Vegetation Type Mapping data to increase our understanding of long-term ecological change in the woodlands surrounding San Francisco bay. Gen. Tech. Rep. PSW-GTR-217. Albany CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture: 617-624



- Kelly, MD Shaari, Q Guo, and D Liu. **2006**. Modeling risk for SOD Nationwide: What are the effects of model choice on risk prediction? Gen. Tech. Rep. PSW-GTR-196. Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture: 333-344
- McPherson, BA, SR Mori, DL Wood, AJ Storer, P Svihra, M Kelly, and R Standiford. **2006**. Sudden Oak Death disease progression in oaks and tanoaks. Gen. Tech. Rep. PSW-GTR-196. Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture: 379-382
- Kelly, NM. **2002**. Monitoring Sudden Oak Death in California using high-resolution imagery. Gen. Tech. Rep. PSW-GTR-184, Albany CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture: 799-810
- McPherson, BA, DL Wood, AJ Storer, NM Kelly, and RB Standiford. **2002**. Sudden Oak Death: One year of field data. Gen. Tech. Rep. PSW-GTR-184, Albany CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture: 751-763

### **In Review**

- Easterday, K, P McIntyre and M Kelly. 20<sup>th</sup> century changes to forest structure forests across land management types in California. In review in *Forest Ecology and Management*
- Kelly, M, Y Su, S Di Tommaso, DL Fry, BM Collins, SL Stephens, and Q Guo. Impact of error in Lidar-derived forest structure metrics on modeled wildfire behavior: A Monte Carlo uncertainty analysis. In review in *Remote Sensing*
- Kelly, M, K Easterday, et al. Geospatial informatics key to rescuing and sharing historical ecological data for modern use. In review in *Photogrammetric Engineering & Remote Sensing*

### **Working Papers**

- Easterday, KJ, T Paulson, P DasMohapatra, P Alagona, and M Kelly. From file cabinets to the cloud: restoring the potential of under-archived data from field stations and research reserves. To be submitted to *PLOS One* or *Biodiversity Informatics*
- Csillik, O, M Belgiu, M Kelly. Automated object-based dynamic time warping tool for agricultural mapping. To be submitted to *Remote Sensing of Environment* or *Computers and Electronics in Agriculture*
- Kelly-Pennaz, AB, J Palomino, V Butsic, and M Kelly. Policing the Parks: Differing Detection in US National Parks Driven by Ranger Time Constraints, Perception of Safety, and Motivation
- Kelly, M, S Feirer, A Monaghan, K Padgett, MB Hahn, RJ Eisen, and R Lane. High resolution mapping of current distribution of *Ixodes pacificus* in California: a species distribution modeling approach. To be submitted to *Ticks and Tick Borne Diseases*

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### **AWARDS**

- |      |   |
|------|---|
| 2015 | Western Extension Directors Association <i>Award of Excellence</i>                          |
| 2014 | * ASPRS ERDAS Award for <i>Best Scientific Paper in Remote Sensing</i> , First Place        |
| 2008 | <i>Excellence in Education</i> award from the California Geographic Information Association |
| 2008 | Inducted into the Berkeley High School Athletic Hall of Fame                                |
| 2007 | Inducted into the University of California Athletic Hall of Fame                            |
| 2006 | Inducted into the United States Water Polo Hall of Fame                                     |
| 2002 | NASA New Investigator Program Award   |
| 1996 | Marine Science Fellowship. North Carolina State University Sea Grant Program                |
| 1994 | Student Coach of the Year. University of Colorado, Boulder                                  |
| 1995 | Lead Graduate Teacher. Department of Geography, CU-Boulder                                  |

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### **CURRENT RESEARCH FUNDING**

- Land Acquisition and Ecosystem Carbon in Coastal California: 2016-2017. PI: D. Ackerly. Co-I: Kelly, Butsic, Battles, Silver, Gonzalez. California Coastal Conservatory: \$139,958
- A Web-Based Application for the Management and Visualization of Land-Use Scenario Data. 2016-2017. PI: Kelly. USDI Geological Survey: \$21,312

NRT-DESE: Environment and Society: Data Science for the 21st century (DS421). 2015-2020. PI: D. Ackerly. Co-I: M. Kelly. National Science Foundation: \$2,998,185

Hydrology and fire in the Sierra Nevada: A possible win-win. 2014-2017. PI: S. Stephens. Co-I: M. Kelly. USDA-DOI Joint Fire Sciences Program: \$400,000

Advanced geospatial data delivery and visualization tools for communication about climate change and ecosystem adaptation. 2012-2017. USDI Geological Survey. PI: M Kelly. USGS: \$628,059

Quantifying ecological effects of land use and climate change using historical collections. 2013-2017. PI: K. Will. Co-I: Kelly. ANR Competitive Grants: \$268,038

The Cal-Adapt Website. 2013-2017. PI: Kelly. CEC California Energy Commission: \$515,000

Maintenance of web-based mapping tools for Sudden Oak Death (SOD) Management. 2008-2017. PI: M. Kelly. USDA Forest Service. \$50,000

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### **PAST RESEARCH FUNDING (Previous 5 years)**

Finding Dark Data on ANR Research and Extension Centers. 2015-2016. PI: M. Kelly. UC ANR: \$50,755

Understanding disturbance and vegetation dynamics in northern California oak woodlands. 2013-2015. PI: Y. Valachovic and R. Standiford. Co-I: M. Kelly. ANR Competitive Grants: \$249,617

Informatics Engine for understanding biotic responses to global change. 2012-2015. PI: C. Marshall and R. Gillespie. Co-I: M. Kelly. William M. Keck Foundation: \$1,500,000

Ames Research Center Cooperative for Research in Earth Science and Technology (ARC-CREST). 2015. PI: M. Kelly. NASA Ames Research Center. \$98,412

Learning how to apply adaptive management in the Sierra Nevada Forest Plan Amendment. 2005-2015. PI: J. Battles, Co-PIs: R. C. Bales (UC Merced), M. Conklin (UCM), L. Huntsinger (UCB), M. Kelly (UCB), Q. Guo (UCM), R. J. Guitierrez (University of Minnesota), K. A. Rodrigues (UC Cooperative Extension), S. Stephens (UCB). USDA Forest Service: \$1,850,666

Neighborhood effects on weight change and diabetes risk factors. 2009-2015. PI: B. Laraia, UCSF. Co-I: M. Kelly. National Institutes of Health, Research Project Grant Program (R01): \$784,390

Advanced Remote Sensing to Quantify Temperate Peatland Capacity for Belowground Carbon Capture. 2011-2013. PI: K. Byrd. NASA: \$232,155

West Coast Carbon Sequestration Partnership: GIS Support, Web Upgrade and Services: California Institute for Energy & Environment: \$24,175

Visualizing Climate Change Risk and Adaptation Options for California: CalAdapt. 2010-2012. PI: M Kelly. California Energy Commission (CEC): \$499,976

WebGIS Development for California Insect and Disease Atlas. 2010-2011. PI: M. Kelly. USDA Forest Service. \$22,620

Mapping the Sudden Oak Death Infestation in Tilden Park and Assessing Future Developments. 2008-2012. PI: Greg Biging, Co-PI: Maggi Kelly. East Bay Regional Park District. \$100,000

Advanced Tools for Consolidation of California's Groundwater Data. 2010-2011. PI: M. Kelly. CITRIS. \$34,560

Climate change impacts to SF Bay-Delta wetlands: Links to pelagic food webs and predictive responses based on landscape modeling. 2007-2011. PI: T. Parker (SFSU), Co-PIs: M. Kelly, J. Callaway, D. Talley. CalFed: \$646,848

Understanding the coupling of greenhouse gases and energy fluxes and scaling them across a spectrum of time and space. 2006-2011. PI: Dennis Baldocchi, Co-PIs: M. Kelly, W. Silver. NSF. \$1,291,162

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### **TEACHING**

#### ***Academic Courses***

Data Science for the 21<sup>st</sup> Century. ESPM 290, UC Berkeley Spring 2016

GIS for Environmental Science and Management. ESPM 164, UC Berkeley. Fall 2015, 2016

GIS for Environmental Science and Management. ESPM 233, UC Berkeley. Sp 2002, Fall 2003, 2005, 2007, 2009-2014

Applications of Remote Sensing. ESPM 290. UC Berkeley. Spring 2009

Environmental Science Case Studies (with others). ESPM 9. UC Berkeley. Spring 2008, 2009, 2010, 2012

Introduction to Geographical Information Systems (with Moritz). ESPM 72, UC Berkeley. Spring 2006

GIS Programming & Advanced Spatial Modeling (with Guo). ESPM 290, UC Berkeley. Fall 2004

Urban Environmental Education. ESPM 190, UC Berkeley. Spring 2004

GIS for Natural Resource Systems. ESPM 290, UC Berkeley. Fall 2000

GIS & Environmental Management. Geography, San Diego State University. Spring 1999

Environmental & Natural Resources Conservation. Geography, SDSU. Fall 1998, Spring 1999  
Environmental Conservation. Geography, SDSU. Fall 1998  
Environmental Management & GIS. Geography, University of North Carolina, Chapel Hill  
Geographic Information Systems. Geography, CU-Boulder  
Mapping from Remotely Sensed Imagery. Geography, CU-Boulder  
Introductory Cartography. Geography, CU-Boulder

### **Short Courses/Workshops Series**

DroneCamp, UC ANR, Davis, CA. July 25-27 2017  
Spatial Data Science Bootcamp, UC Berkeley. March 28-30 2017  
Introduction to GIS. UCB Forestry Camp. June 7-8, 2016  
UCB Faculty workshop: Incorporating sustainability across the curriculum. Co-organized w. Celine Pallud. May 5 2016  
ESRI @ GIF Open GeoDev Hacker Lab. UC Berkeley. January 15 2016  
Spatial Data Science Bootcamp, UC Berkeley. March 23-25 2016  
Google Earth Engine and related tools. UC Berkeley. Aug 20-21, 2015  
Introduction to GIS and webGIS. UC Forest Camp. June 4-5, 2015  
Spatial Data Science for Professionals. 3-day workshop series hosted by the GIF. May 20-22, 2015  
Introduction to GIS, QGIS, webGIS. GIF Workshop series with Sean Hogan. Sep 26, Oct 10, Nov 7, 21 2014  
Introduction to GIS and webGIS. UC Forest Camp. June 5-6, 2013  
Introduction to GIS and webGIS. UC Forest Camp. June 6-7, 2012  
Lidar data and analysis for forestry. Half-day workshops for the GIF. With Marek Jakubowski. April 5, 2010  
Intro to GPS/GIS. Full-day workshop for ESPM 107 (Moorea class), with Kevin Koy. August 29, 2008  
Intro to GPS/GIS. Full-day workshop for ESPM 107 (Moorea class). August 31, 2007  
Intro to GIS/GPS, Advanced GIS. Six full-day Renewable Resources Extension Act (RREA)-sponsored workshops for UCCE colleagues. GIFF, UC Berkeley. Summer 2007  
GIIF Geospatial Workshops. GIFF UC Berkeley. Spring 2006, Fall 2006  
Intro to GIS/GPS. Four RREA-sponsored workshops for UCCE colleagues. GIF, UC Berkeley. Summer 2006  
Introduction to GIS & GPS. Short courses. ESPM, UC Berkeley. Fall 2005  
Introduction to ArcView & Arc/INFO. Duke University Marine Lab, Beaufort, NC. Fall 1997

### **Other Information**

Graduate Teacher Program Certificate. 1995. Geography, CU-Boulder. 1995  
Lead Graduate Teacher. Geography, CU-Boulder. 1992-1995

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## **PRESENTATIONS (Last 5 Years)**

### **Invited Presentations/Colloquia**

Imagery at ESRI Executive Panel Session Member: *Actionable Analytics from Remote Sensing*. July 9 2017  
Our 21<sup>st</sup> Century Mapping Toolkit. BEAHRs Leadership Workshop. June 12 2017  
World Ag Expo ANR Newsmakers Session. Tulare, CA Feb 15 2017  
Geo for Public Good. GIS Day. San Francisco, CA November 16 2016  
Advances in Spatial Data Science: People, Data & Tools. ERG Colloquium. September 21 2016  
Spatial Data Science and the Environment. BEAHRs Leadership Workshop. July 20 2016  
A 21<sup>st</sup> Century Mapping Toolkit. UC Forestry Camp. June 7 2016  
New frontiers in mapping for forest science: lidar data and analysis. UC Forestry Camp. June 5 2015  
Spatial Data Science. ESPM colloquium. Berkeley CA. November 13 2014  
Data Science Environment 2014 Annual Summit. Monterey CA Oct 5-6 2014  
CNR Economic Impact of Climate and Energy Policy on Public and Private Sectors. Berkeley CA. October 3 2014  
The 21<sup>st</sup> century mapping toolkit. Center for Effective Global Action panel. Berkeley CA. August 19 2014  
NASA OpenNEX Virtual Workshop and Challenge. Menlo Park, CA. August 7 2014  
Invited Keynote at 2015 GEOBIA conference in Thessaloniki, Greece. May 22 2014  
Mapping forests and conversations about them in SNAPM. Colloquium at UC Davis. April 29 2014  
Mapping wetland productivity using remote sensing. Delta Science Program Presentation Series. April 14 2014  
Mapping for a changing California: Geoinformatics in support of extension. UC Forestry Camp. June 5 2013  
Panelist on the Berkeley Food Institute Discussion: Nutrition and Urban Food. Berkeley CA. April 16, 2013  
Panelist, Measuring and Predicting Carbon Absorbed in Reforestation. Santa Cruz, CA. February 26 2013  
New frontiers in mapping for forest science: lidar data and analysis. UC Forestry Camp. June 6 2012  
Lidar in support of adaptive management in Sierra Nevada forests. USDA Forest Service, Vallejo CA. May 22 2012

Vegetation mapping with OBIA. California Native Plant Society Meeting. San Diego CA. January 2012  
Berkeley Science Café: web mapping in the age of information. December 2011  
Plenary Paper, Ecosystem Services from Working Landscapes. Sacramento CA. September 2011  
University of Salzburg, Austria: Surviving and thriving at a large public university. May 20 2011  
University of Heidelberg, Germany: Remote sensing of forest disturbance in California. May 10 2011

### **Conference Presentations**

Uncertainty analysis of simulated fire behavior using Lidar data. 2017 AAG Annual Meeting. Boston MA  
Bringing Dark Data to Light: Historical Vegetation Data for Modern Ecology. 2016 JGU Conference. Tokyo, Japan  
Discussant for the Historical Ecology Series of Sessions. 2016 AAG Annual Meeting. San Francisco, CA  
The web for participatory adaptive management. 2014 Wildlife Society Annual Conference. Reno CA  
Sustainable ecosystems and the role of private landowners. 2012 Sustainable Natural Ecosystems, Berkeley, CA  
Lidar in support of adaptive management in Sierra Nevada forests. 2012 Annual Meeting, ASPRS. Sacramento, CA  
Geographic object based multi-scale analysis. With T Blaschke. GIScience Conf. Columbus, OH September 2012  
Modeling historic oak distribution in California using the VTM dataset and Maxent. 2012 AAG Annual Meeting, NY  
Social Media. 2011 UCANR Sustainable Food Systems Conference. Sacramento, CA

### **Guest Lectures in University Courses**

Cooperative Extension and Berkeley. Guest Lecture in ESPM 201 (Potts). April 11 2017  
Spatial Data Science and You! Guest Lecture in ESPM 100 (Baldocchi). February 27 2017  
Teaching Technology for Engagement and Outreach. Guest Lecture in ESPM (Huntsinger). November 3 2016  
California Data. Guest Lecture in ESPM 281 (Brashares). September 20, 2016  
Mapping for a changing California. MDP Guest Lecture (Getz). April 19, 2016  
Mapping for a changing California. GETH House Guest Lecture (O'Neill). April 4, 2016  
Remote sensing of California wetlands and forests. ESPM Ecosystem Ecology (Silver). April 10 2015  
Mapping California landscapes. ESPM (Feldman). October 14 2014  
The California Delta: Past, Present and Research. ESPM 15 (Firestone and Rhew). April 3, 2013

### **Selected Extension Presentations/Events**

How Drones are Changing the 21st Century Mapping Toolkit. DroneCamp. July 25 2017  
UC Berkeley Extension Showcase: Benefits of Community Engagement. January 26, 2017  
CRI Public Webinar: Land Acquisition and Ecosystem Carbon in Coastal California, October 4, 2016  
Co-organized a workshop on Ecosystem Services and Working Landscapes, Davis, CA. July 6, 2016  
Co-organized the 2016 BioBlitz at the Hopland Research and Extension Center, April 9-10 2016  
Organized Panel of innovators from industry, government, and non-profit groups for GIS Day, UC Berkeley.  
November 18, 2015  
SNAMP Final Public Meeting. Sacramento, CA. May 27 2015  
SNAMP Annual Public Meeting Webinar. November 6 2014  
Introduction to GIS and web mapping. Presentation to International Delegation from Djibouti. August 26 2014  
Lidar and spatial analysis in the Sierra Nevada Adaptive Management Project. Webinar. May 1 2014  
Public participation in the Sierra Nevada Adaptive Management Project. April 2 2014  
Workshop on Mapping for Graduate Students. November 15, 2013  
SNAMP Annual Public Meeting. Sacramento, CA. October 29 2013  
Finding the trees in the forest: using lidar for forest science and management. Webinar. March 25, 2013  
Mapping for a changing California. Redwood Region Forest Management Workshop. Eureka, CA. March 6 2013  
SNAMP Annual Public Meeting. Sacramento, CA. October 23 2012  
SNAMP Update Public Meeting. Sacramento, CA. June 22 2012  
Workshop on Lidar and Sierra Nevada forests. Oakhurst, CA May 17 2012  
Workshop on Lidar and Sierra Nevada forests. Forest Hill, CA. May 16, 2012  
GeoGirls! Workshops at the 2012 Enhancing Your Horizons conference. Berkeley. March 3 2012  
Lidar analysis in support of Adaptive Management. Presentation at the GIF Geolunch series. February 16 2012  
SNAMP Annual Public Meeting, Sacramento CA. October 27 2011  
SNAMP Public Participation Integration Team Meeting. February 2 2011

## MENTORING

### **Current Postdocs**

### **Past Postdocs (5)**

Alice Kelly 2013-2016; Patrick McIntyre 2012-2014; Jessica O'Connell 2012-2013; Feng Zhao 2010-2012; Lina Cao 2010-2011; Oliver Sonnentag 2008-2011

### **Current Ph.D. Advisees (4)**

Jenny Palomino, ESPM-UCB. Co-Advisor (with Matthew Potts). Expected Graduation: Fall 2017

Kelly Easterday, ESPM-UCB. Expected Graduation: Spring 2018

Christine Wilkinson, ESPM-UCB. Expected Graduation: Spring 2021

Chippie Kislik, ESPM-UCB. Expected Graduation: Spring 2022

### **Past Ph.D. Advisees (13)**

Anu Kramer, ESPM-UCB. Co-Advisor (with Scott Stephens). Graduated May 2016

Thesis: "Not seeing the forest for the points: Novel LiDAR metrics elucidate forest structure"

Shufei Lei, ESPM-UCB. Co-Advisor (with Alastair Illes). Graduated December 2014

Thesis: "Mapping Webs of Information, Conversation, and Social Connections: Evaluating the Mechanics of Collaborative Adaptive Management in the Sierra Nevada Forests"

Miriam Tsalyuk, ESPM-UCB. Co-Advisor (with Wayne Getz). Graduated Summer 2014

Thesis: "The Effect of Landscape Parameters on African Elephants (*Loxodonta africana*) Movement Decisions"

Sarah Lewis, ESPM-UCB. Advisor. Graduated Summer 2013

Thesis: "Geospatial strategies to optimize placement of advanced biofuels in marginal landscapes"

Marek Jakubowski, ESPM-UCB. Advisor. Graduated December 2012

Thesis: "Using lidar in wildfire ecology of the California Sierra-Nevada forests"

Lisa Schile, ESPM-UCB. Advisor. Graduated December 2012

Thesis: "Tidal Wetland Vegetation in the San Francisco Bay Estuary: Modeling Species Distributions with Sea-Level Rise"

Shasta Ferranto, ESPM-UCB. Co-Advisor (with Lynn Huntsinger). Graduated Spring 2012

Thesis: "Land use change in the working landscapes of California"

Esther Zeledon, ESPM-UCB. Advisor. Graduated Summer 2010

Thesis: "The Effect of War and Its Aftermath on Land Use and Land Cover in Jinotega Nicaragua"

Tim DeChant, PhD. ESPM-UCB. Advisor. Graduated Spring 2009

Thesis: "Merging tree physiology and landscape ecology: examining the effects of urbanization on California's oak woodlands"

Karin Tuxen, Ph.D. ESPM-UCB. Advisor. Graduated: Spring 2007

Thesis: "Functional mapping of wetland vegetation for monitoring and management"

Desheng Liu, Ph.D. ESPM-UCB. Advisor. Graduated Summer 2006

Thesis: "Spatio-temporal modeling and mapping of Sudden Oak Death in California"

Qinghua Guo, Ph.D. ESPM-UCB. Co-Advisor (with J. Battles). Graduated Summer 2005

Thesis: "Development of geospatial techniques for ecological analysis: A case study of Sudden Oak Death in California"

Kristin Byrd, PhD. ESPM-UCB. Advisor. Graduated Spring 2005

Thesis: "Temporal and Spatial Linkages between Watershed Land Use and Wetland Vegetation Response in the Elkhorn Slough Watershed, Monterey County, California"

### **Past Masters Advisees (2)**

Matt Wacker, M.S. ESPM-UCB. Graduate Advisor. Graduated Fall 2002

Thesis: "Land use vegetation change on El Dorado County, CA rangelands: implications for rangeland conservation." Currently Land Steward at Marin Agricultural Land Trust

Travis Freed, M. S. ESPM-UCB. Co-Advisor (with S. Stephens)

### **Current M.S., Ph.D. Dissertation, Orals, and/or Guiding Committees (all ESPM unless noted)**

Nina Pak. Oral Committee member. Dissertation orals: Fall 2017

Diana Moanga. Oral Committee chair. Dissertation orals: 5-16-2017

Erin Beller. GEOG. Oral Committee member. Dissertation orals: 5-8-2017

Sarah Maclean. Oral committee member. Dissertation orals: 4-2-2015

Kristin Shive. Oral committee member. Dissertation orals: 2-25-2015

Dylan Chapple. Orals committee member. Dissertation orals: 11-18-2014

Kelly Inknyan. Orals committee member. Dissertation orals: 5-6-2014

Mario Klip. Orals committee member. Dissertation orals: 4-30-2014

### **Past M.A. and Ph.D. Committees**

Guillermo Jaimes, PhD ESPM 2016. Samuel Blanchard, MA CED 2016. Lara Cushing, PhD ERG 2015. Marc Muller PhD CE 2015. Lisa Marrack, PhD ESPM 2014. Ellen Kersten, PhD ESPM 2014. John Dingman, PhD ESPM 2014. Dorothy Zayde Friday, MLA ENVPLN. 2014. Mary Matella, PhD ESPM 2013. Orien Richmond. PhD ESPM 2010. Tim Bean, MS ESPM 2010. McCrea Cobb, PhD ESPM 2010. Emily Rubridge, PhD ESPM 2009. Kim Rodriguez, PhD ESPM 2009. Suzy McIlroy PhD ESPM 2009. Brandon Collins, PhD ESPM 2008. Qi Chen, PhD ESPM 2007. Brent Pederson, PhD ESPM 2005. Kirk Klausmeyer, MS CRP 2005. David Saah, PhD ESPM 2004. Mark Spencer, PhD ESPM 2004. Faith Kearns, PhD ESPM 2003. Jeff Opperman, PhD ESPM 2002. Stuart Siegel, PhD GEOG 2002. Ben Becker, PhD ESPM 2001.

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## **UNIVERSITY SERVICE**

### **Department**

2007 – 2017 Member, ESPM Council  
2014 Member, ESPM Ecoinformatics Search Committee  
2012 – 2013 Chair, CE Specialist in Land Change Science Search Committee  
2012 Member, ESPM Vision Committee  
2007 – 2008 Member, CNR Dean's Search Committee  
2008 – 2010 Chair, ES Seminar Series  
2008 – 2010 Member, ES Seminar Series  
2002 – 2008 Chair, ESPM Web and Computing Committee  
2005 Member, ESPM Landscape Ecology Search Committee  
2004 – 2005 Member, ESPM Divisional Council  
2004 Member, Watershed Science Assistant Professor Search Committee  
2002 Member, Forest Entomology Assistant Cooperative Extension Search Committee  
2002 Member, ESPM Webmaster Search Committee

### **College**

2005 – present Faculty Director, Geospatial Innovation Facility (GIF)  
2005 – present Chair, Geospatial Innovation Facility (GIF) Oversight Committee  
2012 – present Member, University of California Fire Center Oversight Committee  
2007 Member, Blodgett Forest Manager Search Committee  
1999 – 2005 Co-Director, Center for Assessment and Monitoring of Forest and Environmental Resources  
2003 Member, CNR Directions, Opportunities and Initiatives Subcommittee  
2002 Member, CNR Web Development Committee

### **University**

2016 – 2017 Member, CNR-BSD Working Group  
2016 – 2017 Faculty Lead, Geospatial Information, Analysis and Technologies Campus Working Group  
2015 – 2016 Faculty Co-lead for Climate Change and Sustainability Course Curriculum Workshop  
2015 – 2018 Member, UC Berkeley Faculty Welfare Committee  
2012 – 2015 Member, UC Berkeley Library Committee  
2002 – 2007 Member, Friends of Cal Aquatics  
2002 Member, Women's Water Polo Coach Search Committee  
1999 Member, Program Committee for GIS at UC Berkeley

### **Statewide + UC Department of Agriculture and Natural Resources (ANR)**

2017 - 2018 Member, Steering Committee - ANR 2018 Statewide Conference  
2016 Member, AVP Search Committee  
2016 Member, Vice President of ANR Advisory Council  
2016 Member, UC ANR Project Board Academic Advisory Committee  
2015 – 2016 Member, Renewable Resources Extension Act (RREA) Technical Advisory Committee (TAC)  
2015 Chair, Search Committee, Academic Coordinator, California Institute for Water Resources  
2014 Member, Search Committee, ANR Director of Educational and Enterprise Technology  
2010 – 2017 Member, ANR Sustainable Natural Ecosystems Initiative Panel

2014	Member, California Spotted Owl Assessment Panel
2014	Member, ANR Graduate Student of Extension Committee
2014	Ex-officio Member, ANR Academic Coordinator II Search Committee
2012 – 2017	Director, ANR Statewide Program in Informatics and Geographic Information Systems
2013	Member, ANR Statewide Conference Steering Committee
2012	Member, California Agricultural Assessment Core Science Team
2011 – 2017	Reviewer, ANR Competitive Grants Program
2008	Member, ANR Strategic Planning Committee
2007	Member, ANR Natural Resources and Animal Agriculture Program Leader Position Search
2005	Member, ANR Lake Tahoe Natural Resources Advisor Position Search
2005	Member, ANR Core Issue Grants Proposal Review Board
2005 – 2010	Member, ANR Analytical Laboratory Review Board
2003 – 2005	Berkeley Cooperative Extension representative, Academic Assembly Council
2000 – 2009	Member, Hopland Research and Extension Center Research Advisory Council
2000	Member, Search Committee, Forest Advisor Humboldt/Del Norte Counties
1999 – 2010	Chair, ANR's Monitoring Landscape Change Workgroup

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## PROFESSIONAL SERVICE

### ***Society Membership & Service***

American Society for Photogrammetric Engineering and Remote Sensing (ASPRS)  
 Member since 1992, Regional Director, Northern California Division 2008-2010, President, Northern California Division 2004-2006

Association of American Geographers (AAG)  
 Member since 1990, Secretary GIS Specialty Group 1996

American Geophysical Union (AGU) member

Ecological Society of America (ESA) member

International Association of Landscape Ecology (IALE) member

NASA Earth Science Scholars Network (ESSN) member

### ***Conference Planning***

2017 – 2018 2018 ANR Statewide Program Meeting Committee

2017 Program Committee, CalGIS 2017, Oakland CA

2015 – 2016 Local Arrangement Committee: Annual Meeting of the Association of American Geographers

2008 – 2015 Co-organization of GIS Day on the UC Berkeley campus with GIF, BAAMA and other groups

2014 Program Committee, GIScience 2014, Vienna Austria

2013 Scientific Committee, GEOBIA conference 2014, Thessaloniki, Greece

2012 Program Committee, GIScience 2012, Columbus OH

2012 Scientific Committee, GEOBIA, 2012, Rio Brazil

2012 Technical Program co-chair, ASPRS 2012 National Conf. Planning Committee, Sacramento CA

2011 Program Committee, Sustainable Natural Ecosystems Initiative Conference, Sacramento CA

2010 Programme Committee, 18th International Conf. on Geoinformatics 2010, Beijing China

2008 Technical Planning Committee, IEEE International Geoscience & Remote Sensing Symposium

2008 Science Committee, GEOBIA Analysis Conference, University of Calgary, Canada

2007 Chair, Object-based Image Analysis Symposium Planning Committee, Berkeley CA

2007 GIS in Agricultural Symposium (part of CalGIS) Planning Committee, Oakland CA

2006 ANR Orientation Conference Committee, Sacramento CA

2006 ASPRS 2006 National Conference Planning Committee Reno NV

### ***Other Service Activities***

2016 – 2017 Member, GreenInfo Network Board of Directors

2015 – 2017 Co-chair, Mapping and Tools subgroup of the Working Landscapes Team, CA Economic Summit

2014 – 2015 Member, CA Spotted Owl Conservation Assessment Science Team

2013 – 2015 Member, Eel River CZO Advisory Board

2013 – 2014 Member, NASA HyspIRI Aquatic Studies Group (HASG)

2012 – 2015 Member, Vegetation Mapping and Remote Sensing Advisory Group, Sonoma County

2009 Member, Steering Committee of the HABISTAT project, Belgium

2008 – 2009 Member, Science Review Panel of the Puget Sound Nearshore Ecosystem Restoration Project

2008 Reviewer, USDA Forest Service, PSW, Sudden Oak Death/*P. ramorum* research  
 2007 Member, ASPRS Davidson Awards Committee  
 2006 Member, Monitoring Review Team, San Francisco Estuary Invasive *Spartina* Project (ISP)  
 2004 – 2006 Member, Wetland Tracker Steering Committee  
 2000 – 2005 Member, Monitoring Group of the San Francisco Wetlands Restoration Program  
 2004 Chair, Outreach Committee of the Integrated Regional Wetland Monitoring Program

#### **Journal Editorial Boards**

2017 – 2019 Editorial Board, *Drones*  
 2015 – 2018 Associate Editor, *Environmental Management*  
 2014 – 2017 Editorial Board, *Journal of Land Use Science*  
 2010 – 2016 Editorial Board, *Annals of the Association of American Geographers: Environmental Sciences* section  
 2007 – 2010 Editorial Board, *Annals of the Association of American Geographers: Methods, Models, and Geographic Information Systems* section  
 2006 – 2008 Associate Editor, *Wetlands*

#### **Journal & Book Reviewer**

<i>Agriculture, Ecosystems and Env</i>	<i>Geocarto International</i>	<i>Landscape Ecology</i>
<i>Annals of the AAG</i>	<i>Global Change Biology Bioenergy</i>	<i>Landscape and Urban Planning</i>
<i>Biological Conservation</i>	<i>International J of Env and Pollution</i>	<i>Methods in Ecology and Evolution</i>
<i>Canadian J of Forest Research</i>	<i>International J of Geo Info Sci</i>	<i>Optics Communications</i>
<i>Carbon Balance and Management</i>	<i>GIScience and Remote Sensing</i>	<i>PERS</i>
<i>Computers and Geosciences</i>	<i>Intl J of Appl Earth Obs and GeInf</i>	<i>Plant Pathology</i>
<i>Conservation Biology</i>	<i>International J of Remote Sensing</i>	<i>PLOS Neglected Tropical Diseases</i>
<i>Ecological Applications</i>	<i>J of Applied Ecology</i>	<i>Rangelands</i>
<i>Env Modelling and Software</i>	<i>J of Biogeography</i>	<i>Remote Sensing</i>
<i>Env, Development and Sustainability</i>	<i>J of Coastal Conservation</i>	<i>Remote Sensing of Environment</i>
<i>Environmental Practice</i>	<i>J of Environmental Management</i>	<i>Remote Sensing Letters</i>
<i>ESRI Press</i>	<i>J of Land Use Science</i>	<i>Restoration Ecology</i>
<i>Estuaries</i>	<i>J of Plant Ecology</i>	<i>Science of the Total Environment</i>
<i>Estuarine, Coastal and Shelf Science</i>	<i>J of Tropical Ecology</i>	<i>Sensors</i>
<i>European J of Remote Sensing</i>	<i>J of Vegetation Science</i>	<i>Springer Publications</i>
<i>Forest Ecology and Management</i>	<i>J of Wildlife Management</i>	<i>Wetlands</i>
<i>Forests</i>	<i>Kluwer Academic Publishers</i>	<i>Urban Forestry and Urban Greening</i>
<i>Frontiers in Environmental Science</i>	<i>Knowledge and Mgmt of Aq Systems</i>	

#### **Funding Agency Reviewer**

2012 Science Foundation Ireland Research Centres  
 2011 National Science Foundation (NSF), Geography and Spatial Sciences  
 2011 NASA, U.S. Geological Survey, National Park Service, U.S. Fish and Wildlife Service, Smithsonian Institution  
 2008 Belgian Earth Observation Program, Support to Exploitation and Research of Earth Observation Data  
 2009 South Bay Salt Pond RFP  
 2009 UC Discovery Grant Program  
 2005 National Science Foundation (NSF), Geography and Regional Science Division  
 2005 Science Foundation of Ireland (SFI)  
 2005 Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET)  
 2003 International Science and Technology Center (ISTC), Moscow, Russia  
 2003 Moldovan-U.S. Bilateral Grants Program of the U.S. Civilian Research and Development Foundation (CRDF)  
 2003 Natural Environmental Research Council (NERC), London, UK  
 2003 NOW-COUNCIL Earth and Life Sciences, The Netherlands  
 2003 South African National Research Foundation (NRF)

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#### **OTHER ACTIVITIES**

2015 Member, Women's Masters 50+ Water Polo National Championship Team  
 2008, 2011-2013 Member, Women's Masters 40+ Water Polo National Championship Team  
 2009 – 2012 Member, USWP Hall of Fame Committee  
 2008 Inducted into the Berkeley High School Athletic Hall of Fame  
 2007 Inducted into the University of California Athletic Hall of Fame  
 2006 – 2009 Member, USA Water Polo Judicial Committee



2006 Member, World Champion Masters 30+ Women's Water Polo Team  
2006 Inducted into the US Water Polo Hall of Fame  
2004 – 2008 Coach, Oakland-Mills Masters Women's Water Polo Team  
1999 – present Member, Oakland-Mills Masters Women's Water Polo Team  
2002 Member, Team Liquid Trans-Tahoe Relay Swim Team  
1999 – 2003 Volunteer Coach, UC Berkeley's Women's Water Polo Team  
1999 Scout Coach, United States National Women's Water Polo Team  
1997 – 1998 Member, United States National Women's Water Polo Team  
1985 – 1994 Member, United States National Women's Water Polo Team  
1992 – 2000 Athlete Representative, Executive Council of U. S. Water Polo, Inc  
1992 – 1995 Coach, CU Men's and Women's Water Polo Clubs  
1985 – 1986 Member, Great Britain National Women's Water Polo Team

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