



---

## **Brett F. Sanders**

Department of Civil and Environmental Engineering  
Department of Urban Planning and Public Policy (wos)  
University of California, Irvine

949.824.4327  
bsanders@uci.edu  
<http://floodlab.eng.uci.edu>

## **Expertise and Interests**

---

I am interested in advancing knowledge and models of environmental dynamics in the context of (contentious) interactions between the built environment, the natural environment, and human activities.

My core training is in fluid mechanics, open channel hydraulics, and computational methods, and my core interests center around “long” water wave dynamics, notably floods and tidal dynamics along coasts. I also dabble in water quality modeling (including sediment transport), remote sensing, parallel computing, planning and policy.

A focal point of my recent work has been advancing simulation tools for understanding and adapting to changing risks. With more intense storms and rising sea levels, the impacts of flooding are rapidly increasing and concentrated in urban areas. This presents both a challenge and an opportunity - to rebuild infrastructure systems in ways that are sustainable, equitable and deliver multi-benefits including more liveable cities and healthier ecosystems. Participation is key to multi-benefit outcomes, and our work on simulation tools is aimed at realizing interactive and fast-response simulation capabilities at the regional scale that can be embedded within participatory adaptation processes.

## **Key Words**

---

Climate, Sea Level Rise, Beaches, Flood Risk, Multi-Benefit Infrastructure Design, Community Engagement, Equitable Adaptation, Environmental Modeling, High Performance Computing, Remote Sensing, Flood Inundation Forecasting

## **Education**

---

### **University of Michigan**

Doctor of Philosophy, Civil Engineering

1997, ANN ARBOR, MI

Dissertation: Active control of flood waves using the adjoint equation solution

Advisor: Nikolaos D. Katopodes

### **University of Michigan**

Master of Science, Civil Engineering

1994, ANN ARBOR, MI

### **University of California, Berkeley**

Bachelor of Science (*Cum Laude*), Civil Engineering

1993, BERKELEY, CA

## Professional Positions

---

**University of California, Irvine / Professor**  
Department of Civil and Environmental Engineering  
2009-PRESENT

**University of California, Irvine / Professor (wos)**  
Department of Urban Planning and Public Policy  
2015-PRESENT

**University of California, Irvine / Associate Dean for Undergraduate Student Affairs (Interim)**  
Samueli School of Engineering  
2020-2021

**University of California, Irvine / Department Chair**  
Department of Civil and Environmental Engineering  
2010-2017

**University of California, Irvine / Associate Professor**  
Department of Civil and Environmental Engineering  
2003-2009

**University of California, Irvine / Assistant Professor**  
Department of Civil and Environmental Engineering  
1997-2003

## Honors and Awards

---

**Fellow**  
Environmental and Water Resources Institute, American Society of Civil Engineers  
2023

**Fellow**  
Engineering Mechanics Institute, American Society of Civil Engineers  
2021

**Outstanding Post-Secondary STEM Educator**  
OC STEM Initiative  
2022

**Innovator of the Year Nominee**  
Orange County Business Journal  
2022

**Best Professor of the Year Award**  
Engineering Student Council, Samueli School of Engineering  
2021

**Distinguished Engineering Educator Award**  
Orange County Branch, American Society of Civil Engineers  
2012

**Outstanding Reviewer Award**  
Journal of Hydraulic Engineering, American Society of Civil Engineers  
2011

**Teaching Excellence Award**  
Division of Undergraduate Education, University of California, Irvine

2004

**Fariborz Maseeh Best Teacher Award**

Samueli School of Engineering, University of California, Irvine

2004

**Outstanding Student Chapter Award (Faculty Advisor)**

American Society of Civil Engineers

2002

**CAREER Award**

National Science Foundation

2000

**Outstanding Paper Award**

International Conference on Hydrosience and Engineering

1998

**Victor L. Streeter Fellow**

Department of Civil and Environmental Engineering, University of Michigan

1993-1998

---

**Professional  
Memberships**

**American Association for the Advancement of Science (AAAS)**

**American Geophysical Union (AGU)**

**American Society of Civil Engineers (ASCE)**

**Chi Epsilon Honor Society (XE)**

**International Association of Hydraulic Research (IAHR)**

**Coastal Education and Research Foundation (CERF)**

---

**Professional  
Service**

**Associate Editor**

ASCE OPEN

2023-PRESENT

**Editorial Board**

Advances in Water Resources

2009-PRESENT

**Associate Editor**

Journal of Engineering Mechanics (ASCE)

2006-2010

**Editorial Board**

Water

2018-2020

**Associate Editor**

WIRES-Water

2012-2013

**Fluids Committee Control Member**

Engineering Mechanics Institute

2005-Present

**Fluids Committee Chair**  
Engineering Mechanics Institute  
2006-2008

**Fluids Committee Vice-Chair**  
Engineering Mechanics Institute  
2005-2006; 2008-2009

**Science Advisory Panel**  
California Coastal Commission  
2010-PRESENT

**Water Policy Center Research Network**  
Public Policy Institute of California  
2014-PRESENT

**Science Definition Team**  
NASA SWOT Mission  
2013-2015

**Education Committee Member**  
Crystal Cove Conservancy  
2016-PRESENT

**Workshop Organizer**  
UCI Coastal Solutions Workshop co-convened by Assemblywoman Cottie  
Petris-Norris  
December 20, 2022

**Conference Session Organizer**  
Engineering Mechanics Institute Annual Meetings, AGU Fall Meeting,  
International Conference on Computational Methods in Water Resources,  
Headwaters to Ocean Conference, California Coastal Resilience: Communities in  
Action  
Various Dates

**Reviewer/Panelist for Funding Agencies**  
NSF, NOAA, NASA, USEPA, California Sea Grant, Wisconsin Sea Grant, Maryland  
Sea Grant, UC Office of the President, UK Research Council, German Research  
Foundation, Austrian Research Fund  
Various Dates

**Reviewer for Journals**  
Various

---

## Courses

**Samueli Interdisciplinary Research in Pods (SIRiPods)**  
(Research Gateway Program for Undergraduate Students)  
SUMMER

**Introduction to Fluid Mechanics**

ENGRCEE 170

FALL QUARTER

**Beach Dynamics**

ENGRCEE 269

SPRING QUARTER

**Flood Risk & Modeling**

ENGRCEE 270

WINTER QUARTER

*Previously Taught Courses*

**Introduction to Computational Problem-Solving in Matlab**

ENGRCEE 20

**Water Resources Engineering**

ENGRCEE 171

**Flow in Open Channels**

ENGRCEE 178/278

**Fundamentals of Hydrologic Transport**

ENGRCEE 277

**Computational Methods for Hydrologic Modeling**

ENGRCEE 279

**Postdoctoral  
Scholar  
Supervision**

---

**Michael Piasecki**

Associate Professor, Civil Engineering, City College of New York.

1998

**Feleke Arega**

Division of Water Quality, South Carolina Department of Environmental Affairs

2001-2003

**Jochen Schubert**

Associate Research Specialist, Civil and Environmental Engineering, UCI

2009-PRESENT

**Byunghyun Kim**

Assistant Professor, Kyungpook National University, Daegu, South Korea

2010-2015

**Hamed Moftakhari**

Assistant Professor, Civil and Environmental Engineering, University of Alabama

2014-2018 (Secondary Advisor Role. Lead: A. AghaKouchak, CEE, UCI)

**Leicheng Guo**

Researcher, State Key Lab of Estuarine and Coastal Research, Shanghai, China

2017-2018

**Napoleon Elizondo Gudiño**

Research Professor, Autonomous University of Baja California, Ensenada

2018-2020

**Omar Perez-Figueroa**

Assistant Professor, Department of Urban and Regional Planning, University of Illinois at Urbana-Champaign

2022-2023

---

**Doctoral Student  
Supervision**

**David Jaffe**

Senior Associate, David Evans and Associates

PHD 2002

**Lorenzo Begnudelli**

Engineering Specialist, FM Global

PHD 2007 (University of Ferrara, Italy)

**Jochen Schubert**

Research Specialist, Civil and Environmental Engineering, UCI

PHD 2009 (University of Nottingham, UK)

**John (Matt) Thomas**

Project Engineer, Geosyntec Consultants

PHD 2009

**Daniel Howes**

Professor, Bioresource and Agricultural Engineering, Cal Poly SLO

PHD 2010

**Humberto Gallegos**

Associate Professor and Chair, Engineering and Technologies Department, East Los Angeles College

PHD 2011

**Timu Gallien**

Associate Professor, Civil and Environmental Engineering, UCLA

PHD 2012

**Robert Stein**

Assistant City Engineer, City of Newport Beach

PHD 2015

**Morteza Shakeri**

Senior Hydraulic Engineer, US Army Corps of Engineers, Los Angeles

PHD 2016

**Adam Luke**

Senior Data Scientist, Equifax

PHD 2018

**Kristen Goodrich**

Coastal Training Coordinator, Tijuana River National Estuarine Research Reserve

PHD 2019 (Secondary Advisor Role, Lead: R. Matthew, Social Ecology, UCI)

**Matthew Brand**

Assistant Professor, Civil and Environmental Engineering, Louisiana State University

PHD 2021

**Ai-Ling Jiang**  
Postdoctoral Scholar, UCI  
PHD 2022 (Secondary Advisor Role, Lead: K. Hsu, CEE, UCI)

**Ariane Jong**  
PhD Candidate, Environmental Engineering, UCI  
2018-PRESENT

**Daniel Kahl**  
PhD Pre-Candidate, Environmental Engineering, UCI  
2019-PRESENT

---

## Masters Thesis Supervision

**Carrie Green**  
1998

**Allyson Chu**  
2001

**Julio Fernandez**  
2005

**Robert Mrse**  
2006

**Adam Luke**  
2015

---

## Journal Papers

1. **Sanders, B. F.**, Katopodes, N. D., Boyd, J. P. (1998). Spectral Modeling of Nonlinear Dispersive Waves. *ASCE Journal of Hydraulic Engineering*, 124(1), 2-12.
2. Katopodes, N. D., **Sanders, B. F.**, Boyd, J. P. (1998). Short Wave Behavior of Long Wave Equations. *ASCE Journal of Waterway, Port, Coastal and Ocean Engineering*, 124(5), 238-247.
3. **Sanders, B. F.**, Katopodes, N. D. (1999). Control of Canal Flow by Adjoint Sensitivity Method. *ASCE Journal of Irrigation and Drainage Engineering*, 125(5), 287-297.
4. **Sanders, B. F.**, Katopodes, N. D. (1999). Active Flood Hazard Mitigation. Part 1: Bidirectional Wave Control. *ASCE Journal of Hydraulic Engineering*, 125(10), 1057-1070.
5. **Sanders, B. F.**, Katopodes, N. D. (1999). Active Flood Hazard Mitigation. Part 2: Omnidirectional Wave Control. *ASCE Journal of Hydraulic Engineering*, 125(10), 1071-1083.
6. **Sanders, B. F.**, Katopodes, N. D. (2000). Sensitivity Analysis of Shallow-Water Wave Control. *ASCE Journal of Engineering Mechanics*, 126(9), 909-919.
7. **Sanders, B. F.** (2001). High-Resolution and Non-Oscillatory Solution of the St. Venant Equations in Non-Rectangular and Non-prismatic Channels. *Journal of Hydraulic Research*, 39(3), 321-330.

8. Jaffe, D. A., **Sanders, B. F.** (2001). Engineered Levee Breaches for Flood Mitigation. *ASCE Journal of Hydraulic Engineering*, 127(6), 471-477.
9. **Sanders, B. F.**, Green, C. L., Chu, A. K., Grant, S. B. (2001). Modeling Tidal Transport of Urban Runoff in Channels Using the Finite Volume Method. *ASCE Journal of Hydraulic Engineering*, 127(10), 795-804.
10. Grant, S. B., **Sanders, B. F.**, Boehm, A. B., Redman, J. A., Kim, J. H., Mre, R. D., Chu, A. K., Gouldin, M., McGee, C. D., Gardiner, N. A., Jones, B. H., Svejksky, J., Leipzig, G. V., Brown, A. (2001). Generation of Enterococci Bacteria in a Coastal Saltwater Marsh and Its Impact on Surf Zone Water Quality. *Environmental Science and Technology*, 35(12), 2401-2406.
11. **Sanders, B. F.**, Piasecki, M. (2002). Mitigation of Salinity Intrusion in Well-Mixed Estuaries by Optimization of Freshwater Diversion Rates. *ASCE Journal of Hydraulic Engineering*, 128(1), 64-77.
12. Piasecki, M., **Sanders, B. F.** (2002). Optimization of Multiple Freshwater Diversions in Well-Mixed Estuaries. *ASCE Journal of Water Resources Planning and Management*, 128(1), 74-84.
13. **Sanders, B. F.** (2002). Non-Reflecting Boundary Flux Function for Finite Volume Shallow-Water Models. *Advances in Water Resources*, 25(2), 195-202.
14. **Sanders, B. F.**, Bradford, S. F. (2002). High-Resolution, Monotone Solution of the Adjoint Shallow-Water Equations. *International Journal of Numerical Methods in Fluids*, 38(2), 139-161.
15. Bradford, S. F., **Sanders, B. F.** (2002). Finite-Volume Model for Shallow-Water Flooding of Arbitrary Topography. *ASCE Journal of Hydraulic Engineering*, 128(3), 289-298.
16. Boehm, A. B., **Sanders, B. F.**, Winant, C. D. (2002). Cross-Shelf Transport at Huntington Beach. Implications for the Fate of Sewage Discharged through an Offshore Ocean Outfall. *Environmental Science and Technology*, 36, 1899-1906.
17. Bradford, S. F., **Sanders, B. F.** (2002). Finite-Volume Models for Unidirectional, Nonlinear, Dispersive Waves. *ASCE Journal of Waterway, Port, Coastal, and Ocean Engineering*, 128(4), 173-182.
18. Chu, A. K., **Sanders, B. F.** (2003). Data Requirements for Load Estimation in Well-Mixed Tidal Channels. *ASCE Journal of Environmental Engineering*, 129(8), 765-773.
19. **Sanders, B. F.**, Jaffe, D. A., Chu, A. K. (2003). Discretization of Integral Equations Describing Flow in Non-Prismatic Channels with Uneven Beds. *ASCE Journal of Hydraulic Engineering*, 129(3), 235-244.
20. Arega, F., **Sanders, B. F.** (2004). Dispersion Model for Tidal Wetlands. *ASCE Journal of Hydraulic Engineering*, 130(8), 739-754.
21. Reeves, R. L., Grant, S. B., Mrse, R. D., Copil-Oancea, C. M., **Sanders, B. F.**, Boehm, A. B. (2004). Scaling and Management of Fecal Indicator Bacteria in Runoff from a Coastal Urban Watershed in Southern California. *Environmental Science and Technology*, 38(9), 2637-2648.



22. Kim, J. H., Grant, S. B., McGee, C. D., **Sanders, B. F.**, Largier, J. L. (2004). Locating Sources of Surf Zone Pollution: A Mass Budget Analysis of Fecal Indicator Bacteria at Huntington Beach, California. *Environmental Science and Technology*, 38(9), 2626 – 2636.
23. **Sanders, B. F.**, Chrysikopoulos, C. V. (2004). Longitudinal Interpolation of Parameters Characterizing Channel Geometry by Piece-wise Polynomial and Universal Kriging Methods: Effect on Flow Modeling. *Advances in Water Resources*, 27, 1061-1073.
24. **Sanders, B. F.**, Arega, F., Sutula, M. (2005). Modeling the dry-weather tidal cycling of fecal indicator bacteria in surface waters of an intertidal wetland. *Water Research*, 39, 3394-3408.
25. Bradford, S. F., **Sanders, B. F.** (2005). Performance of High-Resolution, Non-Level Bed, Shallow-Water Models. *ASCE Journal of Engineering Mechanics*, 131(10), 1073-1081.
26. **Sanders, B. F.**, Bradford, S. F. (2006). Impact of Limiters on Accuracy of High-Resolution Flow and Transport Models. *ASCE Journal of Engineering Mechanics*, 132(1), 87-98.
27. Begnudelli, L., **Sanders, B. F.** (2006). Unstructured Grid Finite Volume Algorithm for Shallow-water Flow and Transport with Wetting and Drying. *ASCE Journal of Hydraulic Engineering*, 132(4), 371-384.
28. Pau, J. C., **Sanders, B. F.** (2006). Performance of Parallel Implementations of an Explicit Finite-Volume Shallow-Water Model. *ASCE Journal of Computing in Civil Engineering*, 20(2), 99-110.
29. **Sanders, B. F.**, Pau, J., Jaffe, D. A. (2006). Passive and active control of diversions to an off-line reservoir for flood stage reduction. *Advances in Water Resources*, 29(6), 861-871.
30. Begnudelli, L., **Sanders, B. F.** (2007). Conservative Wetting and Drying Methodology for Quadrilateral Grid Finite Volume Models. *ASCE Journal of Hydraulic Engineering*, 133(3), 312-322.
31. Jeong, Y., **Sanders, B. F.**, Grant, S. B. (2006). The information content of high frequency environmental monitoring data signals pollution events in the coastal ocean. *Environmental Science and Technology*, 40(20), 6215-6220.
32. **Sanders, B. F.** (2007). Evaluation of on-line DEMs for flood inundation modeling. *Advances in Water Resources*, 30(8), 1831-1843.
33. Begnudelli, L., **Sanders, B. F.** (2007). Simulation of the St. Francis Dam-Break Flood. *ASCE Journal of Engineering Mechanics*, 133(11), 1200-1212.
34. Begnudelli, L., **Sanders, B. F.**, Bradford, S. F. (2008). An adaptive Godunov-based model for flood simulation. *ASCE Journal of Hydraulic Engineering*, 134(6), 714-725.
35. Jeong, Y., **Sanders, B. F.**, McLaughlin, K., Grant, S. B. (2008). Treatment of dry weather urban runoff in tidal saltwater marshes: A longitudinal study of the

Talbert Marsh in southern California. *Environmental Science and Technology*, 42(10), 3609-3614.

36. **Sanders, B. F.** (2008). Integration of a shallow-water model with a local time step. *Journal of Hydraulic Research*, 46(4), 466-475.
37. Schubert, J. E., **Sanders, B. F.**, Smith, M. J., Wright, N. G. (2008). Unstructured mesh generation and landcover-based resistance for hydrodynamic modeling of urban flooding. *Advances in Water Resources*, 31, 1603-1621.
38. **Sanders, B. F.**, Schubert, J. E., Gallegos, H. A. (2008). Integral formulation of shallow-water equations with anisotropic porosity for urban flood modeling. *Journal of Hydrology*, 362, 19-38.
39. Gallegos, H. A., Schubert, J. E., **Sanders, B. F.** (2009). Two-dimensional, high-resolution modeling of urban dam-break flooding: a case study of Baldwin Hills, California. *Advances in Water Resources*, 32, 1323-1335.
40. Begnudelli, L., Valiani, A., **Sanders, B. F.** (2010). A balanced treatment of secondary currents, turbulence and dispersion in a depth-integrated hydrodynamic and bed deformation model for channel bends. *Advances in Water Resources*, 33, 17-33.
41. Howes, D. J., Burt, C. M., **Sanders, B. F.** (2010). Subcritical contraction for improved open-channel flow measurement accuracy with an upward-looking ADVN. *ASCE Journal of Irrigation and Drainage Engineering*, 136(9), 617-626.
42. **Sanders, B. F.**, Schubert, J. E., Detwiler, R. L. (2010). ParBreZo: A parallel, unstructured grid, Godunov-type, shallow-water code for high-resolution flood inundation modeling at the regional scale. *Advances in Water Resources*, 33, 1456-1467.
43. Grant, S. B., **Sanders, B. F.** (2010). Beach boundary layer: a framework for addressing recreational water quality impairment at enclosed beaches. *Environmental Science and Technology*, 44, 8804-8813.
44. **Sanders, B. F.**, Bradford, S. F. (2011). A network implementation of the two-component pressure approach for transient flow in storm sewers. *ASCE Journal of Hydraulic Engineering*, 137(2), 158-172.
45. 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(6), 567-577.
46. Shin, H. M., Vieira, V. M., Ryan, B. P., Detwiler, R., **Sanders, B. F.**, Steenland, K., Bartell, S. M. (2011). Environmental Fate and Transport Modeling for Perfluorooctanoic Acid Emitted from the Washington Works Facility in West Virginia. *Environmental Science and Technology*, 45, 1435-1444.
47. Howes, D. J., **Sanders, B. F.** (2011). Velocity Contour Weighting Method. I: Algorithm Development and Laboratory Testing. *ASCE Journal of Hydraulic Engineering*, 137(11), 1359-1367.

48. Howes, D. J., **Sanders, B. F.** (2011). Velocity Contour Weighting Method. II: Evaluation in Trapezoidal Channels and Roughness Sensitivity. *ASCE Journal of Hydraulic Engineering*, 137(11), 1368-1374.
49. Wu, W. M., Altinakar, M. S., Al-Riffai, M., Bergman, N., Bradford, S. F., Cao, Z. X., Chen, Q. J., Constantinescu, S. G., Duan, J. G., Gee, D. M., Greimann, B., Hanson, G., He, Z. G., Hegedus, P., van Hoestenbergh, T., Huddleston, D., Hughes, S. A., Imran, J., Jia, Y. F., Jorgeson, J. D., Kahawita, R., Klumpp, C. C., Lai, Y., Langendoen, E. J., Liu, S., Moreda, F., Morris, M., Morvan, H., Orendorff, B., Pak, J., Peeters, P., Reed, S., **Sanders, B. F.**, Scott, S. H., Soares-Fraza, Song, C. R., Sutherland, J., Teal, M. J., Tsubaki, R., Wahl, T. L., Weston, D. M., Williams, D. T., Zech, Y., Zhang, L. M. (2011). Earthen Embankment Breaching. *ASCE Journal of Hydraulic Engineering*, 137(12), 1549-1564.
50. Schubert, J. E., **Sanders, B. F.** (2012). Building treatments for urban flood inundation models and implications for predictive skill and modeling efficiency. *Advances in Water Resources*, 41, 49-64.
51. Gallegos, H. A., Schubert, J. E., **Sanders, B. F.** (2012). Structural damage prediction in a high-velocity urban dam-break flood: a field-scale assessment of predictive skill. *ASCE Journal of Engineering Mechanics*, 138(10), 1249-1262.
52. Grant, S. B., Saphores, J. D., Feldman, D. L., Hamilton, A. J., Cool, P., Stewardson, M., **Sanders, B. F.**, Levin, L. A., Ambrose, R. F., Deletic, A., Brown, R., Jiang, S. C., Rosso, D., Cooper, W. J., Marusic, I. (2012). Taking the "Waste" Out of "Wastewater" for Human Water Security and Ecosystem Sustainability. *Science*, 337(6095), 681-686.
53. Kim, B. H., **Sanders, B. F.**, Han, K. Y., Kim, Y. J., Famiglietti, J. S. (2013). Calibration of stormwater management model using flood extent data. *Proceedings of the Institution of Civil Engineers - Water Management*, 167(1), 17-29.
54. Gallien, T. W., Barnard, P. L., van Ormondt, M., Foxgrover, A., **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.
55. Majd, M. S., **Sanders, B. F.** (2014). The LHLLC scheme for Two-Layer and Two-Phase transcritical flows over a mobile bed with avalanching, wetting and drying. *Advances in Water Resources*, 67, 16-31.
56. Aghakouchak, A., Feldman, D. L., Stewardson, M. J., Saphores, J. D., Grant, S. B., **Sanders, B. F.** (2014). Australia's Drought: Lessons for California. *Science*, 343(6178), 1430-1431.
57. Kim, B., **Sanders, B. F.**, Schubert, J. E., Famiglietti, J. S. (2014). Mesh type tradeoffs in 2D hydrodynamic modeling of flooding with a Godunov-based flow solver. *Advances in Water Resources*, 68, 42-61.
58. Gallien, T. W., **Sanders, B. F.**, Flick, R. L. (2014). Urban coastal flood prediction: Integrating wave overtopping, flood defenses and drainage. *Coastal Engineering*, 91(3), 18-28.
59. Rippy, M. A., Stein, R., **Sanders, B. F.**, Davis, K., McLaughlin, K., Skinner, J. F., Kappeler, J., Grant, S. B. (2014). Small drains, big problems: the impact of dry

weather runoff on shoreline water quality at enclosed beaches. *Environmental Science and Technology*, 48(24), 14168-14177.

60. Schubert, J. E., Gallien, T. W., Majd, M. S., **Sanders, B. F.** (2014). Terrestrial Laser Scanning of Anthropogenic Beach Berm Erosion and Overtopping. *Journal of Coastal Research*, 31(1), 47-60.
61. Yavari-Ramshe, S., Ataie-Ashtiani, B., **Sanders, B. F.** (2015). A robust finite volume model to simulate granular flows. *Computers and Geotechnics*, 66, 96-112.
62. Kim, B. H., **Sanders, B. F.**, Famiglietti, J. S., Guinot, V. (2015). Urban flood modeling with porous shallow-water equations: a case study of model errors in the presence of anisotropic porosity. *Journal of Hydrology*, 523, 680-692.
63. Burns, M. J., Schubert, J. E., Fletcher, T. J., **Sanders, B. F.** (2015). Testing the impact of at-source stormwater management on urban flooding through a coupling of network and overland flow models. *WIREs-Water*, 2, 291-300.
64. Luke, A., Kaplan, B., Neal, J., Lant, J., **Sanders, B. F.**, Bates, P., Alsdorf, D. (2015). Hydraulic modeling of the 2011 New Madrid Floodway activation: a case study on floodway activation controls. *Natural Hazards*, 77, 1863-1887.
65. Askarizadeh, A., Rippy, M. A., Fletcher, T. D., Feldman, D. L., Peng, J., Bowler, P. A., Mehring, A. S., Winfrey, B. K., Vrugt, J. A., Aghakouchak, A., **Sanders, B. F.**, others (2015). From rain tanks to catchments: Use of low-impact development to address hydrologic symptoms of the urban stream syndrome. *Environmental Science & Technology*, 49(19), 11264-11280.
66. Nguyen, P., Thorstensen, A., Sorooshian, S., Hsu, K.-l., Aghakouchak, A., **Sanders, B. F.**, Koren, V., Cui, Z., Smith, M. (2015). A high resolution coupled hydrologic-hydraulic model (HiResFlood-UCI) for flash flood modeling. *Journal of Hydrology*, 541, 401-420.
67. Moftakhari, H. R., Aghakouchak, A., **Sanders, B. F.**, Feldman, D. L., Sweet, W., Matthew, R. A., Luke, A. (2015). Increased nuisance flooding along the coasts of the United States due to sea level rise: Past and future. *Geophysical Research Letters*, 42(22), 9846-9852
68. Schubert, J. E., Monsen, W. W., **Sanders, B. F.** (2015). Metric-Resolution 2D River Modeling at the Macroscale: Computational Methods and Applications in a Braided River. *Frontiers in Earth Science*, 3, 74.
69. Kim, B., **Sanders, B. F.** (2016). Dam-Break Flood Model Uncertainty Assessment: Case Study of Extreme Flooding with Multiple Dam Failures in Gangneung, South Korea. *Journal of Hydraulic Engineering*, 142(5), 05016002.
70. Feldman, D. L., Contreras, S., Karlin, B., Basolo, V., Matthew, R. A., **Sanders, B. F.**, Houston, D., Cheung, W., Goodrich, K., Reyes, A., Serrano, K., Schubert, J. E., Luke, A. (2016). Communicating flood risk: Looking back and forward at traditional and social media outlets. *International Journal of Disaster Risk Reduction*, 15, 43-51.
71. Durand, M., Gleason, C., Garambois, P., Bjerklie, D., Smith, L., Roux, H., Rodriguez, E., Bates, P., Pavelsky, T., Monnier, J., **Sanders, B. F.**, Schubert, J. E., others (2016). An intercomparison of remote sensing river discharge estimation algorithms

from measurements of river height, width, and slope. *Water Resources Research*, 52, 4527-4549.

72. Cheung, W., Houston, D., Schubert, J. E., Basolo, V., Feldman, D. L., Matthew, R. A., **Sanders, B. F.**, Karlin, B., Goodrich, K. A., Contreras, S. L., Luke, A. (2016). Integrating resident digital sketch maps with expert knowledge to assess spatial knowledge of flood risk: A case study of participatory mapping in Newport Beach, California. *Applied Geography*, 74, 56–64.
73. Vandenberg-Rodes, A., Moftakhari, H. R., Aghakouchak, A., Shahbaba, B., **Sanders, B. F.**, Matthew, R. A. (2016). Projecting nuisance flooding in a warming climate using generalized linear models and Gaussian processes. *Journal of Geophysical Research - Oceans*, 121(11), 8008-8020.
74. Moftakhari, H. R., Aghakouchak, A., **Sanders, B. F.**, Matthew, R. A. (2017). Cumulative hazard: The case of nuisance flooding. *Earth's Future*, 5(2), 214-223.
75. Guinot, V., **Sanders, B. F.**, Schubert, J. E. (2017). Dual integral porosity shallow water model for urban flood modelling. *Advances in Water Resources*, 103, 16-31.
76. Luke, A., Vrugt, J. A., Aghakouchak, A., Matthew, R. A., **Sanders, B. F.** (2017). Predicting nonstationary flood frequencies: Evidence supports an updated stationarity thesis in the United States. *Water Resources Research*, 53(7), 5469-5494.
77. Moftakhari, H. R., Salvadori, G., Aghakouchak, A., Matthew, R. A., **Sanders, B. F.** (2017). Compounding effects of sea level rise and fluvial flooding. *Proceedings of the National Academy of Sciences*, 114(37), 9785-9790.
78. Schubert, J. E., Burns, M. J., Fletcher, T. D., **Sanders, B. F.** (2017). A framework for the case-specific assessment of Green Infrastructure in mitigating urban flood hazards. *Advances in Water Resources*, 108, 55-68.
79. Moftakhari, H., Aghakouchak, A., **Sanders, B. F.**, Matthew, R. A., Mazdidasni, O. (2017). Translating uncertain sea level rise projections into infrastructure impacts using a Bayesian framework. *Geophysical Research Letters*, 44(23), 11,914-11,921.
80. Luke, A., **Sanders, B. F.**, Goodrich, K., Feldman, D. L., Boudreau, D., Eguiarte, A., Serrano, K., Reyes, A., Schubert, J. E., Aghakouchak, A., Basolo, M. V., Matthew, R. A. (2018). Going beyond the Flood Insurance Rate Map: Insights from hazard map co-production. *Natural Hazards and Earth System Science*, 18(4), 1097-1120.
81. Sadegh, M., Moftakhari, H., Gupta, H.V., Ragno, E., Mazdidasni, O., **Sanders, B.**, Matthew, R. and Aghakouchak, A., (2018). Multihazard scenarios for analysis of compound extreme events. *Geophysical Research Letters*, 45(11), pp.5470-5480.
82. Moftakhari, H. R., Aghakouchak, A., **Sanders, B. F.**, Allaire, M., & Matthew, R. A. (2018). What is nuisance flooding? Defining and monitoring an emerging challenge. *Water Resources Research*, 54(7), 4218-4227.
83. Guo, L., Brand, M., **Sanders, B. F.**, Foufoula-Georgiou, E., & Stein, E. D. (2018). Tidal asymmetry and residual sediment transport in a short tidal basin under sea level rise. *Advances in Water Resources*, 121, 1-8.

84. **Sanders, B. F.** and Schubert, J. E. (2019) PRIMo: Parallel Raster Inundation Model. *Advances in Water Resources*, 126, 79-95.
85. Mofstakhari, H., Schubert, J. E., Aghakouchak, A., Matthew, R.A. and **Sanders, B.F.** (2019) Linking statistical and hydrodynamic modeling for compound flood hazard assessment in tidal channels and estuaries. *Advances in Water Resources*, 128, 28-38.
86. Houston, D., Cheung, W., Basolo, V., Feldman, D., Matthew, R., **Sanders, B.F.**, Karlin, B., Schubert, J.E., Goodrich, K.A., Contreras, S. and Luke, A., (2019) The Influence of Hazard Maps and Trust of Flood Controls on Coastal Flood Spatial Awareness and Risk Perception. *Environment and Behavior*, 51(4), pp.347-375.
87. **Sanders, B. F.**, Schubert, J. E., Goodrich, K. A., Houston, D., Feldman, D. L., Basolo, V., Luke, A., Boudreau, D., Karlin, D., Cheung, W., Contreras, S., Reyes, A., Eguiarte, A., Serrano, K., Allaire, M. Mofstakhari, A., AghaKouchak, A., Matthew, R.A. (2020). Collaborative modeling with fine-resolution data enhances flood awareness, minimizes differences in flood perception, and produces actionable flood maps. *Earth's Future*, 8(1), e2019EF001391.
88. **Sanders, B.F.** & Grant, S. B. (2020). Re-envisioning stormwater infrastructure for ultrahazardous flooding. *Wiley Interdisciplinary Reviews: Water*, 7(2), e1414
89. Goodrich, K.A., Basolo, V., Feldman, D.L., Matthew, R.A., Schubert, J.E., Luke, A., Eguiarte, A., Boudreau, D., Serrano, K., Reyes, A.S., Contreras, S., Houston, D., Cheung, W., AghaKouchak, A., **Sanders, B.F.** (2020) Addressing Pluvial Flash Flooding through Community-Based Collaborative Research in Tijuana, Mexico. *Water*, 12, 1257.
90. Ulibarri, N., Goodrich, K.A., Wagle, P., Brand, M., Matthew, R., Stein, E.D., and **Sanders, B.F.** (2020) Barriers and Opportunities for Beneficial Reuse of Sediment to Support Coastal Resilience. *Ocean & Coastal Management*, 195, 105287. <https://doi.org/10.1016/j.ocecoaman.2020.105287>
91. Brand, M.W. Gudino-Elizondo, N., Allaire, M., Wright, S., Matson, W., Saksa, P., and **Sanders, B.F.** (2020), Stochastic hydro-financial modeling for environmental impact bonds. *Water Resources Research*, 56, e2020WR027328. <https://doi.org/10.1029/2020WR027328>  
*Paper selected for [Editor's Highlight](#) published in EOS (top 2% of journal articles)*
92. Mofstakhari, H., Shao, W., Moradkhani, H., AghaKouchak, A., **Sanders, B.**, Matthew, R., ... & Orbinski, J. (2020). Enabling incremental adaptation in disadvantaged communities: polycentric governance with a focus on non-financial capital. *Climate Policy*, 1-10.
93. Brand, M. W., Guo, L., Stein, E. D., & **Sanders, B. F.** (2021). Multi-decadal simulation of estuarine sedimentation under sea level rise with a response-surface surrogate model. *Advances in Water Resources*, 150, 103876.
94. Jiang, A.L., Lee, M.C., Zhou, G., Zhong, D., Hawaria, D., Kibret, S., Yewhalaw, D., **Sanders, B.F.**, Yan, G. and Hsu, K. (2021). Predicting distribution of malaria vector larval habitats in Ethiopia by integrating distributed hydrologic modeling with remotely sensed data. *Scientific Reports*, 11(1), pp.1-14.

95. Brand, M.W. et al. (2021) Environmental Impact Bonds: a common framework and looking ahead *Environmental Research: Infrastructure and Sustainability*. 1(2), 023001.
96. Ivanov, V. Y., Xu, D., Dwelle, M. C., Sargsyan, K., Wright, D. B., Katopodes, N., Kim, J., Tran, V.N., Warnock, A., Fatichi, S., Burlando, P., Caporali, E., Restrepo, P., **Sanders, B.F.**, Chaney, M.M, Dunes, A.M.B., Nardi, F., Vivoni, E.R., Istanbuluoglu, E., Bisht, G., Bras, R. L. (2021). Breaking Down the Computational Barriers to Real-Time Urban Flood Forecasting. *Geophysical Research Letters*, e2021GL093585.
97. Gudino-Elizondo, N., Brand, M. W., Biggs, T. W., Hinojosa-Corona, A., Gómez-Gutiérrez, Á., Langendoen, E., ... & **Sanders, B. F.** (2022). Rapid assessment of abrupt urban mega-gully and landslide events with structure-from-motion photogrammetric techniques validates link to water resources infrastructure failures in an urban periphery. *Natural Hazards and Earth System Sciences*, 22(2), 523-538.
98. Jong-Levinger, A., Banerjee, T., Houston, D., and **Sanders, B.F.** (2022). Compound post-fire flood hazards considering infrastructure sedimentation. *Earth's Future*, 10(8), <https://doi.org/10.1029/2022EF002670>.  
*Paper selected for [Editor's Highlight](#) published in Nature Climate Change.*
99. Kahl, D.T., Schubert J.E., Jong-Levinger, A. and **Sanders, B. F.** (2022) Grid edge classification method to enhance levee resolution in dual-grid flood inundation models. *Advances in Water Resources*, 168, 104287.
100. Brand, M.W., Buffington, K., Rogers, J.B., Thorne, K., Stein, E.D., and **Sanders, B. F.** (2022). Multi-decadal simulation of marsh topography under sea level rise and episodic sediment loads. *Journal of Geophysical Research: Earth Surface*, 127(9), e2021JF006526.
101. Schubert, J.E., Luke, A., AghaKouchak, A. and **Sanders, B.F.** (2022) A framework for mechanistic flood inundation forecasting at the metropolitan scale. *Water Resources Research*, 58(9). <https://doi.org/10.1029/2021WR031279>
102. **Sanders, B.F.**, Schubert, J.E., Kahl, D.T., Mach, K.A., Brady, D., AghaKouchak, A., Forman, F., Matthew, R.A., Ulibarri, N., and Davis S.J. (2023). Large and inequitable flood risk in Los Angeles, California. *Nature Sustainability*, 6(1), 47-57. <https://doi.org/10.1038/s41893-022-00977-7>  
*Paper selected for [News & Views Article](#) published in Nature Sustainability*
103. Ulibarri, N., Valencia-Uribe, C., **Sanders, B.F.**, Schubert, J.E., Matthew, R., Forman, F., Allaire, M. and Brady, D. (2023) Framing the problem of flood risk and flood management in metropolitan Los Angeles. *Weather, Climate and Society*, <https://doi.org/10.1175/WCAS-D-22-0013.1>
104. Jiang, A.L., Hsu, K., **Sanders, B.F.** and Sorooshian, S. (2023) Topographic hydro-conditioning to resolve surface depression storage and ponding in a fully distributed hydrologic model. *Advances in Water Resources*, 104449. <https://doi.org/10.1016/j.advwatres.2023.104449>
- 105.

**Chapters of  
Books or  
Collections**

- 
1. **Sanders, B. F.** (2017). Hydrodynamic Modeling of Urban Flood Flows and Disaster Risk Reduction, *Oxford Research Encyclopedia of Natural Hazards Science*, Oxford University Press.  
<https://doi.org/10.1093/acrefore/9780199389407.013.127>
  2. **Sanders, B. F.**, Matthew, R., Luke, A., Goodrich, K.A., Basolo, V., Eguiarte, A., Boudreau, D., and Feldman, D.L.. (1997). A Paradigm of Actionable and Accessible Local Flood Hazard Information (Eds.), *Routledge Handbook of Environmental Security*, Routledge, 215-224.  
<https://www.taylorfrancis.com/chapters/edit/10.4324/9781315107592-21/>
  3. Mach, K.J., Hino, M., Siders, A.R., Koller, S.F., Kraan, C.M., Niemann, J. and **Sanders, B.F.** (2022). From Flood Risk Management to Flood Risk Adaptation: Current Practices and Emerging Innovations, *Oxford Encyclopedia of Water Resources Management and Policy*, Oxford University Press.  
<https://doi.org/10.1093/acrefore/9780199389414.013.819>

**Conference  
Papers**

- 
1. **Sanders, B. F.**, Katopodes, N. D. (1997). Control of Multi-Dimensional Wave Motion in Shallow-Water. In Spaulding, M. L., Blumberg, A. F. (Eds.), *Proceedings of the 5th International Conference on Estuarine and Coastal Modeling*, Alexandria Virginia (pp. 267-278).
  2. **Sanders, B. F.**, Katopodes, N. D. (1997). Optimal Control of Sudden Water Release from a Reservoir. In Holly, F. M., Alsaffar, A. (Eds.), *Proceedings of the XXVII Congress of the International Association for Hydraulic Research*, Theme A (pp. 314-319).
  3. **Sanders, B. F.**, Katopodes, N. D. (1998). Adaptive Control of Shallow-Water Waves. In, *Proceedings of the 3rd International Conference on Hydroscience and Engineering*, Cottbus, Germany. (Award Winning Paper).
  4. Katopodes, N. D., **Sanders, B. F.** (1999). Control of Shallow-Water Flow and Transport. In, *Proceedings of the International Meeting on Numerical Simulation of Hydrodynamic Systems*. Zaragoza, Spain: Applied Mathematics to Industrial Flow Problems program, European Community Science Foundation.
  5. **Sanders, B. F.**, Jaffe, D. (1999). Mitigation of Extreme Flooding Events by Tactical Depression Wave Control. In, *Proceedings of the 1999 ASCE International Water Resources Engineering Conference*, Seattle, Washington (pp. 476).
  6. Piasecki, M., **Sanders, B. F.** (1999). Control of Estuarine Salinity using the Adjoint Method. In, *Proceedings of the 6th International Conference on Estuarine and Coastal Modeling*, New Orleans, Louisiana.
  7. **Sanders, B. F.**, Bradford, S. F. (2000). Computation of Tidal Co-Oscillation in Wetlands by Finite Volume Method. In, *Proceedings of the 14th Engineering Mechanics Conference*, ASCE, Austin. EM2000.



8. Jaffe, D. A., **Sanders, B. F.** (2001). Tactical Levee Breaching for Flood Mitigation. In, *Proceedings of the 3rd International Symposium on Environmental Hydraulics*, Tempe, Arizona.
9. Bradford, S. F., **Sanders, B. F.** (2001). Modeling Flows with Moving Boundaries Due to Flooding, Recession, and Wave Run-up. In, *Proceedings of the 7th International Conference on Estuarine and Coastal Modeling*, St. Petes Beach, Florida.
10. **Sanders, B. F.**, Pau, J. C. (2003). Parallel Implementation of an Explicit Finite-Volume Shallow-Water Model. In, *Proceedings of the 16th Engineering Mechanics Conference*, ASCE, Seattle. EM2003.
11. Arega, F., **Sanders, B. F.** (2003). Modeling Circulation and Mixing in Tidal Wetlands of the Santa Ana River. In, *Proceedings of the 8th International Conference on Estuarine and Coastal Modeling*, Monterey, California.
12. Argall, R., **Sanders, B. F.**, Poon, Y. K. (2003). Random-Walk Suspended Sediment Entrainment, Transport and Settling Model. In, *Proceedings of the 8th International Conference on Estuarine and Coastal Modeling*, Monterey, California.
13. **Sanders, B. F.** (2004). Dissipation and Anti-Dissipation of High-Resolution Schemes for Modeling Flow and Transport. In, *Proceedings of the 17th Engineering Mechanics Conference*, ASCE, Newark, Delaware. EM2004.
14. Begnudelli, L., Sanders, B. F. (2005). Wetting and Drying of Triangular Computational Cells. In, *Proceedings of the Joint ASCE/ASME/SES Conference on Mechanics and Materials*, Baton Rouge, LA. McMat 2005.
15. Morvan, H. P., **Sanders, B. F.** (2005). Modelling Open Channel Flow with Recirculation Zones: Comparison of 2D and 3D Models and Turbulent Closure Schemes. In, *Proceedings of the Joint ASCE/ASME/SES Conference on Mechanics and Materials*, Baton Rouge, LA. McMat 2005.
16. Begnudelli, L., **Sanders, B. F.** (2007). Simulation of the St. Francis Dam-Break Flood. In, *Proceedings of the 32nd Congress of IAHR*, Venice, Italy.
17. Sanders, B. F., Mrse, R. D. (2007). Resistance to Flooding by Mega Roughness. In, *Proceedings of the 32nd Congress of IAHR*, Venice, Italy.
18. Howes, D. J., Burt, C. M., **Sanders, B. F.** (2009). Flow Conditioner Design for Improving Open Channel Flow Measurement Accuracy from a SonTek Argonaut-SW. In, *Proceedings of the USCID Fifth International Conference on Irrigation and Drainage*, Salt Lake City, Utah.
19. Gallegos, H. A., Schubert, J. E., **Sanders, B. F.** (2009). Urban Dam-Break Flood Inundation Modeling with LiDAR Terrain Data: Validation at Baldwin Hills, California. In, *Proceedings of the 33rd IAHR Congress: Water Engineering for a Sustainable Environment*, Vancouver, CA.
20. 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 IAHR Congress: Water Engineering for a Sustainable Environment*, Vancouver, CA.

21. Gallien, T. W., Schubert, J. E., Poon, Y. K., **Sanders, B. F.** (2011). The Effects of Increased Water Levels in the Eastern Pacific: Development and Validation of a Wave and Tidal Urban Inundation Model [Conference]. In, *Proceedings of the 34rd IAHR Congress: Balance and Uncertainty – Water in a Changing World*, Brisbane, Australia.
22. Poon, Y., **Sanders, B. F.**, Mason, R., Stein, R. (2011). Sea Level Rise Impact Assessment and Mitigation Alternatives Development for Balboa Island and Little Balboa Island, City of Newport Beach, California. In, *Coastal Engineering Practice*. 2011 Conference on Coastal Engineering Practice. ASCE.
23. Poon, Y., **Sanders, B. F.**, Mason, R., Stein, R. (2012). Sea Level Rise Impact Assessment and Mitigation Alternatives for Balboa Islands, City of Newport Beach, California. In, *Coastal Engineering Proceedings*. International Conference on Coastal Engineering 2012.
24. **Sanders, B. F.**, Luke, A., Schubert, J., Goodrich, K. ... (2018). Tapping the power of shallow-water models for flood hazard mapping. *EPiC Series in Engineering*, Volume 3: HIC 2018. 13th International Conference on Hydroinformatics, 1851-1858.
25. **Sanders, B. F.**, Vargas D., Schubert, J.E., Gunino-Elizondo, N, AghaKouchak, A., Allaire, M., Matthew, R.A., Orbinski, J., and Burt, M. (2019). The Case for Collaborative Flood Modeling in Paraguay [Conference]. *Proceedings of the 38rd IAHR Congress: Water – Connecting the World*, Panama City, Panama.

---

**Oral  
Presentations  
at Technical  
Meetings,  
Workshops  
and  
Conferences**

1. "Optimal Control of Sudden Water Release from a Reservoir", The 27th Congress of the International Association for Hydraulic Research, San Francisco, California. (August 11, 1997).
2. "Control of Multi-dimensional Wave Motion in Shallow-Water", Sanders, B.F. Fifth International Conference on Estuarine and Coastal Modeling, Alexandria, Virginia. (October 22, 1997).
3. "Adaptive Control of Shallow Water Waves", 3rd International Conference on Hydrosience and Engineering, Cottbus, Germany. (September 2, 1998). Plenary Presentation.
4. "Mitigation of Extreme Flooding Events by Tactical Depression Wave Control", ASCE International Water Resources Engineering Conference, Seattle, Washington. (August 12, 1999).
5. "UCI Coastal Runoff Impact Study, Progress Report: the Sun, the Moon, and Bacterial Pollution at Huntington Beach", National Water Research Institute Research Advisory Board Meeting, Costa Mesa, Ca. (April 29, 2000).
6. "Computation of Tidal Co-Oscillation in Wetlands by Finite Volume Method", EM2000, the 14th Engineering Mechanics Conference, ASCE, Austin. (May 24, 2000).

7. "Advances in the Computation of Long Waves by Godunov-type Finite Volume Method", Hydraulics and Hydrology Technical Group, Orange County Branch, Los Angeles Section, ASCE. (June 8, 2000). Invited Presentation.
8. "Flushing Properties of the Talbert Channel Network", Presentation to Blue Ribbon Panel called by the National Water Research Institute to investigate causes of near-shore bacterial pollution at Huntington Beach, Costa Mesa, California. (June 22, 2000).
9. "Cross Shelf Transport by Internal Tides: Implications for the fate of sewage discharged through an offshore ocean outfall", Eastern Pacific Ocean Conference, Fallen Leaf Lake, California. (September 2001).
10. "Dynamics of Off-Line Diversions for Flood Stage Reduction", San Francisquito Watershed Council. (January 15, 2003).
11. "Parallel Implementation of an Explicit Finite-Volume Shallow-Water Model", 16th Engineering Mechanics Conference, ASCE, Seattle. (2003).
12. "Hydrodynamic modeling of fecal indicator bacteria in Talbert Marsh based on loads from urban runoff, bird feces, and resuspended sediments", Annual Meeting of the Southern California Academy of Sciences, Long Beach, California. (May 2004).
13. "Dissipation and Anti-Dissipation of High-Resolution Schemes for Modeling Flow and Transport", 17th Engineering Mechanics Conference, ASCE, Newark, Delaware. (2004).
14. "Advances in shallow-water modeling with Godunov-type finite volume schemes and applications in Southern California", Exponent, Irvine. (July 14, 2005).
15. "Recent Advances in Hydrodynamic Modeling of Flood Inundation", Los Angeles District, US Army Corps of Engineers. (March 2006).
16. "Simulation of the St. Francis Dam Break Flood and Impact of Resolved Topographic Roughness on Model Predictions of Flow Resistance", 15th U.S. National Congress of Theoretical and Applied Mechanics, Boulder, Colorado. (June 2006).
17. "High-resolution hydrodynamic modeling of flood inundation", ARUP, London. (November 14, 2006).
18. "Evaluation of on-line DEMS for flood inundation modeling", 18th Engineering Mechanics Division Conference, ASCE, Blacksburg, VA. (June 4, 2007).
19. "Resistance to flooding by mega-roughness", 32nd Congress of IAHR, Venice, Italy. (July 2, 2007).
20. "Advances in flood inundation modeling and integration of GIS", Los Angeles County, Department of Regional Planning. (August 15, 2007).
21. "Advances in flood inundation modeling and opportunities for high resolution geospatial data resources", Los Angeles Region Imagery Acquisition Consortium (LAR-IAC). (August 30, 2007).

22. "Advances and opportunities in flood inundation modeling using high resolution geospatial data", Los Angeles County Department of Public Works. (September 18, 2007).
23. "Advances in flood inundation and the role of GIS", City of Los Angeles, Department of Public Works, Bureau of Engineering GIS Meeting. (September 4, 2008).
24. "High resolution modeling of urban dam-break flooding: A case study of Baldwin Hills, California", Los Angeles County Department of Public Works. (June 16, 2009).
25. "High resolution modeling of flood inundation", Noblis, Falls Church, VA. (June 23, 2009).
26. "Improved Flood Inundation Modeling with LAR-IAC LiDAR Data and Orthoimagery", Los Angeles Region Imagery Acquisition Consortium (LAR-IAC). (July 30, 2009).
27. "Unstructured Grid Modeling of Coastal Flood Inundation at Newport Harbor", 33rd Congress of IAHR, Vancouver, Canada. (August 11, 2009).
28. "Urban Dam-Break Flood Inundation Modeling with LiDAR Terrain Data: Validation at Baldwin Hills, California", 33rd Congress of IAHR, Vancouver, Canada. (August 11, 2009).
29. "Modeling coastal flooding in urbanized lowlands: a multi-dimensional high-resolution approach", Sea Level Rise Workshop, Scripps Forum, La Jolla, CA. (May 18, 2010). (Invited)
30. "ParBreZo: A parallel, unstructured grid, Godunov-type, shallow-water model for high-resolution flood simulation at the regional scale", Engineering Mechanics Institute 2010, Los Angeles. (August 8, 2010 - August 11, 2010).
31. "Modeling the Spatiotemporal Distribution of Dam-Break Inundation in a Developed Area: Topographic and Hydrodynamic Controls", AGU Fall Meeting, San Francisco. (December 13, 2010 - December 17, 2010).
32. "High Resolution Modeling of Urban Dam-Break Flooding", SIAM Conference on Mathematical and Computational Issues in the Geosciences, Long Beach, Ca. (March 23, 2011). (Invited)
33. "Two-Dimensional Hydraulic Modeling of Urban Flood Inundation: Strategies for Accuracy and Efficiency", National Hydrologic Warning Council Conference and Exhibition, San Diego, Ca. (May 5, 2011).
34. "Godunov-based model of swash zone dynamics to advance coastal flood prediction", AGU Fall Meeting, San Francisco. (December 2012).
35. "Urban Coastal Flood Prediction: Implications of Modeling Methodology, Mitigation Strategies and Sea Level Rise", Headwaters to Ocean 2013, San Diego, California. (May 29, 2013).
36. "Terrestrial laser scanning of anthropogenic beach berms for urban flood defense", AGU Fall Meeting, San Francisco. (December 10, 2013).

37. "Coastal Flooding and Climate Change", Sanders, B.F. 2014 Annual Public Meeting, Interagency Steering Committee on Multimedia Environmental Modeling (ISCMEM), Washington, DC. (February 25, 2014). (Invited)
38. "Flood hazard mapping in the coastal zone: accounting for multiple drivers of flood risk", IAHR Congress, IAHR, The Hague, The Netherlands. (June 30, 2015).
39. "Can fine resolution urban flood models increase spatial awareness of flood risk? Results of a household survey in Newport Beach, California", IAHR Congress, IAHR, The Hague, The Netherlands. (June 30, 2015).
40. "Communicating flood risk with street level data", Who Cares? Workshop on the Economies, Technologies and Ethics of Aid, Irvine, California. (October 1, 2015).
41. "Communicating flood risk with street level data", ASCE Orange County EWRI Meeting, ASCE, Irvine, California. (October 8, 2015). (Invited)
42. "Communicating flood risk with street level data", AGU Fall Meeting, San Francisco. (December 14, 2015).
43. "Co-development of coastal flood models: making the leap from expert analysis to decision-support", IAHR European Congress, IAHR, Liege, Belgium. (Plenary Presentation). (July 27, 2016). (Invited)
44. "Development of Context-Sensitive Hydraulic Flood Models to Meet End-User Needs for Disaster Risk Reduction", Flood Hazard Modeling Workshop, USGS Pacific Coastal and Marine Science Center, Santa Cruz, CA. (January 24, 2017).(Invited)
45. "SedRISE: Coastal Sediment Management for Resilient Infrastructure and Sustainable Environments", Management and Technical Advisory Group Annual Meeting, NOAA Ecological Effects of Sea Level Rise Program, Carlsbad, California. (June 28, 2017). (Invited)
46. "Advancing Disaster Risk Reduction with Community-Based Flood Modeling", Headwaters to Ocean 2017, Irvine, CA. (May 24, 2017).
47. "Collaborative Flood Modeling in Southern and Baja California - Meeting End User Needs for Decision-Making", AGU Fall Meeting, New Orleans, LA. (2017). (Invited)
48. "Collaborative Flood Modeling at the US/Mexico Border", Cerrito 2018, Fundacion Paraguaya, Asuncion, Paraguay. (May 23, 2018). (Invited)
49. "Tapping the Power of Shallow-Water Models for Flood Hazard Mapping", Sanders, B.F. 13th International Hydroinformatics Conference HIC 2018, Palermo, Italy. (July 2, 2018).
50. "Collaborative Flood Modeling to Meet End-User Needs for Decision-Making", Sanders, B.F. 1st International Environmental Peacebuilding Conference, Beckman Center for the National Academies of Sciences. (October 23, 2019.) (Invited)

51. "Collaborative Flood Modeling for Peacebuilding", Sanders, B.F. 1st International Environmental Peacebuilding Conference, Beckman Center for the National Academies of Sciences. (October 24, 2019.) (Invited)
52. "Regional Forecasting of Street-Scale Flood Inundation with a Variable-Fidelity Model: Accuracies and Runtimes for Hurricane Harvey," AGU Fall Meeting, Virtual (2020).
53. "Metropolitan-Wide Distribution of Parcel-Scale Exposure to Flooding by Geography, Population and Hazard Driver for Examination of Equity and Prioritizing Action", AGU Frontiers in Hydrology Meeting, Puerto Rico. (June 20, 2022)
54. "Flood Risk Adaptation", Workshop on Flood and Earthquake Modeling of Dams and Levees in a Changing Climate, Engineering Research and Development Center, US Army Corps of Engineers, Vicksburg, MS (February 16, 2023)

---

**Seminar  
Presentations**

1. "Control of Shallow-Water Waves Using the Adjoint Sensitivity Method", Department of Civil and Coastal Engineering Seminar Series, University of Florida. (February, 1997).
2. "Control of Shallow-Water Waves Using the Adjoint Sensitivity Method", Department of Civil and Environmental Engineering Seminar Series, Lafayette College. (February, 1997).
3. "Control of Shallow-Water Waves Using the Adjoint Sensitivity Method", Department of Civil and Environmental Engineering Seminar Series, University of California, Irvine. (March, 1997).
4. "Control of Shallow-Water Waves Using the Adjoint Sensitivity Method", Department of Civil and Environmental Engineering Seminar Series, University of California, Davis. (March 3, 1998).
5. "Control of Shallow-Water Waves Using the Adjoint Sensitivity Method", Environmental Engineering Seminar Series, University of California, Berkeley. (April 24, 1998).
6. "Modeling Circulation and Dispersion in Southern California Tidal Wetlands", Environmental Fluid Mechanics Seminar Series, Department of Civil and Environmental Engineering, Stanford University. (February 24, 2003).
7. "Advances in shallow-water modeling with Godunov-type finite volume schemes and applications in Southern California", Selected Topics in Environmental and Water Resources Engineering, Department of Civil and Environmental Engineering, UCLA. (April 26, 2005).
8. "Evaluation of on-line DEMS for flood inundation modeling", Department of Engineering, University of Ferrara, Ferrara Italy. (October 26, 2006).

9. "A Stable, Conservative and Monotone Scheme to Modeling Wetting and Drying in a Godunov-type Finite-Volume Shallow-Water Code", CFD@Nottingham Seminar Series, University of Nottingham, Nottingham UK. (November 15, 2006).
10. "Hydrodynamic modeling of flood inundation", Sanders, B.F. School of Geographical Sciences, University of Bristol, Bristol UK. (January 16, 2007).
11. "Numerical Methods for Flood Modeling", Mathematical Sciences Unit, Health and Safety Laboratory, Buxton UK. (January 18, 2007).
12. "Simulation of the St. Francis Dam Break Flood with a Godunov-type Shallow-Water Model", UNESCO-IHE Institute for Water Education, Delft, The Netherlands. (January 26, 2007).
13. "Simulation of the St. Francis Dam Break Flood with a Godunov-type Shallow-Water Model", Department of Computing and Mathematics, Manchester Metropolitan University, Manchester UK. (February 21, 2007).
14. "Simulation of the St. Francis Dam Break Flood with a Godunov-type Shallow-Water Model", Sanders, B.F.. School of Computing, University of Leeds, Leeds UK. (March 2, 2007).
15. "Simulation of the St. Francis Dam Break Flood with a Godunov-type Shallow-Water Model", Sanders, B.F. Área de Mecánica de Fluidos del Centro Politécnico Superior (CPS) de la Universidad de Zaragoza, Zaragoza Spain. (April 26, 2007).
16. "Advances in flood modeling with Godunov-type methods", HR Wallingford, Wallingford, UK. (July 18, 2007).
17. "Modeling and Mechanics of the St. Francis Dam-Break Flood", Department of Civil Engineering, University of Birmingham, Birmingham UK. (July 19, 2007).
18. "Hydrodynamic modeling of flood inundation", Los Alamos National Laboratory. (November 6, 2007).
19. "Hydrodynamic routing of flood inundation over urban landscapes: Effective utilization of geospatial data and efforts to improve run-time efficiency", Fluid Mechanics and Hydrology Seminar Series, Department of Civil and Environmental Engineering, University of California, Berkeley. (November 7, 2008).
20. "The Rise and Fall of the Ocean: A Story of Tides, Waves and Long Term Trends", Fall Quarterly Meeting, CEE Affiliates, Irvine, CA. (November 9, 2012).
21. "A Recipe for Accurate Coastal Flood Mapping in Urbanized Lowlands", Sanders, B.F. Fall Quarterly Meeting, CEE Affiliates, Irvine, CA. (November 9, 2012).

22. "Towards improved prediction and mitigation of beach overwash: Terrestrial LiDAR observation of dynamic beach berm erosion", AGU Fall Meeting, San Francisco. (December 2012).
23. "Urban Coastal Flood Prediction: Implications of Modeling Methodology, Mitigation Strategies and Sea Level Rise", Headwaters to Ocean 2013, San Diego, California.. (May 29, 2013).
24. "Terrestrial laser scanning of anthropogenic beach berms for urban flood defense", AGU Fall Meeting, San Francisco. (December 10, 2013).
25. "Coastal Flooding and Climate Change", Annual Public Meeting, Interagency Steering Committee on Multimedia Environmental Modeling (ISCMEM), Washington, DC. (February 25, 2014).
26. "Can fine resolution urban flood models increase spatial awareness of flood risk? Results of a household survey in Newport Beach, California", IAHR Congress, The Hague, The Netherlands.(June 30, 2015).
27. "Communicating flood risk with street level data", Who Cares? Workshop on the Economies, Technologies and Ethics of Aid, Irvine, California. (October 1, 2015). Invited Presentation.
28. "Communicating flood risk with street level data", ASCE Orange County EWRI Meeting, ASCE, Irvine, California. (October 8, 2015). Invited Presentation.
29. "Communicating flood risk with street level data", AGU Fall Meeting, AGU, San Francisco. Peer Reviewed. (December 14, 2015). Invited Presentation.
30. "Development of context-sensitive hydraulic flood models to meet end-user needs for disaster risk reduction", Department of Civil and Environmental Engineering, Utah State University, Logan, Utah. (September 21, 2016).
31. "Collaborative Flood Modeling to Meet End-User Needs for Decision-Making", Chair of Hydrology and River Basin Management, Technical University of Munich, Munich, Germany. (June 26, 2019).
32. "Regional, Fine-Resolution Modeling of Coastal Flood Hazards—A Strategy", Chair of Hydrology and River Basin Management, Technical University of Munich, Munich, Germany. (June 28, 2019).
33. "Collaborative Flood Modeling—A pathway for building trust and integrating equity into flood management", Urban Flood Resilience Cyberseminar Series, CUAHSI. (September 29, 2021).
34. "Understanding and Addressing Flood Risk with Simulation Models" National Academy of Sciences Distinctive Voices Seminar Series, Beckman Center for the National Academies of Sciences, Irvine, CA (November 16, 2022).



35. "A Digital Platform for Understanding and Addressing Megacity Flood Risk and Inequities" Winter Seminar Series, Department of Civil and Environmental Engineering, UCLA. Los Angeles, CA (January 25, 2023).
36. "A Digital Platform for Understanding and Addressing Megacity Flood Risk and Inequities" Guest Lecture, *Flood Risk Management* (course), Department of Civil and Environmental Engineering, UC Berkeley. Berkeley CA (February 8, 2023).
37. "A Digital Platform for Understanding and Addressing Megacity Flood Risk and Inequities" Guest Lecture, *Digital Terrain Modeling* (Course), Department of Civil and Environmental Engineering, University of Houston. Houston, TX (April 19, 2023).

**Invited  
Presentations  
for Public  
Outreach and  
Research  
Engagement**

- 
1. "Trade-offs Between Beach Water Quality and Restoring Coastal Wetlands", Water and Southern California's Environment: The Next Utility Crisis?, UCThink Community Forum Series, Beckman Center, Irvine. (March 14, 2001).
  2. "Flood Risk Management in Urban Areas with High Resolution Models and Geospatial Data", Santa Ana Watershed Project Authority, Riverside, Ca. (March 4, 2011).
  3. "Engineering Responses to Sea Level Rise and Coastal Flooding", Aquatic Academic Course on Sea Level Rise, Aquarium of the Pacific, Long Beach, Ca. (May 17, 2011).
  4. "Water Research at UC Irvine", The State of the State of California's Natural Resources, Toward a Sustainable 21st Century Conference Series, University of California at Irvine, Arnold & Mabel Beckman Center of the National Academy of Sciences and Engineering, Irvine, California. (November 8, 2012).
  5. "The Rise and Fall of the Ocean: A Story of Tides, Waves and Long Term Trends", Fall Quarterly Meeting, CEE Affiliates, Irvine, CA. (November 9, 2012).
  6. "A Recipe for Accurate Coastal Flood Mapping in Urbanized Lowlands", Fall Quarterly Meeting, CEE Affiliates, Irvine, CA. (November 9, 2012).
  7. "Coastal Flooding: A Story of Rainfall, Tides, Waves and Sea Level Rise", Laguna Greenbelt Annual Meeting, Laguna Beach, California. (February 21, 2013).
  8. "CEE@UCI", Sanders, B.F. Building Partnerships for Ocean Health in Southern California, Irvine, California. (May 8, 2015).
  9. "Communicating flood risk with street level data", Fostering Climate Resilient Coastal Communities, Irvine, California. (July 22, 2015).
  10. "Water.CEE@UCI", Samueli School External Advisory Board Meeting, Irvine, California. (May 10, 2016).
  11. "Mapping and Communicating Flood Risk at the Local Level", California Coastal Resilience - Communities in Action, Irvine, California. (July 21, 2016).

12. "CEE@UCI", ASCE Orange County Report Card Symposium, ASCE, Irvine, California. (July 21, 2016).
13. "Flood Risk Visualizations for Newport Beach", Coastal Resilience in the face of sea level rise and stronger storms, UC Irvine and Environmental Nature Center, Newport Beach, California. (November 17, 2016).
14. "FloodRISE: Is Long Beach in Peril?", Rotary Club of Long Beach, California, Long Beach, California. (August 9, 2017).
15. "FloodRISE: Visualizing Coastal Flooding", Orange County Community Foundation, Newport Beach, California. (August 23, 2017).
16. "Enabling Solutions to Sea Level Rise", Sea Level Rise: How Will It Affect You?, Speak Up Newport - The Community Forum of Newport Beach, Newport Beach, California. (2018).
17. "Coastal Change", Bridges OC 2019, Building Connections for a Sustainable Future. School of Social Ecology, UCI. May 3, 2019.
18. "Beach Erosion Trends in the OC", Board of Directors Meeting, Orange County Council of Governments, Irvine, California, (September 26, 2019.)
19. "Visualizing Flooding", Faculty Slam Interdisciplinary Research Showcase and Workshop. UCI. (October 25, 2019).
20. "Regional, Fine-Resolution Modeling of Compound Flooding," AECOM *Chew on This* Virtual Seminar Series, April 13, 2020.
21. "Climate Change Town Hall with Assemblywoman Cottie Petrie-Norris". Facebook Live Virtual Meeting discussion climate change and coastal challenges (September 15, 2020).
22. "A Strategy to Address Orange County Beach Loss," UCI Civil and Environmental Affiliates Fall Mixer at Crystal Cove, October 28, 2021.
23. "South Florida FloodBridge Flood Hazard Mapping," Miami-Dade County Department of Public Works, June 15, 2021.
24. "FloodBridge Flood Hazard Mapping," Southern California Association of Governments Climate Adaptation Working Group, June 24, 2021.
25. "FloodBridge Flood Hazard Mapping," Southern California Association of Governments Climate Adaptation Working Group, June 24, 2021.
26. "FloodBridge Flood Hazard Mapping," Santa Cruz Flood Control District, June 26, 2021.
27. "Integrating Flood Risk into Southern California Greenprint," Southern California Association of Governments, July 21, 2021.
28. "FloodBridge Flood Hazard Mapping," Joint Meeting of Los Angeles and Orange County Flood Control Districts", July 21, 2021.
29. "South Florida FloodBridge Flood Hazard Mapping," South Florida Water Management District", September 29, 2021.

30. "Large and Equitable Flood Risk in Los Angeles, California," Los Angeles County Department of Public Works, October 26, 2022.
31. "A Digital Platform for Community-Engaged, Science-Informed Solutions to Coastal Erosion and Beach Loss in California," Coastal Solutions Workshop, University of California Irvine, December 20, 2022.
32. "Engineering Systems for Water Security," NSF Engineering Research Visioning Alliance, Virtual, January 30, 2023
33. "A Platform for Effective and Equitable Flood Risk Adaptation", California Department of Water Resources, Floodplain Management Branch (February 6, 2023)
34. "A Platform for Effective and Equitable Flood Risk Adaptation", Flood and Water Infrastructure Committee, County Engineers Association of California (March 8, 2023)
35. "Slip Sliding Away: Tracking Every Grain of Sand to Preserve Beaches", Democratic Women of South Orange County, San Juan Capistrano (May 1, 2023).

---

**Poster  
Presentations**

1. **Sanders, B. F.**, Katopodes, N. D. and Boyd J.P. (1994) A Spectral Approach to Modeling Solitary Water Waves with the KdV Equation. *Laboratory for Scientific Computation Poster Conference*, University of Michigan College of Engineering. October 13, 1994.
2. **Sanders, B. F.**, Katopodes, N. D. (1996) Control of Transient Open Channel Flow Using the Adjoint Equation Solution. *Laboratory for Scientific Computation Poster Conference*, University of Michigan College of Engineering. October 10, 1996.
3. **Sanders, B.F.**, Arega, F. and Sutula, M. (2005) Modeling of Fecal Indicator Bacteria in a Tidal Wetland in Response to Urban Runoff, Bird Droppings, and Resuspended Sediments, *9th International Conference on Estuarine and Coastal Modeling*, Charleston, South Carolina. October 31, 2005.
4. Begnudelli, L. and Sanders, B.F. (2005) Unstructured Grid Finite Volume Algorithm for Shallow-Water Flow and Transport with Wetting and Drying, *9th International Conference on Estuarine and Coastal Modeling*, Charleston, South Carolina. October 31, 2005.
5. Gallien, T. Schubert, J., Poon, Y. and **Sanders B.F.** (2010) Mapping developed coastal flood zones for climate change adaptation planning: Accounting for tides, waves, sea level rise, and flood defense structures. *AGU Fall Meeting*. San Francisco, California. December 13, 2010.
6. **Sanders. B.F.**, Gallien, T.W., and Schubert, J.E. (2011) Adapting to Sea Level Rise: Development and Validation of an Urban Inundation Model. *NSF CMMI Research and Innovation Conference*, Atlanta, GA. January 4, 2011.

7. Schubert, J.E. and **Sanders, B.F.** (2011) Flood Inundation Modeling Method and Terrain Characterization Effects on Predictions of Coastal Flooding. *ESRI International User Conference*, San Diego, CA. July 23, 2011.
8. **Sanders B.F.**, Gallegos, H., Schubert J.E. (2011) Dam-Break Flooding and Structural Damage in a Residential Neighborhood: Performance of a coupled hydrodynamic-damage model. *AGU Fall Meeting*. San Francisco, California. December 11, 2011.
9. Schubert, J.E., and **Sanders B.F.** (2011) Unstructured meshing and parameter estimation for urban dam-break flood modeling: building treatments and implications for accuracy and efficiency. *AGU Fall Meeting*. San Francisco, California. December 11, 2011.
10. Kim, B. **Sanders, B.F.**, Kim, H. and Famiglietti, J.S. (2011) Performance of a mixed-mesh Godunov-based flood inundation model. *AGU Fall Meeting*. San Francisco, California. December 11, 2011.
11. Kim, H, Kim, B., Lu, Z., Yamakazi, D., **Sanders, B.F.**, Oki, T., Famiglietti, J.S. (2011) Boundary Condition Transfer from Global Atmospheric Model to Local Flood Inundation Model. *EGU General Assembly*. Vienna, Austria. April 2, 2012.
12. Kim, B. **Sanders, B.F.**, Kim, H., Han, K. and Famiglietti, J.S. (2012) Methodology for Establishment of Integrated Flood Analysis System. *AGU Fall Meeting*. San Francisco, California. December, 2012.
13. **Sanders, B.F.**, Kim, B., Schubert J.E. and Famiglietti, J.S. (2012) A study of effective mesh type for 2D flood inundation simulation. *AGU Fall Meeting*. San Francisco, California. December, 2012.
14. Schubert J.E, Gallien, T., Shakeri Majd, M., and **Sanders, B.F.** (2012) Towards improved prediction and mitigation of beach overwash: Terrestrial LiDAR observation of dynamic beach berm erosion. *AGU Fall Meeting*. San Francisco, California. December, 2012.
15. Shakeri Majd, M., and **Sanders, B.F.** (2012) Godunov-Based Model of Swash Zone Dynamics to Advance Coastal Flood Prediction. *AGU Fall Meeting*. San Francisco, California. December, 2012.
16. Kim, B., David, C.H., Druffel-Rodriguez, R., **Sanders, B.F.**, and Famiglietti, J.S. (2013) Modeling framework to link climate, hydrology and flood hazards: An application to Sacramento, California. *AGU Fall Meeting*. San Francisco, California. December, 2013.
17. Shakeri Majd, M., and **Sanders, B.F.** (2013) One dimensional modeling of anthropogenic beach berm erosion. *AGU Fall Meeting*. San Francisco, California. December, 2013.
18. Schubert J.E, **Sanders, B.F.** and Andreadis, K. (2013) Spatial Structure of a Braided River: Metric Resolution Hydrodynamic Modeling Reveals What SWOT Might See. *AGU Fall Meeting*. San Francisco, California. December, 2013.
19. Paiva, R.C., Durand, M.T., Schubert J.E, **Sanders, B.F.** and Andreadis, K. (2013) Discharge estimates on a small braided river based on synthetic SWOT measurements. *AGU Fall Meeting*. San Francisco, California. December, 2013.

20. Shakeri Majd, M., Schubert, J.E., Gallien, T. W. and **Sanders, B.F.** (2014) Two-Dimensional Numerical Modeling of Anthropogenic Beach Berm Erosion. *AGU Fall Meeting*. San Francisco, California. December, 2014.
21. Luke, A., Schubert, J.E., Cheng, L., AghaKouchak, A. and **Sanders, B.F.** (2014) Predicting Flood Hazards in Systems with Multiple Flooding Mechanisms. *AGU Fall Meeting*. San Francisco, California. December, 2014.
22. Begnudelli, L, Kaheil, Y., and **Sanders, B.F.** (2014) A computationally efficient 2D hydraulic approach for global flood hazard modeling. *AGU Fall Meeting*. San Francisco, California. December, 2014.
23. **Sanders, B.F.** and Schubert J.E, (2014) Large-scale, Two-Dimensional Hydraulic Modeling of a Braided River Using Multi-Resolution Topographic Data. *AGU Fall Meeting*. San Francisco, California. December, 2014.
24. Schubert, J., Cheung, W.H., Luke, A., Gallien, T., AghaKouchak A., Feldman, D., Mathew, R. and **Sanders, B.F.** (2015) Making Coastal Flood Hazard Maps to Support Decision-Making-What End Users Want. *AGU Fall Meeting*. San Francisco, California. December, 2015.
25. Moftakhari, H., AghaKouchak A., **Sanders, B.F.**, Feldman, D., Sweet, W., Matthew, R., and Luke, A. (2015) Sea-level Rise Increases the Frequency of Nuisance Flooding in Coastal Regions. *AGU Fall Meeting*. San Francisco, California. December, 2015.
26. Luke, A., **Sanders, B.F.**, AghaKouchak A., Vrugt, J.A., and Matthew, R. (2015) Flood Risk Analysis Using Non-Stationary Models: Application to 1500 Records and Assessment of Predictive Ability. *AGU Fall Meeting*. San Francisco, California. December, 2015.
27. Cheung, W.H., Houston, D., Schubert, J., Basolo, V., Feldman, R., Matthew, **Sanders, B.F.** and 6 others (2015) Coproduction of flood hazard assessment with public participation geographic information system. *AGU Fall Meeting*. San Francisco, California. December, 2015.
28. Schubert, J., Burns, M., **Sanders, B.F.**, Fletcher, T.D. (2016) To what extent can green infrastructure mitigate downstream flooding in a peri-urban catchment. *AGU Fall Meeting*. San Francisco, California. December, 2016.
29. Moftakhari, H., Salvatori, G., AghaKouchak A., Matthew, R.A., **Sanders, B.F.** (2016) Estimating flood risk along the coasts of United States considering compounding effects of multiple flood drivers. *AGU Fall Meeting*. San Francisco, California. December, 2016.
30. Moftakhari, H., Schubert, J.E., AghaKouchak A. Luke, A., Matthew, R.A., **Sanders, B.F.** (2017) Modeling Compound Flood Hazards in Coastal Embayments. *AGU Fall Meeting*. New Orleans, LA. December, 2017.
31. Jiang, A.-L., **Sanders, B.F.**, Nguyen, P., Hsu, K.L. (2018) What is the role of rainfall and flooding on motor vehicle accidents in Los Angeles? *AGU Fall Meeting*. Washington, D.C.. December, 2018.
32. **Sanders, B.F.**, Moftakhari, H., Schubert, J.E., AghaKouchak A., Matthew, R.A., (2019) Linking Statistical and Hydrodynamic Modeling to Map and

Communicate Compound Coastal Flood Hazards. *AGU Fall Meeting*. San Francisco, California. December, 2019.

33. Jiang, A.-L., Hsu, K.L., Lee, M.C., Yan, G., **Sanders, B.F.**, Nguyen, P., Sorooshian, S. (2019) Integration of Hydrological Modeling and Remote Sensing to Identify Potential Malaria Mosquito Breeding Sites. *AGU Fall Meeting*. San Francisco, CA. December, 2019.
34. Brand, M.W., Gudino, N., **Sanders, B.F.** (2019) Stochastic Watershed Modeling for an Environmental Impact Bond-Addressing Excessive Sedimentation at the US/Mexico Border. *AGU Fall Meeting*. San Francisco, CA. December, 2019.
35. Gudino-Elizondo, N., Brand, M.W., Biggs, T.W. and **Sanders, B.F.** (2019) The Contribution of Infrastructure Failure Towards Sediment Generation in a Rapidly Urbanizing Watershed. *AGU Fall Meeting*. San Francisco, CA. December, 2019.
36. Balaian, S., Abdolhosseini Qomi, M.J., **Sanders, B.F.** (2019) The Impact of Urban Form on Urban Flood Hazards. *AGU Fall Meeting*. San Francisco, CA. December, 2019.
37. Jiang, A.L., K Hsu, K., **Sanders, B.F.**, Sorooshian, S. (2020) Downscaling Surface Water Depth to Simulate Small-Scale Ponding: A Case Study in the Prairie Pothole Region of North America. *AGU Fall Meeting*. Virtual. December, 2020.
38. Kahl, D., Gudino, N, Schubert J.E. and, **Sanders, B.F.** (2020) Remote sensing of beaches: using satellite and airborne platforms to characterize a century of change in Orange County, California. *AGU Fall Meeting*. Virtual. December, 2020.
39. Jong, A., Schubert, J.E., Banerjee, T. and, **Sanders, B.F.** (2020) Multi-decadal prediction of habitat suitability for salt-marsh obligate birds under sea level rise and watershed inputs of sediment. *AGU Fall Meeting*. Virtual. December, 2020.
40. Jong, A., Banerjee, T. and, **Sanders, B.F.** (2021) Modeling the Under-Protection of Human Development From Post-Fire Floods and Debris Flows. *AGU Fall Meeting*. New Orleans, LA. December, 2021.
41. Jiang, A.L., K Hsu, K., **Sanders, B.F.**, Sorooshian, S. (2021) A New Topographic Conditioning Method to Integrate Surface Depressions in Physically Based Hydrologic Modeling. *AGU Fall Meeting*. New Orleans, LA. December, 2021.
42. Jiang, A.L., et al. (2021) Prediction of Malaria Vector Larval Habitat Distribution and Transmission in Ethiopia by Integrating Distributed Hydrologic Modeling with Remotely Sensed Data. *AGU Fall Meeting*. New Orleans, LA. December, 2021.
43. Kahl, D., Schubert, J.E. and, **Sanders, B.F.** (2021) Improved representation of urban flood management infrastructure in a regional flood hazard model. *AGU Fall Meeting*. New Orleans, LA. December, 2021.
44. Estereem, N. , Anderson, E., Grove, K., **Sanders, B.F.**, Schubert, J.E. Mach, K.J. (2021) Fish in the Street and Rivers in the Concrete: Resident Perspectives on Climate Mobility in Miami-Dade County, FL, USA. *AGU Fall Meeting*. New Orleans, LA. December, 2021.

45. **Sanders, B.F.**, et al. (2022) Metropolitan-wide modeling of urban flood risk in Los Angeles, California. *AGU Fall Meeting*. Chicago, IL. December, 2022.
46. Jong-Levinger, A. and **Sanders, B.F.** (2022). Estimating compound post-fire Flood hazards using a stochastic simulation framework. *AGU Fall Meeting*. Chicago, IL. December, 2022.
47. Kahl, D., Vulis, L., Schubert, J., Fofoula-Georgiou, E., Milillo, P. and **Sanders, B.F.** (2022). Space-time variabilities of metropolitan beaches based on satellite imagery. *AGU Fall Meeting*. Chicago, IL. December, 2022.
48. Balaian, S., **Sanders, B.F.**, and Abdolhosseini Qomo, M.J., (2022) The impact of urban texture on flood inundation. *AGU Fall Meeting*. Chicago, IL. December, 2022.
- 49.

**Briefings for  
Elected  
Officials and  
Staff**

- 
1. "High Resolution Flood Inundation Modeling" Briefing to Congresswoman Grace Napolitano, University of California, Irvine. (April 6, 2010).
  2. "Enabling Solutions to Sea Level Rise", Briefing of Santa Ana Mayor Pro Tem Michele Martinez, Blum Center for Poverty Alleviation, Irvine. (2018).
  3. "Enabling Solutions to Sea Level Rise", Briefing to Assemblywoman Cottie Petrie-Norris. Department of Civil and Environmental Engineering, UCI. (May 3, 2019.)
  4. "A Digital Platform for Community-Engaged, Science-Informed Solutions to Coastal Erosion and Beach Loss in California", Briefing for staff of Representative Katie Porter. Interdisciplinary Science and Engineering Building, UCI. (January 13, 2023.)
  5. "A Digital Platform for Community-Engaged, Science-Informed Solutions to Coastal Erosion and Beach Loss in California", Briefing to Assemblywoman Laura Davies. 74th District Office. San Juan Capistrano, (January 27, 2023.)
  6. "A Digital Platform for Community-Engaged, Science-Informed Solutions to Coastal Erosion and Beach Loss in California", Briefing for staff of Representative Mike Levin. Interdisciplinary Science and Engineering Building, UCI. (February 6, 2023.)
  7. "A Platform for Effective and Equitable Flood Risk Adaptation", Briefing for staff of Senator Diane Feinstein. Interdisciplinary Science and Engineering Building, UCI. (March 1, 2023.)
  8. "A Platform for Effective and Equitable Flood Risk Adaptation", Briefing for staff of Representative Young Kim. Interdisciplinary Science and Engineering Building, UCI. (March 27, 2023.)
  9. Coastal dynamics (untitled). Briefing to federal, state and local elected officials and agency representatives at the invitation of Congressman Mike Levin, Solana Beach, California, April 13, 2023.

10. Coastal dynamics (untitled). Briefing to federal, state and local elected officials and agency representatives at the invitation of Congressman Mike Levin, San Clemente, California, April 13, 2023.

---

## Features

1. Hall, J. (2020) Environmental impact bonds incentivize watershed restoration, EOS, 21 September. Editor's Highlight of Brand et al. (2020)  
<https://eos.org/editor-highlights/environmental-impact-bonds-incentivize-watershed-restoration>
2. *Coastal Crisis, California's Vanishing Beaches*. Documentary Film Produced by OCWorld. Released February 2022. Award Winning Documentary Film featuring B.F. Sanders. <https://www.youtube.com/watch?v=pJZsXZeA1F4>
3. Franke, J. (2022) Combined force of fire and water. *Nature Climate Change*. Editor's Highlight of Jong-Levinger et al. (2022)  
<https://www.nature.com/articles/s41558-022-01472-9>
4. Bates, P. (2023) Uneven burden of urban flooding. *Nature Sustainability*, 6, 9–10. News & Views article of Sanders et al. (2023).  
<https://www.nature.com/articles/s41893-022-01000-9>
5. How to harness stormwater and the concerning 100-year flood assessment, ABC7 Eyewitness Newsmakers, April 16, 2023.  
<https://abc7.com/eyewitness-newsmakers-abc7-stormwater-flood-assessment-2023/13137392/>
- 6.

---

## Contracts, Grants and Gifts

1. Grant. "Pseudo-Spectral Numerical Solution of Omnidirectional Nonlinear Dispersive Water-Wave Models," University of California Irvine, \$3,000.00. September 1, 1999 - December 31, 1999. (PI)
2. Gift. Fluor Foundation. \$16,150. February 1, 2000.
3. Grant. Mitigation of Extreme Flooding Events by Optimal Control of Flood Plain Storage Using the Adjoint Sensitivity Method, U.C. Water Research Center, \$50,700.00. July 1, 1998 - June 30, 2000. (PI)
4. Grant. "Coastal Runoff Impact Study (CRIS), Phase I: Causes of Surfzone Pollution in Huntington Beach, California," National Water Research Institute, \$147,438.00. November 1, 1999 - October 30, 2000. (Co-PI; P.I.=S.B. Grant)
5. Grant. "Hydrodynamic Design in Coastal Wetland Restoration: Topography Optimization and Stability Assessment by Adjoint Sensitivity Method," U.C. Water Research Center, \$56,000.00. July 1, 2000 - June 30, 2002. (PI)



6. Grant. "Identification and Control of Non-Point Sources of Microbial Pollution in a Coastal Watershed," NSF/EPA/USDA Science and Technology to Achieve Results (STAR) Water and Watersheds Program, \$895,234.00. August 1, 2000 - January 30, 2005. (PI)
7. Grant. "Coastal Runoff Impact Study (CRIS), Phase II: Sources and Dynamics of Microbial Pollution in the Lower Santa Ana River Watershed," National Water Research Institute, \$510,890.00. September 1, 2000 - August 30, 2001. (Co-PI; P.I.=Stanley Grant)
8. Grant. "Coastal Water Quality: The Role of Wetlands in Mitigating the Effect of Urban and Rural Runoff," UC Office of the President, Coastal and Environmental Quality Initiative, \$611,146.00. June 1, 2002 - May 31, 2004. (Co-PI; P.I.=S.B. Grant)
9. Grant. "Network for Environmental Observation of the Coastal Ocean," UC Santa Cruz, \$34,316.00. July 1, 2003 - June 30, 2004. (PI)
10. Grant. "CAREER: Mitigation of Pollution Hazards in Ephemeral Streams and Estuaries--A Plan for Research and Education in Environmental Hydraulics," NSF, \$260,000.00. July 1, 2000 - June 30, 2005. (PI)
11. Contract. "Newport Bay Fecal Coliform Source Identification and Management Plan," State Water Resources Control Board and County of Orange, \$764,000.00. July 1, 2004 - January 31, 2006. (Co-PI; PI=S.B. Grant)
12. Grant. "Dynamics of Point and Non-Point Source Fecal Pollution from an Urban Watershed in Southern California," National Water Research Institute and United States Geologic Survey, \$459,045.00. September 1, 2003 - August 31, 2006. (Co-PI; PI=S.B. Grant)
13. Grant. "A System Approach to Flooding Disaster Planning and Response," Univ of Buffalo, \$75,000.00. October 1, 2006 - September 30, 2007. (PI)
14. Grant. "Development of an Expert Decision Support System for Flood Delineation and Risk Management," Government of United Kingdom, \$13,877.00. April 1, 2008 - August 31, 2008. (PI)
15. Grant. "High-Resolution Modeling of Flood Inundation," UC Center for Water Resources, \$60,000.00. July 1, 2007 - June 30, 2009. (P.I.)
16. Grant. "Using IT to Compress Perceived Time and Space in How People Think About Global Change: A Step Towards Behavioral Change," UC Irvine Environment Institute, \$60,000.00. July 1, 2009 - June 30, 2010. (Co-PI; PI=W. Tomlinson)
17. Grant. "Velocity Contour Weighting Method for Increased Accuracy of Upward Looking ADVN in Irrigation Channels," UC Water Resources Center (Prosser Trust), \$60,000.00. July 1, 2009 - June 30, 2011. (PI)

18. Grant. "Data Integration and Model Development to Mitigate Urban Flooding Hazards Linked to Sea Level Rise," NSF, \$290,000.00. August 1, 2008 - July 30, 2011. (PI)
19. Grant. "Graduate Research Supplement to Broaden Participation of Under-represented Groups, Data Integration and Model Development to Mitigate Urban Flooding Hazards Linked to Sea Level Rise," NSF, \$82,003.00. August 1, 2008 - July 30, 2011. (PI)
20. Grant. "Flood Prediction in an Urbanized Embayment: Accounting for Extreme High Tides, Waves, Flood Control Infrastructure and Higher Sea Levels," State of California, Department of Boating and Waterways, \$34,000.00. October 1, 2011 - September 30, 2012. (PI)
21. Grant. "Prediction and Mitigation of Beach Overwash and Resultant Urban Flooding in Coastal California," NSF, \$302,960.00. September 1, 2011 - August 30, 2014. (PI)
22. Grant. "Modeling Channel and Floodplain Hydrodynamics in Support of the SWOT Mission," NASA, \$230,269.00. January 1, 2013 - December 31, 2015. (PI)
23. Grant. "PIRE: Low Energy Options for Making Water from Wastewater," NSF, \$4,858,314.00. September 15, 2012 - September 15, 2017. (Co-PI; PI=S.B. Grant)
24. Contract. "Methodology to Link Storm Drain Discharges to Loads in Dominguez Channel Estuary and Greater Los Angeles and Long Beach Harbor," State of California, State Water Board, \$100,000.00. July 1, 2013 - March 31, 2015. (PI)
25. Grant. "Hazards SEES Type 2: Preventing Flood Hazards from Becoming Disasters through Two-way Communication of Parcel-level Flood Risk," NSF, \$2,819,380.00. September 15, 2013 - September 14, 2017. (PI)
26. Contract. "LSPC Model for Harbor TMDL," State of California, State Water Board, \$243,454.00. June 15, 2015 - June 14, 2017. (PI)
27. Cooperative Agreement. "Co-development of modeling tools to manage sediment for sustainable and resilient coastal lowland habitat in Southern California," NOAA, \$1,150,000.00. September 1, 2016 - August 30, 2020. (PI)
28. Contract. "Improving Waste Load Allocations using the WRAP model," State of California, State Water Board, \$20,000.00. March 22, 2018 - January 31, 2020. (PI)
29. Grant. "Product Market Fit of Flood Hazard Data in the Facilities Maintenance Industry," University of California (Applied Innovation), \$80,000.00. August 1, 2019 - January 31, 2020. (PI)

30. Grant. "CoPE EAGER: Modeling the Social Ecology of Coastal Flooding" National Science Foundation. \$299,872. September 1, 2019-August 30, 2021. (Co-PI, ~\$120k under my supervision).
31. Contract. "Beach Topography Survey Program - Doheny and San Clemente State Beach," State of California, California Department of Parks and Recreation, \$99,732.00. April 1, 2020 - March 31, 2022. (PI)
32. Contract. "Framework for monitoring marine debris extent and vegetation impacts," 4 Walls International Incorporated (EPA Funding), \$41,337.00. Jan 1, 2020 - June 30, 2021. (PI)
33. Grant. "Dynamics and Perceptions of Ultrahazardous Flooding across the Wildland Urban Interface," National Science Foundation. \$670,000. August 1, 2021-July 30, 2024. (PI).
34. Grant. "New observing strategies for beach and dune topography and implications for coastal flood risk," NASA. \$650,000. August 1, 2022-July 30, 2025. (Institutional PI, ~\$350K under my supervision).
35. Grant "SCC-IRG Track 2: Equitable-access flood modeling for timely and just adaptation in the near and long term, NSF, \$1,500,000. August 1, 2023-July 30, 2026. (Institutional PI, ~\$600K under my supervision).

NSF

---

## Consulting Activity

Beach Water Quality Study, Orange County Sanitation District, 2000-2002.

Harbor Circulation and Water Quality Study, City of Avalon, 2001-2002.

TMDL Review, State Water Quality Control Board, 2002.

Channel Islands Harbor Circulation and Water Quality Study, Everest International Consultants, 2002-2003.

Expert Witness, Orange County District Attorney, 2003-2006

Sewer Exfiltration Study, Orange County Sanitation District, 2003-2005.

Flood Vulnerability Study, City of Newport Beach, 2002-2004.

Water Quality Modeling, Port of Los Angeles, 2004-2006.

Saltmarsh Restoration Expert Panel, Anchor QEA, 2019.

Independent Design and Safety Review Panel, Syphon Reservoir Improvement Project, Irvine Ranch Water District, 2021-Present.

Expert Witness, Joens & Joens, Irvine, CA 2022-2023.

**University  
Service**

---

**Member**  
University of California Marine Council  
2001-2005

**Board of Advisors**  
UC Water Resources Center  
2002-2006

---

**Campus  
Service**

**Faculty Advisor**  
Undecided/Undeclared Student Program  
1998-1999

**Member**  
Student Recreation Center Advisory Board  
1999

**Member**  
Ad Hoc Committee on the Council of Research, Computing and Library  
Resources  
2018-2020

**Member**  
Environment Institute Faculty Search Committee  
2008-2009

**Member**  
Graduate Council  
2008-2010

**Member**  
Task Force for New Graduate Programs  
2010

**Chair**  
Ad-Hoc Personnel Committee for Vice-Provost of Academic Personnel  
2010

**Member**  
Advisor Committee for Water-UCI  
2014-PRESENT

**Member**  
5-Year Review Committee for Dean Gregory Washington  
2015-2016

**Member**  
Naturescape Committee  
2019-PRESENT

**Member**  
Samueli School Dean Search Committee  
2020-PRESENT

**Member**  
Board of Directors, San Joaquin Marsh Wildlife Sanctuary  
2022-PRESENT

**School  
Service**

---

**Secretary**

School of Engineering Executive Committee  
2002-2003

**Director**

Graduate Concentration in Environmental Engineering  
2002-2006

**Chair**

Undergraduate Student Affairs Committee  
2005-2006

**Member**

Undergraduate Student Affairs Committee (Environmental Engineering  
Representative)  
1999-2008

**Member**

ABET Committee (Environmental Engineering Representative)  
2004-2008

**Member**

Strategic Planning Committee  
2008-2009

**Member**

Strategic Planning Committee  
2016-2017

**Member**

Academic Personnel and Advancement Committee (APAC)  
2018-Present

**Associate Dean for Undergraduate Student Affairs (Interim)**

Samueli School of Engineering  
2020-2021

---

**Department  
Service**

**Member**

Graduate Affairs Committee  
1997-1999; 2008-2010

**Faculty Advisor**

Student Chapter of ASCE  
1997-2002

**Faculty Advisor**

Environmental Engineering Undergraduate Degree  
1999-2006

**Member**

Undergraduate Affairs Committee  
1999-2010

**Member**

Department Chair Search Committee  
2000-2001

**Member**

Department Manager Search Committee

2002-2003

**Chair**

Faculty Search Committee (Environmental)

2003-2005

**Member**

Faculty Search Committee (Structures)

2004-2006

**ABET Lead**

Environmental Engineering Program

2004-2008

**Chair**

Faculty Search Committee (Hydrometeorology)

2008-2009

**Faculty Advisor**

Chi Epsilon Honor Society

2010-2015

**Chair**

Honors Committee

2018-PRESENT

**Chair**

Faculty Search Committee (Environmental)

2019-2020

**Chair**

Environmental Engineering Degree Re-Boot Committee

2021-2023

**Chair**

Faculty Search Committee (Infrastructure Equity)

2022-2023

**Chair and Member**

Ad-Hoc Personnel Committees

Various Dates (several cases per year)

---