BIOGRAPHICAL SKETCH

Y. Peter Sheng, Professor Emeritus and Adjunct Research Professor in Coastal and Oceanographic Engineering, Civil and Coastal Engineering Department, Engineering School of Sustainable Infrastructure and Environment, University of Florida, Gainesville, Florida 32611-6580, pete@coastal.ufl.edu, Tel: (352)-294-7764. Cell: (352)-262-8692. Active in research but not teaching.

Current Research Interests: Climate Change Impact on Coastal Urban and Natural Ecosystems; Assessing the Role of Coastal Wetlands in Reducing Flood, Wave, and Infrastructure Damage due to SLR and storms; Ecosystem Valuation; Harmful Algal Bloom; Oil Spill; Solving Complex Coastal Problems; Risk Assessment; Flood Mapping for Future Climate.

(a)Professional Preparation

1975	Ph.D.	Fluid and Thermal Sciences	Case Western Reserve University
1972	M.S.	Fluid and Thermal Sciences	Case Western Reserve University
1968	B.S.	Mechanical Engineering	National Taiwan University

(b)Appointments

2014-Present	Adjunct Research Professor	University of Florida
2013-Present	Professor Emeritus	University of Florida
2000-2013	Professor, Civil & Coastal Engineering	University of Florida
2004-2007	UF Research Foundation Professor	University of Florida
2003-2003	Visiting Fellow, Atmospheric & Ocean Sciences	Princeton University
1988-2000	Professor, Coastal & Oceanographic Eng.	University of Florida
1992-1993	Gledden Fellow	Univ. Western Australia
1986-1988	Asso. Professor, Coastal & Oceanographic Eng.	University of Florida
1984-1986	Sr. Consultant & Head, Coastal Oceanography	Aero. Res. Associates of Princeton
1978-1984	Consultant, Environmental Fluid Dynamics	Aero. Res. Associates of Princeton
1976-1978	Sr. Research Associate, Earth Sciences	Case Western Reserve Univ.
1975-1976	Research Associate, Earth Sciences	Case Western Reserve Univ.

(c) Products

1."Role of Wetlands in Reducing Structural Loss is Highly Dependent on Characteristics of Storms and Local Wetland and Structure Conditions", Y.P. Sheng, A. Rivera-Nieves, R. Zou, and V. Paramygin, 2021. Nature Scientific Reports,11:5237 | https://doi.org/10.1038/s41598-021-84701-z. https://rdcu.be/cgcuk/

2."Invasive Phragmites Provides Superior Wave and Surge Damage Protection Relative to Native Plants During Storms", Y.P. Sheng, A. Rivera-Nieves, R., Zou, V. Paramygin, C. Angelini, C. S. Sharp, 2021, Environmental Research Letters. 16, 054008. doi: 10.1088/1748-9326/abf288.

3."A Rapid Forecasting and Mapping System of Storm Surge and Coastal Flooding", K. Yang, V. Paramygin, Y.P. Sheng, 2020. Weather and Forecasting, Vol. 35, Issue 4, doi:10.1175/WAF-D-19-0150.1

4."*An objective and efficient method for estimating probabilistic coastal inundation hazards*", K. Yang, V. Paramygin, Y.P. Sheng, Natural Hazards, 2019, 99:1105–1130.

5."Assessing the role of mangrove forest in reducing coastal inundation during major hurricanes", Y.P. Sheng, and R. Zou*, 2017. Hydrobiologia, 803, 1, 87-103.*

6. *"Simulating Complex Storm Surge Dynamics: Three- Dimensionality, Vegetation Effect, and Onshore Sediment Transport"*, A. Lapetina, Y.P. Sheng, 2015, Journal Geophysical Research-Oceans,120.

7. *"3D Modeling of the Effects of Coastal Vegetation on Storm Surge and Inundation",* A. Lapetina, Y.P. Sheng, 2014. Estuaries and Coasts, 37, pp. 1028-1040.

8. *"Evaluation of coastal inundation hazard for present and future climates,"* A.J. Condon, Y.P. Sheng, and V.A. Paramygin, V. A. Monthly Weather Review, Vol. 141, 2013.

9."*The reduction of storm surge by vegetation canopies: Three-dimensional simulations,"* Sheng, Y.P., A, Lapetina, and G. Ma, Geophysical Research Letters, 39, L20602, doi: 10.1029/2012GL053577. 2012.

10."*Optimal storm generation for evaluation of storm surge inundation threat*," Condon, A. and Y.P. Sheng, Ocean Engineering, doi:10.1016/j.oceaneng.2012.01.021. 2012.
11. "*Evaluation of coastal inundation hazard for present and future climates,* Condon, A. and Y.P. Sheng, Natural Hazards, doi:10.1007/s11069-011-9996-0. 2012.

(d)Synergistic Activities

1.Principal Investigator, National Estuarine Research Reserve System Science Collaborative project, funded by the National Oceanic and Atmospheric Administration and managed by the University of Michigan Water Center (NAI4NOS4190145). Project title - Assessing and enhancing the value of Piermont Marsh in protecting human communities from storm surge and flooding amid a changing climate Amount: $677,307. Period: November 2016 – July 2020. Predicted the flood risk for the Village of Piermont, New York in current and future climate; Simulated the flood, wave, and property damage during Superstorm Sandy & 1% flood/wave event; Estimated the flood, wave, and property damage during 1% flood/wave event in 2020, 2050, 2100 considering SLR and marsh management scenarios; Produced a user-friendly Piermont Coastal Geo Tool to enable local government and marsh managers to develop resiliency and marsh restoration planning. Convinced the stakeholders and marsh managers of the value of Phragmites dominant Piermont marsh for flood protection.
https://www.nerrssciencecollaborative.org/project/Sheng16

2.Principal Investigator, NOAA NCCOS Restore Science Project: "Adaptation of Coastal Urban and Natural Ecosystems", 2017-2021. This project is funded by the Restore Act Science Program to develop and apply state-of-the-art tools for assessing the coastal inundation risk in Southwest Florida and economic impact of wetland restoration plans on reducing the economic loss to urban and natural ecosystems due to sea level rise and more intense storms in the 21st century. This project has developed numerous products to inform the communities and governments of the future flood vulnerability of SW Florida and how NNBF can help. Amount: $995,000. Research Team includes Florida Gulf Coast University, USGS, and University of Miami. Stakeholders include local, state, and federal entities.
https://ace.coastal.ufl.edu/ACUNE3.0.

3.Principal Investigator. NOAA NCCOS ESLR Project: "Assessing the Role of Natural and Nature-Based Features in Enhancing Coastal Resilience of Urban and Natural Ecosystems in the 21st Century. (ACUNE+)." This project is coupling a surge-wave model with a dynamic process-based mangrove evolution model and a urban stormwater model to improve the prediction of future flood vulnerability of Collier County residential structures, urban infrastructures, and mangrove's role in reducing future flood damage in a changing climate with sea level rise and intensifying storms. Amount: $750,000. 2019-2022.

3.Principal Investigator, Subaward of NOAA Restore Act Science Program project to Pinellas County to develop future coastal flood risk and vulnerability plans. 2018-2021. Developed coastal flood maps for current and future climates for Pinellas County, Florida, including Clearwater, St. Petersburg, etc. The flood maps are being adopted by Pinellas County for regulation.

4.Principal Investigator, NOAA Climate Program Office Project: "Incorporating Impact of Climate Change and Sea Level Rise on Coastal Inundation." 2011-2015. Amount: $1.5M.This project brought together climate scientists studying global and regional scale climate change, coastal scientists studying hurricane driven storm surge and coastal inundation, and coastal stakeholders who need scientific information and guidance on coastal planning. Established a community involving scientists and federal, state, and coastal stakeholders. Significantly raised the South Florida communities' awareness on coastal flood risk.

5.Principal Investigator, IOOS Project: "A Regional Storm Surge and Inundation Model Testbed for the SECOORA Region." 2008-2013. This project brings together four leading academic modelers of storm surge and coastal inundation, and modelers of National Hurricane Center to compare their models for coastal inundation and model products (maximum inundation maps in hurricanes, base flood elevation, and surge atlas), and shared with federal, state, and coastal stakeholders. Organized two sessions on *Coastal Inundation for Current and Future Climates* at the AGU Fall Meeting, December 2012.

6.Member, National Academies Committee on New Orleans Regional Hurricane Protection System, 2006-2009 and Member, National Academies Committee on FEMA Flood Mapping, 2007-2009.
The first service oversaw the work of the post-Katrina study by Interagency Performance Evaluation Taskforce, while the second service recommended ways for FEMA to improve coastal flood mapping and led the writing of the chapter on *Coastal Flooding and Mapping* in the book entitled "*Mapping The Zone – Improving Flood Map Accuracy*," Committee on FEMA Flood Maps, Water Science and Technology Board, National Research Council of the National Academies, The National Academies Press, 2009.
https://www.nap.edu/catalog/12573/mapping-the-zone-improving-flood-map-accuracy

7.Board of Directors (2008-2014) and Science Co-Chair (2009-2011), South Eastern Coastal Ocean Observing Regional Association (SECOORA). This service provided leadership on coastal ocean observing and prediction activities throughout the Southeast US funded by IOOS.

8.Director, Institute for Sustainable Coastal Environment and Infrastructure, University of Florida, 2009-2013. Established this institute to promote campus wide collaboration on coastal sustainability. Organizing the upcoming Coastal Hazards Summit 2013 (February 13-14) to coalesce federal, state, and coastal stakeholders with researchers and industries to enhance communication and integration of coastal hazards related issues and to develop ways towards coastal resiliency and sustainability.

9.Principal Investigator. "An Integrated Model for Developing Pollutant Load Reduction Goals by SJRWMD". Sponsored by the St. Johns River Water Management District. Developed and verified an integrated modeling system including hydrodynamic, wave, sediment transport, nutrients, water quality, light attenuation, and seagrass biomass models. Amount: $1.25M. 1998-2002.

10.Principal Investigator. "Modeling the flow and salinity in Caloosahatchee River and Estero Bay". Funded by South Florida Water Management District. Developed a hydrodynamic-salinity-particle tracking model of the Caloosahatchee River, San Carlos Bay, and Estero Bay systems. 2002-2004.

11. Principal Investigator. **"Modeling the flow, salinity and water quality in Charlotte Harbor Estuarine System"**. Partially funded by the SWFWMD. Developed an integrated flow-wave-salinity-water quality model of the entire Charlotte Harbor Estuarine System. 2000-2003.

12. Principal Investigator. **"Lake Okeechobee Phosphorus Dynamics Study".** Funded by SFWMD to develop an integrated flow, wave, sediment transport, and water quality model of the Lake Okeechobee System. 1988-1993. Amount: $750,000.

(e) Publications – More than 100 publications including refereed journal articles, book chapters, and conference proceedings. **Check out my publications on Research Gate:**
https://www.researchgate.net/profile/Y-Peter-Sheng

(f) Students – Chair of more than 20 Ph.D. student committees.