Timu W. Gallien

Assistant Professor
Civil and Environmental Engineering
University of California, Los Angeles
Los Angeles, CA 90095

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RESEARCH INTERESTS

Urban coastal flood prediction, Hydrodynamic modeling, Wave runup and overtopping, Coastal hazards, Sea level rise, Flood control infrastructure and mitigation methods, Coastal hydrodynamic and topographic observations, Beach morphodynamics and groundwater, Nature-based Infrastructure, Compound flooding

EDUCATION

Postdoctoral Scholar, Scripps Institution of Oceanography, January, 2013 - July, 2016
Advisor: Robert Guza

Ph.D., University of California, Irvine, Civil Engineering, December, 2012
Advisor: Brett Sanders

M.S., Purdue University, Agricultural and Biological Engineering, May, 2008
Advisor: Gary Krutz

B.S., Purdue University, Agricultural Engineering, 1996
Power and Machinery Specialty

RESEARCH EXPERIENCE

University of California, Los Angeles, CA, 2016-present

Develop high-resolution coastal flood prediction methodologies responsive to bay dynamics, beach morphology, permanent and temporary flood control infrastructure, tides, surge, waves, sea level rise and groundwater. Quantify spectral wave field uncertainty effects on overtopping estimates and backshore flooding. Observe, model and evaluate living shoreline projects.

Scripps Institution of Oceanography University of California, San Diego, CA, 2013-2016

Develop integrated hydrodynamic coastal flood prediction methodologies responsive to beach dynamics, permanent and temporary flood control infrastructure, tides, surge, waves, sea level rise and groundwater. Observe, model and evaluate anthropogenically modified beaches. Design, develop and lead field observations of waves, beaches, water table, runup and flooding.

University of California, Irvine, CA, 2008-2012

Developed a coupled wave, surge and tidally forced two dimensional hydrodynamic modeling methodology concomitantly resolving overtopping volumes and sea walls. Designed, developed and led field studies for observation of localized winter storm conditions. Deployed wave, tide and current gauges. Developed and executed protective berm erosion study using terrestrial LiDAR. Developed validation data surfaces for coastal flood events.

Purdue University, West Lafayette, IN, 2006-2008

Designed, developed and tested a novel capacitive polymer sensor for monitoring hydraulic seal failure. This work resulted in patent 7,977,952 B2 titled “Polymeric Structures and Methods for Producing and Monitoring Polymeric Structures”.

TEACHING EXPERIENCE

University of California, Los Angeles

Engineering Geomatics (CEE129L), Hydrologic Modeling (CEE157A), Water Resources Engineering (CEE151), Coastal Engineering (CEE158/CEE258), Coastal Process Modeling (CEE298), Hydrology and Water Resources Seminar (CEE200).

ADVISING

Postdoc

Yeulwoo Kim, 6/2019-2/2021, Assistant Professor, Pukyong National University
Nikos Kalligeris, 9/2017-4/2019, Principal Researcher, National Observatory of Athens

PhD *(ATC signifies Advanced to Candidacy)*

Maria Winters, Fall 2017-present, ATC. Artificial Dunes, Living Shoreline Observations and Modeling
Burson Tang, Fall 2018-present. ATC. Hydrodynamic Compound Coastal Flood Modeling
Marie-Pierre Delisle, Fall 2018-present. Coupled OpenFOAM Swash-groundwater Modeling
Joseph Lucey, Fall 2018-present. Statistical Compound Coastal Flood Modeling
Margit Maple, Fall 2020-present. Flood Risk Impacts of Beach Nourishment
Tony Arreaga, Summer 2021-present.

MS *(Thesis Option)*

Minna Ho, 2019. Thesis Title: Modeling and Validation of Coastal Wastewater Effluent Plumes Using High- Resolution Nonhydrostatic Regional Ocean Modeling System

Student Awards

Maria Winters: Anchor QEA Scholarship, Robert L Wiegel Scholarship in Coastal Studies, UCLA Cota Robles Fellow, UCLA Institute of the Environment and Sustainability Center for Diverse Leadership in Science Early-Career Fellowship (2019, 2020), 2020 Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) National Diversity in STEM Conference Registration Scholarship, Graduate Student Member of the Year, SACNAS UCLA (2018)
Burson Tang: Robert L Wiegel Scholarship in Coastal Studies
Marie-Pierre Delisle: Anchor QEA Scholarship, Robert L Wiegel Scholarship in Coastal Studies, UCLA Society of Women Engineers Boeing Scholarship, UCLA Women in Engineering Leadership Scholarship, ASCE Los Angeles, Youth Member Forum, International Women in Engineering Day Award, Nominee for UCLA ASCE Best Teaching Assistant, NSF GRFP Honorable Mention
Joseph Lucey: NSF GRFP, UCLA Cota Robles, GEM Fellow
Tony Arreaga: UCLA Graduate Opportunity Fellowship, UCLA Cota Robles, Gates Millennium Fellow

PUBLICATIONS *(Bold denotes Gallien's UCLA Coastal Flood Lab student, postdoc or PI first author)*

Lucey, J.T.D. and **Gallien, T.W.**, Compound coastal flood risk in a semi-arid urbanized region: The implications of copula choice, sampling and infrastructure, in review, Natural Hazards and Earth System Sciences.

Delisle, M-P.C., Kim, Y., Mieras, R.S., **Gallien, T.W**., Numerical investigation of sheet flow driven by a near-breaking transient wave using SedFoam, in revision, European Journal of Mechanics, B/Fluids.

Goulet, C.A., Wang, Y., Nweke, C.C., Tang, B-X., Wang, P., Hudson K., Ahdi, S.K., Meng, X., Hudson, M.B., Donnellan, A., Lyda, A., Brandenberg, S.J., Stewart, Gallien, T.W., Winters, M.A., Hudnut, K., Comparison of Near-Fault Displacement Interpretations from Field and Aerial Data for the M 6.4 and M 7.1 Ridgecrest Earthquake Sequence Ruptures, in revision, Bulletin of the Seismological Society.

19. **Kim, Y.**, Mieras, R.S., Anderson, D., **Gallien, T.W.**, Numerical study of sheet flow driven by skewed-asymmetric waves using SedWaveFoam, accepted, Journal of Marine Science and Engineering.

18. Merrifield, M.A., Johnson, M., Guza, R.T., Fiedler, J., Young, A., Henderson., C.S., , Athina M. Z. Lange., A.M-Z., O'Reilly, W.C., Ludka, B.C., Okihiro, M., Gallien, T.W., Kyle Pappas, K., Engeman, L., James Behrens, J. Terrill, E., An early warning system for wave-driven coastal flooding at Imperial Beach, CA, Natural Hazards, 108, 259-1-2612. doi: 10.1007/s11069-021-04790-x

17. **Ho, M**., Molemaker, J.M., Kessouri, F., McWilliams, J.C, **Gallien, T.W**., 2021. Wastewater Effluent Plume Validation Using High-Resolution Nonhydrostatic Modeling. ASCE Journal of Hydraulic Engineering. doi: 10.1061/(ASCE)HY.1943-7900.0001896.

16. **Kim, Y.**, Son, S., Yung, T., **Gallien, T.W.**, 2021. An analytical and numerical study of a vertically discretized multi-paddle wavemaker for generating free surface and internal waves, Coastal Engineering, 165, 103840. doi: 10.1016/j.coastaleng.2021.103840

15. **Winters, M.A.**, Leslie, B., Sloane, E., **Gallien, T.W.**, 2020. Observations and Preliminary Vulnerability Assessment of a Hybrid Dune-Based Living Shoreline. Journal of Marine Sciences and Engineering, 8, 920. doi:10.3390/jmse8110920

14. **Kalligeris, N**., Smit, P., Ludka, B., Guza, R.T., **Gallien, T.W.**, 2020. Calibration and assessment of process-based numerical models for beach profile evolution in southern California. Coastal Engineering, 158, 103650. doi: 10.1016/j.coastaleng.2020.103650

13. Brandenberg, S.J., Stewart, J.P, Wang, P., Chukwuebuka C.N, Hudson K., Goulet, C.A., Meng, X., Davis, C.A, Ahdi, S.K., Hudson, M.B., Donnellan, A., Lyzenga, G. Pierce, M., Wang, J., Winters, M., Delisle, M.P., Lucey J., Kim, Y., Gallien, T.W., Lyda, A., Yeung, J.S., Issa, O., Buckreis, T., Yi., Z. 2020. Ground Deformation Data from GEER Investigations of Ridgecrest Earthquake Sequence, Seismological Research Letters. doi: 10.1785/0220190291

12. Harvey, M., Giddings, S.N., Stein, E.D., Crooks, J.A., Whitcraft, C., Gallien, T.W., Tiefenthaler, L., Meltzer, H., Pawlak, G., Thorne, K., Johnston, K., Ambrose, R., Schroeter, S., Page, M., 2020, Effects of the 2015-2016 El Niño on Water Levels in Southern California Estuaries and Implications for Elevated Sea Levels, Estuaries and Coasts, 43(2), 256-271.

11. **Gallien, T.W.**, Kalligeris, N., Delisle, M-P.C., Tang, Bo-xiang, Lucey, J., Winters, M.A., 2018. Coastal Flood Modeling Challenges in Defended Urban Backshores. Geosciences 8(12), 450.

10. Young, A.P., Flick, R.F., Gallien, T.W., Giddings, S.N., Guza, R.T., Lenain, L., Melville, K., 2018. Southern California Coastal Response to the 2015-2016 El Niño, Journal of Geophysical Research - Earth Surface 123(11), 3069-3083.

9. Barnard, P.L., Hoover, D., Hubbard, D.M., Snyder, A., Ludka, B.C., Allan, J., Kaminsky, G.M., Ruggiero, P., Gallien, T.W., Gabel, L., Cohn, N., Anderson, D.A., Serafin, K.A., 2017. Extreme oceanographic forcing and coastal response due to the 2015-2015 El Niño. Nature Communications, 8, 14385. doi: 10.1038/ncomms14365

8. Ludka, B.C., Gallien, T.W., Crosby, S.C., Guza, R.T., 2016. Mid-El Niño erosion at nourished and unnourished southern California beaches. Geophysical Research Letters, 43, 4510-4516. doi: 10.1002/2016GL068612

7. Gallien, T.W., 2016. Validated coastal flood modeling at Imperial Beach, California: Comparing total water level, empirical and numerical overtopping methodologies. Coastal Engineering 111, 95-104. doi:10.1016/j.coastaleng.2016.01.014

6. Gallien, T.W., O'Reilly, W.C., Flick, R.E., Guza, R.T., 2015. Geometric properties of anthropogenic flood control berms on southern California beaches. Ocean & Coastal Management 105, 37-45. doi:10.1016/j.ocecoaman.2014.12.014

5. Schubert, J.E., Gallien, T.W., Shakeri Majd, M., Sanders, B.F., 2015. Terrestrial laser scanning of anthropogenic beach berm erosion and overtopping. Journal of Coastal Research 31, 47-60.

4. Gallien, T.W., Sanders, B.F., Flick, R.E., 2014. Urban coastal flood prediction: integrating wave overtopping, flood defenses and drainage. Coastal Engineering 91, 18-28.

3. Gallien, T.W., Barnard, P.L., van Ormondt, M., Foxgrover, A.C., Sanders, B.F., 2013. A Parcel-Scale Coastal Flood Forecasting Prototype for a Southern California Urbanized Embayment. Journal of Coastal Research 29(3), 642-656.

2. Gallien, T.W., Schubert, J.E., Sanders, B.F., 2011. Predicting tidal flooding of urbanized embayments: A modeling framework and data requirements. Coastal Engineering 58, 567-577.

1. Harmeyer, K.J., Holland, M.A., Gallien, T.W., Lumkes, J.H., Krutz, G.W., 2009. Embedded Sensors in Rubber and Other Polymer Components. Strain 45(6) 543-546.

MANUSCRIPTS IN PREPARATION

Kalligeris, N. and Gallien, T.W., Uncertainty in numerical wave overtopping predictions due to stochastic boundary conditions In prep for Ocean Engineering, manuscript available.

Tang B-X., Gallien, T.W., A compound coastal flood methodology explicitly incorporating tides, waves, precipitation, wave overtopping, beach state and backshore infrastructure. In prep for Coastal Engineering, figures available.

Winters, M.W. and Gallien, T.W., Modeling and observations of anthropogenic dune erosion, breaching and overwash. In prep for Coastal Engineering, figures available.

PATENT

Krutz, G.W., Harmeyer, K.J., Holland, M.A., Gallien, T.W., 2011. Polymeric Structures and Methods for Producing and Monitoring Polymeric Structures. U.S. Patent No. 7,977,952 B2, Washington, DC.

REFEREED CONFERENCE PROCEEDINGS

Krutz, G., Gallien, T., Newell, B., Stewart, F., 2013. Design and Evaluation of an Embedded Sensor in a Polymer Sealing Structure "Smart Seal". In: Proceedings ASME/Bath Symposium on Fluid Power and Motion Control, ASME, 6pp.

Gallien, T.W., Schubert, J.E., Poon, Y.K., Sanders, B.F., 2011. Development and Validation of a Coastal Flood Model in an Urbanized Embayment: Accounting for Tides, Waves and Higher Ocean Levels in the Eastern Pacific. In: Proceedings of the 34th International Association for Hydro-Environment Research and Engineering, IAHR, pp. 114-121.

Gallien, T.W., Schubert, J.E., Sanders, B.F., 2009. High Resolution, Unstructured Grid Modeling of Coastal Flood Inundation at Newport Harbor, CA. In: Proceedings of the 33rd International

Association for Hydro-Environment Congress, Water Engineering For a Sustainable Environment, IAHR, pp. 2532-2539.

INVITED TALKS

Infrastructure, Artificial Dune and Living Shoreline Impacts on Compound Coastal Flooding
Adapt LA, August 4, 2021

Compound Coastal Flooding
University of Delaware, Department of Civil and Environmental Engineering, December 1, 2020

Coastal Flood Risk
UCLA Chancellor's Cabinet, Pacific Club, Newport Beach, CA, February 2, 2020

Beaches, Backshores & Bathtubs, An intriguing story of coastal vulnerability
Boelter Tech Talk Samueli School of Engineering, UCLA Athletics Hall of Fame, December 8, 2017

Coastal Flood Prediction and Management: Bathtubs, beaches, backshores and bulldozers.
UCLA, Department of Ocean and Atmospheric Sciences, February 28, 2018.
Scripps Institution of Oceanography, La Jolla, May 15, 2016.
Woods Hole Oceanographic Institution, Woods Hole, April 13, 2016.
University of California, Los Angeles, Civil and Environmental Engineering, April 5, 2016.
University of Maryland, Civil and Environmental Engineering, March 30, 2016.
California State University East Bay, Earth and Environmental Sciences, March 8, 2016
Romberg Tiburon Center, Tiburon, March 2, 2016.
San Francisco State University, Earth and Climate Sciences, San Francisco, March 1, 2016.

Why data and models matter to coastal flood prediction.
Climate Change, Sea Level Rise and Water Conservation Local, Regional and Global Effects Lecture Series. Long Beach Aquarium, Long Beach, January 23, 2016.

Beaches, Backshores and Bathtubs: The science of urban coastal flood prediction.
University of California, Los Angeles, Civil and Environmental Engineering, November 5, 2015.

California Coastal Flooding – What is needed to improve predictions?
University of California Center Sacramento. October 1, 2015.

Urban Coastal Flood Prediction: Modeling methodology, infrastructure and coastal management.
Stanford University, Civil and Environmental Engineering, April 7, 2015.
Northeastern University, Civil and Environmental Engineering, March 2, 2015.
University of California, Davis, Earth and Planetary Sciences, February 4, 2015.
University of Southern California, Civil and Environmental Engineering, January 20, 2015.

Sea Level Rise and Flooding in San Diego.
League of Women Voters, San Diego, California, September 18, 2014.

Engineering and Sea Level Rise.
Workshop on Sea Level Rise, Scripps Institution of Oceanography, May 7, 2014.

Advances in Urban Coastal Flood Modeling.
San Diego Port Authority, San Diego, California, April 29, 2014.

Urban Coastal Flood Prediction – Datums, water levels, waves and mitigation.
American Meteorological Society, La Jolla, California, June 2, 2014.
NOAA/National Weather Service, Rancho Bernardo, California, March 26, 2014.

PRESENTATIONS

Delisle, MP., Kim, Y., Gallien, T.W., Investigating Sheet Flow Under a Near Breaking Transient Wave Using a Two-Phase Eulerian Sediment Transport Model, Coastal Dynamics, Virtual, June 20, 2021.

Tang, B-X., Gallien, T.W., Compound Coastal Flood Modeling at Surfside-Sunset, Huntington Beach, CA. Ocean Visions Coastal Solutions Workshop, Virtual, March 31, 2021.

Winters, M.A., Leslie, B. Sloan, E., Timberlake, J., **Gallien, T.W.**, Observations and Monitoring of a Novel Living Shoreline-Dune Structure at Cardiff State Beach, CA, American Shore and Beach Preservation, Virtual, October 13, 2020.

Gallien, T.W., Delisle, M-P. Coastal Flooding, Wave Overtopping and Beach Groundwater Interactions. International Conference on Coastal Engineering, Baltimore, Maryland, August 1, 2018.

Gallien, T.W., Grenzeback, R. Monitoring Beach and Berm Dynamics Using Small Autonomous Aerial Systems. Headwaters to Oceans 2017, Irvine, California, May 24, 2017.

Gallien, T.W. and Guza, R.T., Modeling and observations of wave overtopping flooding on a southern California beach. 36th International Association for Hydro-Environment Research and Engineering World Congress, The Hague, Netherlands, July 3, 2015.

Gallien, T.W., Guza, R.T., Static and Hydrodynamic Sea Level Rise Flood Mapping in California. Headwaters to Oceans 2014, San Diego, California, May 29, 2014.

Gallien, T.W, O'Reilly, W.C., Flick, R.E., Guza, R.T., Anthropogenic Flood Control Berms in Southern California, Mitigation for Sea Level Rise?, Ocean Sciences, Honolulu, Hawaii, February 25, 2014.

Gallien, T.W., Flick, R.E., O'Reilly, W.C., Guza, R.T., Beach berming for coastal flood defense in southern California. Coastal and Estuarine Research Federation, San Diego, California, November 5, 2013.

Gallien, T.W. and Sanders, B.F., Parcel-scale urban coastal flood predictions: Identifying critical data and forcing requirements. American Geophysical Union Fall Meeting, San Francisco, California, December 4, 2012.

Gallien, T.W., Flick, R.E. and Sanders, B.F., Parcel-scale urban coastal flood prediction: Integrating water level, wave and flood control infrastructure. International Conference on Coastal Engineering, Santander, Spain, July 2, 2102.

Gallien, T.W. and Sanders, B.F., Flood Prediction in an Urbanized Embayment: Advancing the predictive skill of urban flood models through the integration of tide, surge, wave and flood control processes. Computational Methods in Water Resources XIX International Conference, Urbana, Illinois, June 17, 2102.

Gallien, T.W. and Sanders, B.F., An integrated high resolution urban coastal flood model. Headwaters to Oceans 2012, San Diego, California, May 31, 2012.

Gallien, T.W., Schubert, J.E., Poon, Y.K., Sanders, B.F., Development and Validation of a Coastal Flood Model in an Urbanized Embayment: Accounting for Tides, Waves and Higher Ocean Levels in the Eastern Pacific. 34th International Association for Hydro-Environment Research and Engineering, Brisbane, Australia, June 29, 2011.

Gallien, T.W. and Sanders, B.F., High-Resolution Urban Coastal Inundation Modeling. Headwaters to Oceans 2011, San Diego, California. May 24, 2011.

Gallien, T.W. and Sanders, B.F., Two-Dimensional High Resolution Coastal Flood Modeling: Validation at Newport Harbor, CA. Engineering Mechanics Institute. Los Angeles, California. August 9, 2010.

Gallien, T.W., Schubert, J.W., Sanders, B.F., High Resolution Grid Modeling of Coastal Flood Inundation at Newport Harbor, CA. Headwaters to Oceans 2009, Long Beach, California. October 28, 2009.

Gallien, T.W., Harmeyer K.J, Holland, M.A., Embedded Sensors in Rubber and Other Polymer Components. International Conference on Experimental Mechanics. Alexandroupolis, Greece. July 2, 2007.

POSTER PRESENTATIONS

Kalligeris N., Smit P, Ludka BC, Guza RT, **Gallien T.W.**, Calibration and assessment of two process-based numerical models, XBeach and CShore, for predicting beach profile evolution in southern California. AGU Ocean Sciences, San Diego, California, February 20, 2020

Ho M., Kessouri F., Sutula M., Bianchi D., McWilliams J.C., Molemaker M.J., **Gallien T.W**, Robertson G.L., Impact of water recycling on wastewater effluent plumes in drought-stricken regions in ocean acidification and hypoxia contexts. AGU Ocean Sciences, San Diego, California, February 19, 2020.

Kim Y., **Delisle M-P. Gallien T.W.**, A Numerical Study of Swash Driven by a Plunging Solitary Wave Over a Permeable Sandy Beach. AGU Ocean Sciences San Diego, California, February 17, 2020.

Ho M, Kessouri F., Sutula M.A., McWilliams J., Bianchi D., **Gallien T.W.**, Robertson G., Molemaker J. High resolution numerical ocean outfall plume modeling in the Southern California Bight. CERF Biennial Conference, Mobile, Alabama, November 6, 2019.

Shakeri-Majd, M., Schubert, J.E., Gallien, T.W., Sanders, B.F., Two-Dimensional Numerical Modeling of Anthropogenic Beach Berm Erosion. American Geophysical Union, San Francisco, California, December 16, 2014.

Gallien, T.W., Barnard, P.L., Sanders, B.F., Parcel-scale urban coastal flood mapping: Leveraging the multi-scale CoSMoS model for coastal flood forecasting. American Geophysical Union, San Francisco, California, December 7, 2011.

Gallien, T.W., Schubert, J.E., Poon, Y.K., Sanders, B.F., Mapping developed coastal flood zones for climate change adaptation planning: Accounting for tides, waves, sea level rise and flood defense structures. American Geophysical Union, San Francisco, California, December 14, 2010.

Gallien, T.W., Schubert, J.E., and Sanders, B.F., Adapting to higher high tides: Development and validation of an inundation model for tidal flooding of urbanized lowlands. Hydrology Conference, San Diego, California. October 12, 2010.

PROFESSIONAL EXPERIENCE

Rotation Dynamics Corporation, 2004-2006

Division General Manager (Precision Machining Division, Chicago, IL) 2004-2006
Responsible for engineering, marketing, sales, production, human resources and accounting of a printing press roller manufacturing and machining division. Developed and executed multi-year strategic and tactical divisional plans.

Parker Hannifin, 1996-2004

Plant Manager (Accumulator Division, Santa Fe Springs, CA), 2002-2004
Responsible for $9.5 million rubber milling, molding and assembly operation.

Mobile Account Manager (Mobile Systems Division, Lincolnshire, IL), 2000-2002
Managed $14 Million, multi-state technical and sales territory in mobile hydraulics industry**.**
Negotiated and implemented multi-million dollar contracts with Fortune 200 companies.

Product Design Engineer (Cylinder Division, Des Plaines, IL), 1999-2000
Conceptualized, sketched, designed and optimized mechanical and hydraulic parts.

Global Development Program (United Kingdom, Germany, Sweden), 1998-1999
Participated in global technology transfer program living and working in Hellaby, UK, Watford, UK, Cologne, Germany and Ulricehamn, Sweden during a one year period.

Technical Product Specialist (Cylinder Division), 1997-1998
Responsible for external technical, applications and product support.

Engineering and Marketing Trainee, (Cylinder Division), 1996-1997
Manufactured, assembled and tested hydraulic and pneumatic cylinders.

SPONSORED RESEARCH

US Coastal Research Program: “A compound flooding assessment and quantitative modeling methodology for optimizing coastal community resilience”, PI Gallien, $330K, 01/01/20-12/31/21.

Department of the Navy: “Environmental and Biological Data Collection to Support Construction of Ammunition Pier and Turning Basin in Anaheim Bay, Seal Beach, CA”, PI Gallien, $1,028K. 09/12/19-08/31/24.

California Coastal Conservancy: “Cardiff Beach Living Shoreline Monitoring”, PI: Gallien, $270K, 03/20/18-03/31/22.

California Department of Parks and Recreation, Division of Boating and Waterways: “Beach-bay-infrastructure Dynamics and Sea Level Rise Vulnerability”, C1670006. PI: Gallien, $448K, 04/30/17-12/31/21.

California Department of Parks and Recreation, Division of Boating and Waterways: “Estuary Inlet Dynamics and Analysis”, C1670005, PI: Giddings (UCSD) Co-PI: Gallien, $210K, 7/1/17-6/30/19.

California Department of Parks and Recreation, Division of Boating and Waterways: “Beach-estuary groundwater dynamics, Co-PI with Russ Detwiler, C1570003, $30K, 12/23/15-2/28/17.

California Department of Parks and Recreation, Division of Boating and Waterways: “Beach data analysis and hydrodynamic sea level rise modeling”, C1570004, PI, $130K, 9/1/15-9/30/16.

FEMA, Mobile Beach ERosion Monitoring (MoBERM) Platform, PI, $40K, 9/1/14-4/30/16.

USC Sea Grant, MoBERM, Co-PI with Robert Guza, $55K, 2/1/15-1/31/16.

AWARDS, HONORS, FELLOWSHIPS

2021 ASCE UCLA, Professor of the Year, May 28, 2021.
2020 Postdoctoral Scholar Mentoring Award Nominee. UCLA, February 2020.
2014 Chancellor's Postdoctoral Fellowship, University of California, San Diego, $62K
California Department of Parks and Recreation, Division of Boating and Waterways, Flood Control Infrastructure Survey, project lead, PI Robert Guza, $77K
2013 Chancellor's Postdoctoral Fellowship, University of California, San Diego, $62K
California Department of Parks and Recreation, Division of Boating and Waterways, Anthropogenic beach berm observations, project lead, PI Robert Guza, $56K
2012 Graduate Dean's Dissertation Fellowship, $10K
Distinguished Paper Award, FPNI PhD Symposium on Fluid Power
2011 Robert L. Wiegel Scholarship for Coastal Studies, $1.2K
California Department of Boating and Waterways, Graduate Research Funding, $34K
Newkirk Fellowship, $3K
2010 Pan-American Advanced Studies Institute in Computational Science and Engineering
Nortek Student Equipment Grant
National Science Foundation, Graduate Research Supplement, contributor, PI Brett Sanders (2009 and 2010), $82K
2008 Fluid Power Educational Foundation Scholarship
2007 Ross Fellowship, Purdue University (2006 and 2007), $98K

PROFESSIONAL SOCIETIES

American Geophysical Union (AGU)

CERTIFICATIONS

Certified Fluid Power Specialist, 1997
Engineer in Training License # ET39700084

SOFTWARE AND PROGRAMMING

Adobe Illustrator, ArcGIS, BreZo, E2, Emotion2, GNSS Solutions, Labview, LaTeX, Matlab, Mathematica, Microsoft Office, Pix4D, Postflight Terra 3D, RTK Surveying, SAS, SWAN, VDatum, XBeach

FIELD EXPERIENCE

2021 Naval Weapons Seal Beach Environmental and Biological Data Collection, PI
Cardiff Living Shoreline, PI
Long Beach South Swell, Co-PI
2020 Naval Weapons Seal Beach Environmental and Biological Data Collection, PI
Cardiff Living Shoreline, PI
2019 Ridgecrest Fault Displacement Survey, Co-I
Cardiff Living Shoreline, PI
2018 Cardiff Living Shoreline Monitoring, PI
2017 NABC Wave Runup and Berm Erosion, PI
2016 NABC Berm Study, PI
2015 Cardiff Beach Groundwater and Wave Overtopping, PI
Imperial Beach Wave Overtopping and Flooding, PI
Cross-shore Inner Shelf Dye Exchange (CSIDE), participant

2014 Imperial Beach Flooding, PI
Hurricane Marie Erosion at Newport Beach, PI
2013 Energetic Waves Agate Beach (EWAB), Participant
2012 Newport TLS Berm Erosion Experiment, Lead
2011 Long Period South Swell Flooding at Newport Beach, Lead
2008 Spring Tide Flooding at Newport Beach, Lead

INSTRUMENTATION

ADCP, CTD, GPS, Nortek AWAC and Signature, Pressure Sensors (Paros, RBR), Terrestrial LiDAR, UAV

SERVICE

Volunteer scientist for Long Beach, a climate resilient city effort, 2017-current
Scientific panel for climate change workshops, Aquarium of the Pacific, 2016 and 2017
Primary scientist for engaging underserved students in quantitative beach observations using the Mobile Beach ERosion Monitoring (MoBERM) platform, Birch Aquarium Beach Science Program, 2014-2016
Engineering chair, Workshop on Sea Level Rise, Scripps Institution of Oceanography, May 7-8, 2014
Scientific panel for Nature Conservancy Coastal Resilience Network Project, 2014
Surf Science outreach volunteer, 2013
Panel member for ASCE graduate school information sessions, 2012
Reviewer for: Climatic Change; Computers, Environment and Urban Systems (2015); Estuarine, Coastal and Shelf Science (2017); Estuaries & Coasts (2016); Geosciences (2019), Journal of Hydraulic Engineering (2015, 2016); Journal of Marine Science and Engineering (2017); Natural Hazards (2016); Natural Hazards and Earth System Science (2013); Nature Communications (2020)
Reviewer for University of California Presidential Postdoctoral Fellowship (2020)
Center for Study of Women Advisory Committee, 9/19-present
Center for Study of Women, Executive Board, 9/21-9/22
Chi-Epsilon faculty advisor, 10/17-present
Contributing author, Los Angeles Summary Report, California's Fourth Climate Change Assessment, 2018.
Co-Chair, AGU Fall 2018 Meeting, Session H43J: Urban Flooding: Data, Modeling, Rainfall, and Impacts
PhD Committee member: Akash Koppa (6/19), Haiwen Gao (8/19), Yiwen Fang (12/19), Madeline Harvey (Scripps, 12/19), Jacob Schaperow (current), Emilie Taroullilly (current), Meng-Chen Lee (current), Zehan Lin (current)
MS Committee member: Rike Becker (12/16)