

## Curriculum Vitae



### Personal Information:

Bell, Tom William  
5843 Ellison Hall, UC Santa Barbara, Santa Barbara, CA 93106  
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### Education:

- Ph.D. Interdisciplinary Program in Marine Science, University of California, Santa Barbara, September 2016 *advisor* – Dr. David Siegel
- M.Sc. Biology (Ecology), San Diego State University, December 2011 *advisor* – Dr. Walter Oechel
- B.A. Integrative Biology, B.A. Legal Studies, University of California, Berkeley, December 2006

### Professional Appointments:

- Project Scientist, University of California, Santa Barbara, 2017 – *present*
- Postdoctoral Scholar, University of California, Los Angeles, 2016 – *present*
- Postdoctoral Scholar, University of Alaska Southeast, 2016 – *present*

### Research Grants or Fellowships:

*Future (Awarded Oct 2018, Starting Jan 2019):*

- Sea Grant California – “Benefits Beyond Biomass: Biophysical feedbacks within Marine Protected Areas may promote ecosystem resilience in the face of global climate change.” Role: Co-PI. PI: A. Stier. Co-PIs: T. Bell, K. Nickols, N. Nidzieko (\$250,000)

*Active:*

- Coastal Conservancy – “Determining habitat extent and population growth of sea otter recolonization in Northern California.” Role: Co-PI. PI: B. Hughes. Co-PIs: T. Bell, M. Castorani, T. Tinker (\$85,000)
- Advanced Research Projects Agency – Energy: Macroalgae Research Inspiring Novel Energy Resources, (2018 – 2020) “Scalable Aquaculture Monitoring System (SAMS).” Role: Co-PI, **Led the writing and formation of the proposal.** PI: D. Siegel. Co-PIs: T. Bell, K. Cavanaugh, R. Miller, N. Nelson, N. Nidzieko, D. Reed (\$2,004,000)
- National Science Foundation Coastal SEES: Science, Engineering and Education for Sustainability, (2016 - 2020) “Apex predators, ecosystems and community sustainability (APECS) in coastal Alaska.” Role: Contributed to writing proposal for postdoctoral position. PIs: G. Eckert, H. Pearson, M. Stekoll, B. Vander Naald, S. Langdon (\$1,670,000)
- Point Reyes National Seashore - U.S. National Park Service Grant, (2016 - 2019) “Rapid, large-scale eelgrass monitoring using high-resolution (UAS – drone) remote sensing.” Role: Principal Investigator. PIs: T. Bell, M. Castorani (\$22,000)

*Completed:*

- UC Affiliates Graduate Dissertation Fellowship, (2015) “Giant kelp biomass and net primary productivity dynamics are associated with regional patterns of physiological condition.” Role: Principal Investigator. (\$3,000)
- Brython Davis Endowment Graduate Fellowship, (2015) “Scale dependence of bottom-up vs. demographic control on the dynamics of giant kelp forests” Role: Principal Investigator. (\$13,500)
- NASA Earth and Space Science Fellowship, (2012 - 2015) “Hyperspectral remote sensing of giant kelp in the Santa Barbara Channel.” Role: Principal Investigator. (\$90,000)
- Edna Bailey Sussman Internship, (2009) “Variation of Carbon Exchange over Multiple Temporal Scales in an Arid Shrub Ecosystem near La Paz, Baja California Sur, Mexico.” Role: Principal Investigator. (\$8,000)

**Publications:** (PDF copies available at [tomwbell.net](http://tomwbell.net))

Published:

2018

- (23) **Bell, T.W.**, Allen, J.A., Cavanaugh, K.C., Siegel, D. A. (*in press*), Three decades of variability in California's giant kelp forests from the Landsat satellites. *Remote Sensing of Environment*.
- (22) Lester, S.E., Stevens, J.M., Gentry, R.R., Kappel, C.V., **Bell, T.W.**, Costello, C.J., Gaines, S.D., Kiefer, D.A., Maue, C.C, Rensel, J.E., Simons, R.D., Washburn, L., White, C. (2018), Marine spatial planning makes room for offshore aquaculture in a crowded coastal zone. *Nature Communications*, 9:945, 1-13.
- (21) Friedlander, A.M., Ballesteros, E., **Bell, T.W.**, Giddens, J., Henning, B., Hüne, M., Muñoz, A., Salinas-de-León, P., Sala, E. (2018), Marine biodiversity at the end of the world: Cape Horn and Diego Ramírez islands. *PLOS ONE*, 13, e0189930.
- (20) **Bell, T.W.**, Reed, D.C., Siegel, D. A. (2018), Regional patterns of physiological condition determine giant kelp primary production dynamics. *Limnology and Oceanography*, 63, 472-483.
- (19) Lamy, T., Reed, D.C., Rassweiler, A.R., Siegel, D.A., Kui, L., **Bell, T.W.**, Simons, R., Miller, R.J. (2018) Scale-specific driver of kelp forest communities. *Oecologia*, 186, 217-233.

2017

- (18) Biederman, J.A., Scott, R.L, **Bell, T.W.**, Bowling, D., Dore, S., Garatuza-Payan, J., Kolb, T.E., Krishnan, P., Krofcheck, D., Litvak, M.E., Maurer, G.E., Meyers, T., Oechel, W.C., Papuga, S., Ponce-Campos, G.E., Rodriguez, J., Vargas, R., Watts, C., Yezpez, E.A., Goulden, M.L. (2017) CO<sub>2</sub> exchange and evapotranspiration across dryland ecosystems of southwestern North America. *Global Change Biology*, 23, 4204-4221.
- (17) Kelly, P., **Bell, T. W.**, Reisinger, A., Spanbauer, T., Bortolotti, L., Bentrup, J., Briseño-Avena, C., Dong, X., Flanagan, A., Follett, E., Grosse, J., Guy-Haim, T., Holgerson, M., Hovel, R., Luo, J., Millette, N., Mine, A., Muscarella, M., Oliver, S., Smith, H. (2017) Ecological Dissertations in the Aquatic Sciences (Eco-DAS): An excellent networking and professional development opportunity for early career aquatic scientists. *Limnology and Oceanography Bulletin*, 26, 25-30.
- (16) Teck, S., Lorda, J., Shears, N.T., **Bell, T.W.**, Cornejo-Donoso, J., Caselle, J.E., Hamilton, S.L., Gaines, S.D. (2017) Disentangling the effects of fishing and environmental forcing on demographic variation in an exploited species. *Biological Conservation*, 209, 488-498.
- (15) Guy-Haim, T., Alexander, H., **Bell, T.W.**, Bier, R., Bortolotti, L., Briseño-Avena, C., Dong, X., Flanagan, A., Grosse, J., Grossmann, L., Hasnain, S., Hovel, R., Johnston, C., Miller, D., Muscarella, M., Noto, A., Reisinger, A.J., Smith, H., Spanbauer, T., Stamieszkin, K. (2017) How do experimental characteristics of aquatic mesocosms change the direction and magnitude of effect sizes in climate change research? A systematic review protocol. *Environmental Evidence*, 6, 1-6.
- (14) Wheeler, S.G., Anderson, T.W., **Bell, T.W.**, Morgan, S.G., Hobbs, J.A. (2017) Regional productivity predicts individual growth and recruitment of rockfishes in a northern California upwelling system. *Limnology and Oceanography*, 62, 754-767.
- (13) Cabral, R.B., Gaines, S.D., Johnson, B., **Bell, T.W.**, White, C. (2017), Redistribution of fishing and non-fishing effort after the implementation of marine protected areas: Identifying drivers for informing expectations in marine spatial planning. *Ecological Applications*, 27, 416-428.
- (12) Castorani, M.C.N., Reed, D.C., Raimondi, P.T., Alberto, F., **Bell, T.W.**, Cavanaugh, K.C., Siegel, D.A., Simons, R. (2017) Fluctuations in population fecundity drive variation in demographic connectivity and metapopulation dynamics. *Proceedings of the Royal Society B*, 284, 2016208.
- (11) Gentry, R.R., Lester, S.E., Kappel, C.V., Stevens, J., White, C., **Bell, T.W.**, Gaines, S.D. (2017) Offshore Aquaculture: Spatial Planning Principles for Sustainable Development. *Ecology and Evolution*, 7, 733-743.
- (10) Koweek, D., Nickols, K.J., Leary, P., Litvin, S.Y., **Bell, T.W.**, Luthin, T., Mucciarone, D.A., Dunbar, R.B., Lummis, S. (2017) A year in the life of a central California kelp forest: physical and biological insights into carbon cycling. *Biogeosciences*, 14, 31-44.

2016

- (9) Reed, D.C., Washburn, L., Rassweiler, A., Miller, R., **Bell, T.W.**, Harrer, S. (2016) Extreme warming challenges sentinel status of kelp forests as indicators of climate change. *Nature Communications*, 7, 13757.

- (8) Biederman, J.A., Scott, R.L., Goulden, M.L., Vargas, R., Litvak, M.E., Kolb, T.E., Yepez, E.A., Oechel, W.C., Blanken, P.D., **Bell, T.W.**, Garatuza-Payan, J., Maurer, G.E., Dore, S., Burns, S.P. (2016) Contrasting effects of fast interannual and slow climatic precipitation variability on ecosystem carbon balance. *Global Change Biology*, 22, 1867-1879.
- (7) Young, M.A., Cavanaugh, K.C., **Bell, T.W.**, Raimondi, P.T., Edwards, C., Drake, P., Erikson, L., Storlazzi, C. (2016) Explaining and predicting spatial patterns of persistence of giant kelp, *Macrocystis pyrifera*, forests in central California. *Ecological Monographs*, 86(1), 45-60.
- (6) Morton, D.N., **Bell, T.W.**, Anderson, T.W. (2016) Spatial synchrony of amphipods in giant kelp forests. *Marine Biology*, 163(2), 1-11.

#### 2015

- (5) Castorani, M.C.N., Reed, D.C., Alberto, F., **Bell, T.W.**, Simons, R. Cavanaugh, K.C., Siegel, D.A., Raimondi, P.T. (2015) Connectivity predicts local extinction and colonization in a marine metapopulation. *Ecology*, 96, 3142-3152.
- (4) **Bell, T.W.**, Cavanaugh, K.C., Reed, D.C., Siegel, D.A. (2015) Geographical variability in the controls of giant kelp biomass dynamics. *Journal of Biogeography*, 42, 2010-2021.
- (3) Johansson, M.L., Alberto, F., Reed, D.C., Raimondi, P.T., Coelho, N.C., Young, M.A., Drake, P.T., Edwards, C.A., Cavanaugh, K.C., Assis, J., Ladah, L.B., **Bell, T.W.**, Coyer, J.A., Siegel, D.A., Serrão, E.A. (2015) Seascape drivers of *Macrocystis pyrifera* population genetic structure in the eastern North Pacific. *Molecular Ecology*, 24, 4866-4885.
- (2) **Bell, T.W.**, Cavanaugh, K.C., Siegel, D.A. (2015) Remote monitoring of giant kelp biomass and photosynthetic condition: An evaluation of the potential for the Hyperspectral Infrared Imager (HyspIRI) mission. *Remote Sensing of Environment*, 167, 218-228.

#### 2012

- (1) **Bell, T.W.**, Menzer, O., Troyo-Diéquez, T., Oechel, W. (2012) Variation of Carbon Exchange over Multiple Temporal Scales in an Arid Shrub Ecosystem near La Paz, Baja California Sur, Mexico. *Global Change Biology*, 18, 2570-2582.

#### In review or revision:

- Sainz, J., Di Lorenzo, E., **Bell, T.W.**, Gaines, S., Miller, R., Lenihan, H. *in revision at Frontiers of Marine Science*, Spatial planning of Marine Aquaculture under Climate Decadal Variability: A case study for Mussel Farms in California.

#### In prep:

- **Bell, T.W.**, Cavanaugh, K.C., Okin, G. *close to submission to Remote Sensing of Environment (available by request)*, Impact of water characteristics on the discrimination of benthic cover in and around coral reefs from imaging spectrometer data.
- **Bell, T.W.**, Siegel, D.A. *close to submission to Nature (available by request)*, Scale dependence of bottom up vs. demographic controls on the dynamics of giant kelp forests.
- **Bell, T.W.**, Dong, X., Flanagan, A., Hasnain, S., Johnston, C., Noto, A., Castorani, M.C.N., Cavanaugh, K.C., Siegel, D.A. *in prep for Ecology*, Differences in nutrient delivery structure multiple giant kelp ecotypes across space.
- **Bell, T.W.**, Tinker, M.T., Gill, V., Stekoll, M.S., Moll, A., Pearson, H. *in prep for Marine Ecology Progress Series*, Sea Otter Recolonization Associated with Regional Increase in Giant Kelp Canopy.

#### Technical Publications:

- Turpie, K.R., Abelev, A., Babin, M., Bachmann, C., **Bell, T.W.**, Brando, V., Byrd, K., Dekker, A., Devred, E., Forget, M-H., Goodman, J., Guild, L., Hochberg, E., Hu, C., Young-Heon, J., Kelly, M., Klemas, V., Lee, Z., Moisan, T., Moses, W., Muller-Karger, F., Palacios, S., Philpot, B., Toro-Farmer, G., Yu, Q. (2015) Coastal and inland aquatic data products for the Hyperspectral Infrared Imager (HyspIRI), NASA.
- Turpie, K.R., Ackelson, S., **Bell, T.W.**, Dierssen, H., Goodman, J., Green, R., Guild, L., Hochberg, E., Klemas, V.V., Lavender, S., Lee, C., Minnet, P., Muller-Karger, F., Ortiz, J., Palacios, S., Thompson, D.R., Zimmerman, R. (2015) Global observations of coastal and inland aquatic habitats, NASA.

- Turpie, K.R., Allen, D.W., Ackelson, S., **Bell, T.W.**, Cavanaugh, K., Dierssen, H., Fisher, J.B., Goodman, J., Guild, L., Hochberg, E., Klemas, V.V., Lavender, S., Lee, C., Muller-Karger, F., Ortiz, J., Palacios, S., Thompson, D.R., Zimmerman, R. (2015) New need to understand changing coastal and inland aquatic ecosystem services, Decadal survey for earth science and applications from space, NASA.

### Datasets:

- **Bell, T.W.**, Cavanaugh, K. C. and D.A. Siegel. (2017) SBC LTER: Time series of quarterly NetCDF files of kelp biomass in the canopy from Landsat 5, 7 and 8, 1984 - 2016 (ongoing). Santa Barbara Coastal LTER.
- Castorani, M.C.N., Reed, D.C., Raimondi, P.T., Alberto, F., **Bell, T.W.**, Cavanaugh, K.C., Siegel, D.A. Kelp metapopulations: Semi-annual time series of giant kelp patch area, biomass, and fecundity in southern California, 1996-2006. Santa Barbara Coastal LTER.

### Mentoring:

Total: 21 Undergraduates, 2 High School Students, 4 Graduate Students

\* indicates funded Research Experience for Undergraduates (REU)

- Giant Kelp Biogeography Project – Alex Brotman\*, Ahna Miller\*, Raymond Akol\*, Kevin Selder\*, Scott Percival, Jessica Conti, Sarah Aisawa, Erica Kim, Evan Cole, Mayra Fulgencio, Sam Fragoso, Keyon Lemus, Max James, Gabriel Leoni, Rolando Araujo, Seth Gorelik, Andreas Pappas
- British Columbia Kelp Project – Olympia Koziatek (Simon Frasier University), Luba Reshitnyk (Hakai Institute)
- Tasmania Kelp Project – Claire Butler (University of Tasmania)
- Landsat 8 OLI Physiology Kelp Project – Niky Taylor (University of California, Santa Cruz)
- Cortes Bank Kelp Project – Ben Schock\*
- Chile Kelp Project – Sarah Amiri
- Checleset Bay Kelp Project – Lucy Garibian
- Sitka Sound Kelp Project – Annaliese Moll (University of Alaska Southeast)
- LTER Understory Kelp Project – Luiza M., Erin H. (Dos Pueblos High School)

### Teaching Experience:

- Teaching Associate (**Instructor of Record**) – Biogeography: The Study of Plant and Animal Distributions (Geography 167), UCSB, Santa Barbara, CA, June – July 2016
- Teaching Associate (**Instructor of Record**) – Marine Resources of the CA Current (Geography 158), UCSB, Santa Barbara, CA, September – December 2015
- Teaching Associate (**Instructor of Record**) – Intermediate Remote Sensing Techniques (Geography 115C), UCSB, Santa Barbara, CA, April – June 2015
- Teaching Assistant – Marine Resources of the CA Current (Geography 158), UCSB, Santa Barbara, CA January - March 2012
- Laboratory Instructor – Human Anatomy, SDSU, San Diego, CA August 2008 – May 2011
- Invited Guest Lectures (*many* at UCSB – details upon request)

### Honors, Awards and Societies:

- UCSB GSA Travel Award 2016
- ERI Travel Award 2013, 2014, 2015
- IRA Travel Scholarship 2009, 2010, 2011
- SDSU Farris/EPEF Travel Award 2009, 2010, 2011
- SDSU Graduate Travel Award 2009, 2010, 2011
- Jordan D. Covin Memorial Scholarship 2010
- Mabel Myers Memorial Scholarship 2009
- Western Society of Naturalists 2009 – 2018
- American Geophysical Union 2014 – 2018
- Association for the Sciences of Limnology and Oceanography 2014 – 2018
- European Geosciences Union 2011

## Professional Service:

- Using Drones for High Spatial and Temporal Resolution Long Term Observations Workshop – Role: *Workshop Lead*, Long Term Ecological Research (LTER) All Scientists Meeting, Asilomar, CA, October 2018
- R Workshop, Role: *Instructor*, Software Carpentry R Language Workshop, UCSB, Spring 2015
- Faculty Search Committee, Role: *Graduate Student Representative*, Physical Oceanography, UCSB, Spring 2015
- Faculty Search Committee, Role: *Graduate Student Representative*, Marine Carbon Cycle Modeling, UCSB, Spring 2014
- HyspIRI Mission Coastal and Inland Community Executive Committee, 2014 - *present*
- HyspIRI Mission Aquatic Studies Group, 2012 - *present*
- WSN Student Committee, 2014 – 2015
- EEMB Graduate Student Advisory Committee, 2012 – 2015
- W.E.B. Du Bois Event Graduate Representative, 2012 – 2014
  
- *Reviewer for*: U.S. NSF Grant Proposals – Biological Oceanography, PLOS ONE, Remote Sensing of Environment, Soil Science of America, Marine Ecology Progress Series, Frontiers in Marine Science, Optics Express, Agricultural and Forest Meteorology, Applied Optics, Applied Sciences, Phycological Research

## Workshop Attendance:

- Entering Mentoring Workshop, LTER All Scientists Meeting, Asilomar, CA, October 2018
- Ecological Dissertations in the Aquatic Sciences XII, University of Hawaii, Manoa, October 2016
- Pacific Anomalies Workshop II, University of Washington, Seattle, WA, January 2016
- Pacific Anomalies Workshop I, Scripps Institute of Oceanography, La Jolla, CA, May 2015
- Data Management Workshop, LTER Main Office, U. New Mexico, Albuquerque, NM, August 2012
- CICESE/SDSU Science Meeting, CICESE, Ensenada, Baja California, Mexico, March 2008, 2009

## Professional Presentations as lead author (\*\* = invited; ^^ = session chair):

- October 2018: Duck Unlimited Canada, Winnipeg, Manitoba, Canada\*\*  
Spatiotemporal Trends in Vegetation and Water over Diverse Scales through Remote Sensing
- October 2018: LTER All Scientists Meeting, Asilomar, CA  
Separating Potential Global Change Trends from Low Frequency Climate Oscillations in Northeast Pacific Kelp Forests (*poster*)
- June 2018: Association for the Sciences of Limnology and Oceanography Summer Meeting, Victoria, British Columbia, Canada^^  
Separating Potential Global Change Trends from Low Frequency Climate Oscillations in Northeast Pacific Kelp Forests
- April 2018: University of Virginia, Dept. Environmental Sciences Seminar Series, Charlottesville, VA\*\*  
Insights into the dynamics of giant kelp forests across large spatiotemporal scales
- March 2018: UCSB Ecology, Evolution & Marine Biology Seminar Series, Santa Barbara, CA\*\*  
Insights into the dynamics of giant kelp forests across large spatiotemporal scales
- February 2018: Ocean Sciences Meeting, Portland OR  
Using Simulated Hyperspectral Data to Identify the Practical Limits of Discrimination of Coral Reef Benthic Composition (*poster*)
- February 2018: University of Alaska Fisheries Seminar Series, Juneau, AK\*\*  
Insights into the dynamics of giant kelp forests across large spatiotemporal scales
- November 2017: Western Society of Naturalists, Pasadena, CA^^  
Sea Otter Recolonization Associated with Regional Increase in Giant Kelp Canopy
- October 2017: HyspIRI Science Workshop, Cal Tech, Pasadena, CA  
Using HyspIRI to Identify Benthic Composition and Bleaching in Shallow Coral Reef Ecosystems
- September 2017: Bodega Bay Marine Laboratory Seminar Series, Bodega Bay, CA\*\*  
UAV Eelgrass Surveys Over Drakes Estero, Point Reyes National Seashore, w/ Max Castorani
- August 2017: Ecological Society of America, Portland, OR\*\*  
Hyperspectral remote sensing: Unlocking process in a marine foundation species

- August 2017: Ecological Society of America, Portland, OR  
Scale dependence of bottom-up versus demographic controls on the dynamics of giant kelp forests
- May 2017: NASA Biodiversity and Ecological Forecasting Meeting, Washington D.C.  
Using HypsIRI to Identify Benthic Composition and Bleaching in Shallow Coral Reef Ecosystems
- November 2016: Western Society of Naturalists, Monterey, CA  
Scale dependence of bottom-up vs. demographic controls on the dynamics of giant kelp forests
- February 2016: Ocean Sciences Meeting, New Orleans, LA  
Assessment of Giant Kelp Physiological State Using Airborne Hyperspectral Imagery
- January 2016: Pacific Anomalies Workshop II, Seattle, WA  
Decreases in Standing Biomass and Physiological State of Giant Kelp Canopy During the 2014-2015 Warming Event in the Santa Barbara Channel (*poster*)
- November 2015: Western Society of Naturalists, Sacramento, CA  
Long-term Monitoring of Giant Kelp Biomass Dynamics Exposes Nonlinear Relationships with Environmental Drivers
- October 2015: SBC LTER Midterm Review, UCSB, Santa Barbara, CA  
Regional dynamics of giant kelp using remote sensing
- October 2015: HypsIRI Science Workshop, Cal Tech, Pasadena, CA  
Potential of the HypsIRI mission for monitoring the physiological condition of giant kelp forests
- June 2015: International Ocean Colour Meeting, San Francisco, CA  
Remote monitoring of giant kelp biomass and physiological condition: An evaluation of the potential for the Hyperspectral Infrared Imager (HypsIRI) mission (*poster*)
- December 2014: American Geophysical Union, San Francisco, CA  
Remote monitoring of giant kelp biomass and photosynthetic condition: An evaluation of the potential for the Hyperspectral Infrared Imager (HypsIRI) mission (*poster*)
- November 2014: Western Society of Naturalists, Tacoma, WA  
Temporal and spatial variability in the photosynthetic condition of giant kelp
- November 2014: Western Society of Naturalists, Tacoma, WA  
Remote monitoring of giant kelp biomass and photosynthetic condition: An evaluation of the potential for the Hyperspectral Infrared Imager (HypsIRI) mission (*poster*)
- November 2014: SBC LTER All Scientists Meeting, UCSB, Santa Barbara, CA  
Temporal and spatial variability in the photosynthetic condition of giant kelp
- October 2014: HypsIRI Science Workshop, Cal Tech, Pasadena, CA  
Remote monitoring of giant kelp biomass and photosynthetic condition: An evaluation of the potential for the Hyperspectral Infrared Imager (HypsIRI) mission
- November 2013: Western Society of Naturalists, Oxnard, CA  
Primary drivers of giant kelp biomass in California
- November 2013: SBC LTER All Scientists Meeting, UCSB, Santa Barbara, CA  
Primary drivers of giant kelp biomass in California
- May 2013: HypsIRI Science Symposium, Goddard Space Flight Center, Greenbelt, MD  
Hyperspectral Remote Sensing of Giant Kelp in the Santa Barbara Channel
- March 2013: LTER Student Symposium, Scripps Institute of Oceanography, La Jolla, CA  
Hyperspectral Remote Sensing of Giant Kelp in the Santa Barbara Channel
- November 2012: Western Society of Naturalists, Seaside, CA  
Seasonal biomass patterns of giant kelp across its dominant range in the NE Pacific
- September 2012: LTER All Scientists Meeting, Estes Park, CO  
Regional variability of giant kelp canopy biomass dynamics over its dominant range in the NE Pacific (*poster*)
- March 2012: Oxford Interdisciplinary Desert Conference, Oxford, England  
Variation of Carbon Exchange over Multiple Temporal Scales in an Arid Shrub Ecosystem near La Paz, Mexico
- September 2011: MEDECOS XII, UCLA, Los Angeles, CA  
Spatial and Temporal Differences of Leaf Litter Transport in an Arid Shrub Ecosystem near La Paz, Mexico
- April 2011: European Geosciences Union, Vienna, Austria  
Vertical and Lateral Carbon Flux in Leaf Litter in a Larrea/Carbon Ecosystem near La Paz, Mexico

- November 2009: Western Society of Naturalists, Seaside, CA  
Comparative Carbon Flux in Marine and Terrestrial Subtropical Ecosystems in Magdalena Bay, Mexico

### Technical Skills:

- AAUS Scientific Diver (>100 scientific dives)
- FAA UAS (Drone) Pilot
- Matlab (*Advanced*)
- R (*Advanced*)
- ENVI (*Advanced*)
- Python (*Intermediate*)
- IDL (*Intermediate*)
- Arduino - Microcontrollers (*Intermediate*)

### Outreach:

- Scientist for FloatingForests.org  
Global giant kelp forest mapping by citizen scientists

### Press:

- *Cultivating Marine Biomass*, UCSB Current  
September 19, 2017  
<http://www.news.ucsb.edu/2017/018267/cultivating-marine-biomass>
- *Kelp Helping Kelp*, UCSB Current  
January 25, 2017  
<http://www.news.ucsb.edu/2017/017614/getting-little-help-their-friends>
- *Kelp Beats the Heat*, UCSB Current; ScienceDaily; Eurekalert  
December 13, 2016  
<http://www.news.ucsb.edu/2016/017468/kelp-beats-heat>
- *Finding Floating Forests: It Takes an Online Village to Map Massive Kelp*, NASA Earth Observatory  
(*Feature Article*), December 19, 2014  
<http://earthobservatory.nasa.gov/Features/FloatingForests/>
- NASA Earth Observatory: Image of the Day  
January 5, 2015 – *Floating Forests Revealed*  
<http://earthobservatory.nasa.gov/IOTD/view.php?id=85023>  
  
January 12, 2015 – *Finding Cortez*  
<http://earthobservatory.nasa.gov/IOTD/view.php?id=85059>  
  
January 16, 2015 – *Kelp Losing Their Grip on the Seafloor*  
<http://earthobservatory.nasa.gov/IOTD/view.php?id=85105>