James H. VanZwieten Jr.
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Throughout this CV activities directly related to undergraduate research and training are underlined and undergraduate authors are indicated with a "".

Education

Ph.D.	Ocean Engineering, December, 2007. Florida Atlantic University, Dania Beach, Florida. GPA 3.92/4.0 Dissertation: *Modeling and dynamic positioning of under-actuated boats*
M.S.	Ocean Engineering, May, 2003. Florida Atlantic University, Dania Beach, Florida. GPA 3.44/4.0 Thesis: *Modeling and control of the C-Plane ocean current turbine*
B.S.	Ocean Engineering, April, 2001. Florida Atlantic University, Boca Raton, Florida. GPA 3.63/4.0, Cum Laude

Research Interests

Autonomous System Development, Control System Development, Electromechanical Devices, Fluid Structure Interaction, Marine Sensor System Development, Numerical Simulation, Ocean Current Energy, Ocean Thermal Energy Conversion, Physical Oceanographic Measurements including Currents and Waves, Sea Water Based Air Conditioning, Turbulence.

Professional Experience

Aug. 2020-Present	**Associate Research Professor**, Department of Civil, Environmental, and Geomatics Engineering, Florida Atlantic University, Boca Raton, FL
Jan. 2019-Aug. 2020	**Assistant Research Professor**, Department of Civil, Environmental, and Geomatics Engineering, Florida Atlantic University, Boca Raton, FL
July 2010-Jan. 2019	**Assistant Research Professor**, Southeast National Marine Renewable Energy Center, Florida Atlantic University, Boca Raton, FL
Dec. 2007-July 2010	**Visiting Faculty / Ocean Engineer**, Center for Ocean Energy Technology, Florida Atlantic University, Dania Beach, FL
May 2007- Dec. 2007	**Visiting Faculty / Ocean Engineer**, Department of Ocean Engineering, Florida Atlantic University, Dania Beach, FL
Sept. 2003 - May 2007	**Graduate Teaching and Research Assistant**, Department of Ocean Engineering, Florida Atlantic University, Dania Beach, FL
Sept. 2001- May 2003	**Graduate Research Assistant**, Department of Ocean Engineering, Florida Atlantic University, Dania Beach, FL

Educational Experience

Teaching

Instructed the following courses at FAU within the Ocean and Mechanical Engineering; Civil, Environmental, and Geomatics Engineering; and Computer & Electrical Engineering & Computer Science Departments:

1. **Open Channel Hydraulics**, Spring 2021 (7 graduate students)
2. **Applied Hydraulics**, Spring 2021 (50 students)
3. **Energy Engineering/Fundamentals of Energy Engineering**, Spring 2020 (41 undergraduate and 6 graduate students), Spring 2021 (17 undergraduate and 6 graduate students)
4. **Dynamic Systems**, Fall 2020 (52 students)
5. **Ocean Engineering Lab**, Fall 2019 (19 students), Spring 2020 (17 students)
6. **Marine Renewable Energy**, Fall 2019 (12 graduate students)
7. **Electrical Power Systems**, Spring 2019 (27 students)
8. **Engineering Fluid Mechanics**, Spring 2019 (46 students)
9. **Wind Turbine Systems**, Spring 2017 (16 undergraduate and 20 graduate students)
10. **Introduction to Ocean Engineering and Underwater Vehicles** - Engineering Scholars Program, Summer 2011 (24 students), Summer 2013 (26 students), Summer 2015 (28 students) & Summer 2016 (24 students)
11. **Thermodynamics**, Spring 2013 (36 students) & Fall 2013 (45 students)
12. **Vibrations**, Spring 2013 (27 students)
13. **Dynamics**, Fall 2011 (23 students)
14. **Modeling and Control of Marine Vessels**, Fall 2005 (3 graduate students)
15. **Structures II**, Summer 2004 (15 students) & Spring 2005 (5 students)

Advising

- Undergraduate research advisor for 36 past and 1 current students
- M.S. thesis (co-)advisor for nine graduated and one current student
- Ph.D. dissertation (co-)advisor for one graduated student two current students
- Advised one study abroad Ph.D. student (Sponsored by NSF-China)

Awards and Appointments

- Harbor Branch Affiliate Faculty: September 2017 - Present
- Associate Graduate Faculty: June 2011 – Present
- Received the Journal of Ships and Offshore Structure's award for the best paper of 2008
- Awarded 2nd place in the Student Poster Competition at the 2002 MTS/IEEE Oceans Conference
- Recognized by General Motors and the United Auto Workers Union's "Team behind the Team" Program as an Olympic hopeful in beach volleyball prior to the 2000 Olympics (Awarded a free car)

Sponsored Research (Funded) (16 awarded grants were related to undergraduate research and training)

1. **"Collaborative Research: CyberTraining: Pilot: Interdisciplinary Training of Data-Centric Security and Resilience of Cyber-Physical Energy Infrastructures"** NSF Training-based Workforce Development for Advanced Cyberinfrastructure (CyberTraining) ($160,000, 9/2020-8/2022), **Co-PI**.

2. **"REU Site: Marine Renewable Energy"** NSF Research Experience for Undergrads (REU) Sites and Supplements ($390,000, 3/2020-2/2023), **PI**.

3. **"2019 WPTO Centers Infrastructure Enhancements**" US Department of Energy ($1,000,000, 3/2020-9/2021), **Co-PI**.

4. **"Loop Current System SSH and subsurface current prediction with a transfer learning approach**" Gulf Research Program, Understanding Gulf Ocean Systems 2 ($346,179, 1/2019-5/2021), **Sr. Person**.

5. "**REU Supplement to NSF Grant Entitled: Collaborative Research: Design and Control of Networked Offshore Hydrokinetic Power-Plants with Energy Storage**" NSF Energy, Power, Control and Networks (EPCN) ($16,000, 4/2019-4/2020), **PI**.

6. "**Analysis of the Potential for Tidal Current Based Electricity Production in the Florida Keys**" FAU's Office of Undergraduate Research and Inquiry, Summer Undergraduate Research Fellowship ($4,000, summer 2019), **PI**.

7. "**VRS to REU Site: Removing Barriers to Ocean Current Based Electricity Production through Undergraduate Research**" NSF Research Experience for Undergrads (REU) Sites and Supplements ($20,000, 1/2019-1/2020), **PI**.

8. "**RET Supplement to REU Site: Removing Barriers to Ocean Current Based Electricity Production through Undergraduate Research**" NSF Research Experience for Teachers (RET) Sites and Supplements ($20,000, 1/2019-1/2020), **PI**.

9. "**Collaborative Research: Design and Control of Networked Offshore Hydrokinetic Power-Plants with Energy Storage**" NSF Energy, Power, Control and Networks (EPCN) ($480,000 [FAU: $103,085], 07/01/2018-06/30/2021), FAU **PI**.

10. "**Measurement Based Characterization of Open Ocean Turbulence for Ocean Current Energy Applications**" FAU's Office of Undergraduate Research and Inquiry, Summer Undergraduate Research Fellowship ($4,000, summer 2018), **PI**.

11. "**Veteran Research Supplement to REU Site: Removing Barriers to Ocean Current Based Electricity Production through Undergraduate Research**" NSF Research Experience for Undergrads (REU) Sites and Supplements ($20,000, 1/2018-1/2019), **PI**.

12. "**RET Supplement to REU Site: Removing Barriers to Ocean Current Based Electricity Production through Undergraduate Research**" NSF Research Experience for Teachers (RET) Sites and Supplements ($20,000, 12/2017-12/2018), **PI**.

13. "**Optimized Integration of Hydrokinetic Energy for Remote, Networked, and Resilient Microgrids**" Walter and Lalita Janke Sustainable Energy Research Initiative ($50,000, 11/2017-05/2019), **Co-PI**.

14. "**Demonstrating Technology Enhancements to Achieve Economic Competitiveness of Gulf Stream Electricity Production**" Florida Department of Agriculture and Consumer Services, Renewable Energy and Energy Efficient Technologies (REET) Grant Program ($400,000, 09/2017-09/2018), **Sr. Personnel**.

15. "**Open Ocean Turbulence Characterization for Ocean Current Energy Applications**" FAU's Office of Undergraduate Research and Inquiry, Summer Undergraduate Research Fellowship ($4,000, summer 2017), **PI**.

16. "**REU Site: Removing Barriers to Ocean Current Based Electricity Production through Undergraduate Research**" NSF Research Experience for Undergrads (REU) Sites and Supplements ($360,000, 3/2017-2/2020), **PI**.

17. "**Development of an Associate in Science Engineering Technology – Alternative Energy Technician program at Florida Keys Community College**" NSF Advanced Technological Education (ATE) (FAU Budget $75,000, 2016-2019), FAU **PI**, sub-contract to Florida Keys Community College.

18. "**REU Supplement to NSF Grant Entitled: Collaborative Research: Optimized Harvesting of Hydrokinetic Power by Ocean Current Turbine Farms Using Integrated Control**" NSF Energy, Power, Control and Networks (EPCN) ($8,000, 7/2016-9/2017), **PI**.

19. "**Numerical Simulation of a Moored Ocean Current Turbine using National Renewable Energy Laboratory Tools**" FAU's Office of Undergraduate Research and Inquiry – Summer Undergraduate Research Fellowship ($3,900, summer 2016), **PI**.

20. "**Numerical simulation of two ocean current turbine design types**" FAU's Office of Undergraduate Research and Inquiry - Undergraduate Research Grant ($1,000, 2016), **PI**.

21. "**Analysis of Ocean Current Turbine Wakes using Computational Fluid Dynamics**" FAU's Office of Undergraduate Research and Inquiry – Summer Undergraduate Research Fellowship ($3,900, summer 2015), **PI**.

22. "**Unobtrusive Multi-static Serial LiDAR Imager (UMSLI) for Wide-area Surveillance and Identification of Marine Life at MHK Installation**" Department Of Energy, Wind and Water Power Program ($500,000, 9/2014-8/2016), **Co-Author.**

23. "**Assessing Florida's Sea Water based Air Conditioning potential**" FAU's Office of Undergraduate Research and Inquiry - Undergraduate Research Grant ($600, 2014), **PI.**

24. "**Collaborative Research: Optimized Harvesting of Hydrokinetic Power by Ocean Current Turbine Farm Using Integrated Control**" NSF Energy Power and Adaptive Systems (EPAS) (FAU budget $155,135, 10/2013-9/2017), FAU **PI**, collaboration with Virginia Polytechnic Institute and the University of New Orleans.

25. "**Mathematical Modeling and Aero-Hydro-Elastic Response of Hybrid Floating Platform for Combined Wind and Wave/Current Energy Conversion**" FAU Division of Research - Faculty Research Seed Grant Program ($20,000, summer 2012), **Co-PI.**

26. "**Lockheed Martin – Ocean Trade Study**" Lockheed Martin Corporation ($126,500, 2008-12/2012), **PI**, transferred grant.

Publications (papers with undergraduate authors are underlined and undergraduate authors are indicated with an *. This includes 5 Journal papers and 7 conference papers)

Dissertation

J. VanZwieten (2007) "Modeling and dynamic positioning of under actuated boats" Ph.D. Dissertation, Florida Atlantic University

Thesis

J. VanZwieten (2003) "Modeling and control of the C-Plane ocean current turbine" MS Thesis, Florida Atlantic University

Journal Papers

1. B. Freeman, Y. Tang, Y. Huang, **J. VanZwieten** (In-Press) "Rotor Blade Imbalance Fault Detection for Variable-Speed Marine Current Turbines via Generator Power Signal Analysis" Accepted to Ocean Engineering

2. Y. Huang, Y. Tang, **J. VanZwieten**, J. Liu (Early Access) "Prognostics with Variational Autoencoder by Generative Adversarial Learning" IEEE Transactions on Industrial Electronics, DOI: 10.1109/TIE.2021.3053882

3. T.D. Ngo, C. Sultan, **J.H. VanZwieten**, N.I. Xiros (2020) "Constrained Control of Moored Ocean Current Turbines with Cyclic Blade Pitch Variations" IEEE Journal of Oceanic Engineering, Early access: 10.1109/JOE.2020.2985599

4. Y. Tang, Y. Huang, E. Lindbeck*, S. Lizza*, **J. VanZwieten**, N. Tom, W. Yao (2020) "WEC Fault Modeling and Condition Monitoring - A Graph Theoretic Approach" IET Electric Power Applications, vol. 14 (5), 781-788, DOI: 10.1049/iet-epa.2019.0763

5. Y. Huang, Y. Tang, **J. VanZwieten**, J. Liu (2020) "Reliable Machine Prognostic Health Management in the Presence of Missing Data" Concurrency and Computation Practice and Experience, DOI: 10.1002/cpe.5762

6. M. Jiang, C. Pan, L. Barbero, J. Reed, J. Salisbury, **J.H VanZwieten**, R. Wanninkhof (2020) "Variability of bottom carbonate chemistry over the deep coral reefs in the Florida Straits and the impacts of meso-scale processes" Ocean Modeling, vol 147, 101555, DOI: 10.1016/j.ocemod.2019.101555

7. M. Edmunds, A.J. Williams, I. Masters, A. Banerjee, **J. VanZwieten** (2020) "A Spatially Nonlinear Generalised Actuator Disk Model for the Simulation of Horizontal Axis Wind and Tidal Turbines" Energy, vol 194 (1), 116803, DOI: 10.1016/j.energy.2019.116803

8. M. Badshah, S. Badshah, **J. VanZwieten**, S. Jan, M. Amir, S.A. Malik (2019) "Two Way Coupled FSI modelling of the effect of velocity profile on loads variation in a large scale two bladed horizontal axis tidal turbine" Energies, 2019, 12, 2217, DOI: 10.3390/en12112217

9. M. Badshah, **J. VanZwieten**, S. Badshah, S. Jan (2019) "A CFD study of blockage ratio and boundary proximity effects on the performance of a tidal turbine" IET Renewable Power Generation, vol 13 (5), 744-749, DOI: 10.1049/iet-rpg.2018.5134.

10. P. Pyakurel, **J.H. VanZwieten**, W. Tian, P. Ananthakrishnan (2017) "Analytic characterization of the wake behind in-stream hydrokinetic turbines" Marine Technology Society Journal 51(6):58-71

11. P. Pyakurel, **J.H. VanZwieten**, C. Sultan, M.R. Dhanak, N.I Xiros (2017) "Numerical simulation and dynamical response of a moored hydrokinetic turbine operating in the wake of an upstream turbine for control design" Renewable Energy, 114(Part B):1134-1145

12. **J.H. VanZwieten**, L.T. Rauchenstein, L. Lee* (2017) "An assessment of Florida's Ocean Thermal Energy Conversion (OTEC) resource" Renewable and Sustainable Energy Reviews, 75:683-691

13. P. Pyakurel, W. Tian, **J.H. VanZwieten**, M. Dhanak (2017) "Characterization of the mean flow field in the far wake region behind ocean current turbines" Journal of Ocean Engineering and Marine Energy, 3(2):113-123

14. L. Lee*, **J.H. VanZwieten** (2017) "Adaptive individual blade pitch control of an ocean current turbine for load reduction" FAU Undergraduate Research Journal, 5(1):51-62

15. P. Pyakurel, **J.H. VanZwieten**, M. Dhanak, N. Xiros (2017) "Numerical modeling of turbulence and its effect on ocean current turbines" International Journal of Marine Energy, 17:84-97

16. V. Tzelepis, **J.H. VanZwieten Jr.**, N.I. Xiros, C. Sultan (2017) "System modeling and simulation of in-stream hydrokinetic turbines for power management and control" ASME Journal of Dynamic Systems, Measurement and Control, 139(5): 051005-1:15

17. W. Tian, **J.H. VanZwieten**, P. Pyakurel, Y. Li (2016) "Influences of yaw angle and turbulence intensity on the performance of a 20 kW in-stream hydrokinetic turbine" Energy, 111:104-116

18. **J.H. VanZwieten**, P. Pyakurel, T. Ngo, C. Sultan, N.I. Xiros (2016) "An assessment of using variable blade pitch for moored ocean current turbine flight control" International Journal of Marine Energy, 13:16-26

19. M.C.P.M. Machado*, **J.H. VanZwieten**, I. Pinos* (2016) "A measurement based analysis of the hydrokinetic energy in the Gulf Stream" Journal of Ocean and Wind Energy, 3(1):25-30

20. W. Tian, B. Song, **J.H. VanZwieten**, P. Pyakurel, Y. Li (2016) "Numerical simulations of a horizontal axis water turbine designed for underwater mooring platforms" International Journal of Naval Architecture and Ocean Engineering, 8(1):73-82

21. W. Tian, B. Song, **J. VanZwieten**, P. Pyakurel (2015) "CFD prediction of a modified Savonius wind turbine with novel blade shapes" Energies, 8(8):7915-7929

22. **J. VanZwieten**, W. McAnally, J. Ahmad, T. Davis, J. Martin, M. Bevelhimer, A. Cribbs, R. Lippert, T. Hudon. (2015) "In-stream hydrokinetic power – a review and appraisal" ASCE Journal of Energy Engineering, 141(3):1-16

23. **J.H. VanZwieten**, M.G. Seibert, K. von Ellenrieder (2014) "Anchor selection study for ocean current turbines" Journal of Marine Engineering and Technology, 13(1):59-73

24. D.N. Porak*, **J.H. VanZwieten Jr**., B. Wiles* (2013) "An analysis of Florida's sea water cooling resource" Marine Technology Society Journal, 47(4):226-239

25. **J.H. VanZwieten**, N. Vanrietvelde, B. Hacker (2013) "Numerical simulation of an experimental ocean current turbine" IEEE Oceanic Engineering, 38(1):131-143

26. A.E.S. Duerr, M.R. Dhanak, **J.H. Van Zwieten** (2012) "Utilizing the Hybrid Coordinate Ocean Model data for assessment of Florida Current's hydrokinetic renewable energy resource" Marine Technology Society Journal, 46(5):24-33

27. T.S. VanZwieten, **J.H. VanZwieten**, M.J. Balas, F.R. Driscoll (2010) "Development of an adaptive disturbance rejection system for the Rapidly Deployable Stable Platform - Part 2: Controller design and closed loop response" Ocean Engineering, 37(14-15):1367-1379

28. **J.H. VanZwieten**, F.R. Driscoll, T.S. VanZwieten (2010) "Development of an adaptive disturbance rejection system for the Rapidly Deployable Stable Platform - Part1: Mathematical modeling and open loop response" Ocean Engineering, 37(8-9):833-846

29. **J.H. VanZwieten**, T.S. VanZwieten, M.J. Balas, F.R. Driscoll (2010) "Mitigation of vortex-induced disturbances for the Rapidly Deployable Stable Platform" Journal of Ships and Offshore Structures, 5(1):13-24

30. **J.H. VanZwieten**, F.R. Driscoll (2008) "A comprehensive general simulation of twin screw displacement hull vessels with validation" Journal of Mathematical and Computer Modeling of Dynamical Systems, 14(4):269-301

31. **J.H. VanZwieten**, F.R. Driscoll, G.M. Alsenas (2008) "Response characteristics and maneuverability of a small twin screw displacement hull vessel in seas" Journal of Ships and Offshore Structures, 3(1):13-40 (SaOS best paper of 2008)

32. **J. VanZwieten**, F.R. Driscoll, A. Leonessa, G. Deane (2006) "Design of a prototype ocean current turbine - Part II: Flight control system" Ocean Engineering, 33:1522-1551

33. **J. VanZwieten**, F.R. Driscoll, A. Leonessa, G. Deane (2006) "Design of a prototype ocean current turbine - Part I: Mathematical modeling and dynamics simulation" Ocean Engineering, 33:1485-1521

Conference Papers (papers reviewed)

1. Y. Tang, Y. Zhang, A. Hasankhani, **J. VanZwieten** "Adaptive Super-Twisting Sliding Mode Control for Ocean Current Turbine-Driven Permanent Magnet Synchronous Generator" In proceedings of the American Control Conference, Denver, CO, July 1-3, 2020

2. Y. Huang, Y. Tang, **J. VanZwieten**, G. Jiang, T. Ding "Remaining Useful Life Estimation of Hydrokinetic Turbine Blades Using Power Signal" In proceedings of the 2019 IEEE Power & Energy Society General Meeting (PESGM), August 4-9, Atlanta, GA

3. B. Freeman, Y. Tang, **J. VanZwieten** "Marine Hydrokinetic Turbine Blade Fault Signature Analysis using Continuous Wavelet Transform" In proceedings of the 2019 IEEE Power & Energy Society General Meeting (PESGM), August 4-9, Atlanta, GA

4. Y. Tang, **J. VanZwieten**, B. Dunlap, D. Wilson, C. Sultan, N. Xiros "In-Stream Hydrokinetic Turbine Fault Detection and Fault Tolerant Control - A Benchmark Model" In proceedings of the American Control Conference, July 10-12, 2019, Philadelphia, PA

5. Y. Huang, Y. Tang, **J. VanZwieten**, J. Liu, X. Xiao "An Adversarial Learning Approach for Machine Prognostic Health Management" In proceedings of the 2019 International Conference on High Performance Big Data and Intelligent Systems (HOBD&IS), May 9-11, 2019, Shenzhen, China

6. D. Wilson, S. Passmore*, Y. Tang, **J. VanZwieten** (2018) "Bidirectional Long Short-Term Memory Networks for Rapid Fault Detection in Marine Hydrokinetic Turbines" in Proceedings of the 17th IEEE International Conference on Machine Learning and Application, December 17-20, Orlando, Florida, USA

7. Y. Shang, N. I. Xiros, **J.H. VanZwieten**, C. Sultan (2017) "A Data Model for Turbulence Analysis Downstream of an Ocean Current Turbine Rotor for Hydrokinetic Power Generation" Proceedings of the ASME 2017 Dynamic Systems and Control Conference, October 11-13, Tysons Corner, Virginia, no. DSCC2017-5371

8. T.D. Ngo, C. Sultan, **J.H. VanZwieten**, N.I. Xiros (2017) "Model Predictive Control for Moored Ocean Current Turbines" Proceedings of the American Control Conference, May 24-26, Seattle, WA

9. I Masters, A.J. Williams, M. Edmunda, P. Pyakurel, **J.H. VanZwieten** (2017) "The effects of turbulence intensity on the downstream performance of horizontal axis tidal stream turbines" Proceedings of the VII International Conference on Computational Methods in Marine Engineering (MARINE 2017), May 15-17, Nates, France

10. T.D. Ngo, C. Sultan, **J.H. VanZwieten**, N.I. Xiros (2016) "Active Flight Control for Moored Ocean Current Turbines" Proceedings of the American Control Conference, July 6-8, Boston, MA

11. G. Tsakridis, N.I. Xiros, C. Sultan, M. Scharringhausen, **J. VanZwieten** (2016) "An automated planning system for efficient ocean current energy harvesting by hydrokinetic turbines" Proceedings of the International Society of Offshore and Polar Engineers Conference, June 26-July 2, Rhodes, Greece

12. N. Xiros, **J. VanZwieten**, C. Sultan, T. Tzelepis, L. Birk (2016) "An automated planning system for efficient ocean current energy harvesting by hydrokinetic turbines" Proceedings of the International Society of Offshore and Polar Engineers Conference, June 26-July 2, Rhodes, Greece

13. N.I. Xiros, **J.H. VanZwieten**, C. Sultan, V. Tzelepis (2015) "Modeling, system identification and linearization of underwater turbine power plant dynamics" Proceedings of the ASME 2015 International Mechanical Engineering Congress & Exposition, November 13-19, 2015, Houston, Texas, USA, no. IMECE2015-53455

14. M.C.P.M. Machado*, **J.H. VanZwieten**, A.P.O. Callou*, I. Pinos* (2015) "A measurement based analysis of the hydrokinetic energy in the Gulf Stream" Proceedings of

the International Society of Offshore and Polar Engineers Conference, Kona, Hawaii, June 21-26

15. **J.H. VanZwieten**, P. Pyakurel, C. Sultan, T. Ngo, N.I. Xiros (2015) "An assessment of using variable blade pitch for ocean current turbine flight control" Proceedings of the 3rd Marine Energy Technical Symposium, Washington D.C., April 27-29

16. N. I. Xiros, **J.H. VanZwieten**, C. Sultan, V. Tzelepis (2014) "Power take-off control of in-stream hydrokinetic turbines" Proceedings of the ASME 2014 Dynamic Systems and Control Conference, October 22-24, San Antonio, Texas, no. DSCC2014-6247

17. **J.H. VanZwieten Jr.**, I. Meyer, G.M. Alsenas (2014) "Evaluation of HYCOM as a tool for ocean current energy assessment" Proceedings of the 2nd Marine Energy Technology Symposium (METS14) hosted by the 7th annual Global Marine Renewable Energy Conference, April 15-18, Seattle, Washington, Available: http://vtechworks.lib.vt.edu/handle/10919/49220

18. W.E. Laing Jr., **J.H. VanZwieten** (2014) "Development of a driving electric dynamometer rotor emulator for MHK in-stream turbines" Proceedings of the 2nd Marine Energy Technology Symposium (METS14) hosted by the 7th annual Global Marine Renewable Energy Conference, April 15-18, Seattle, Washington, Available: http://vtechworks.lib.vt.edu/handle/10919/49218

19. **J.H. VanZwieten Jr.**, A.E.S. Duerr, G.M. Alsenas, H.P. Hanson (2013) "Global ocean current energy assessment: an initial look" Proceedings of the 1st Marine Energy Technology Symposium (METS13) hosted by the 6th annual Global Marine Renewable Energy Conference, April 10-11, Washington D.C., Available: http://www.foroceanenergy.org/mets/2013-peer-reviewed-mets-papers/

20. H.P. Hanson, A.E. Duerr, **J.H. VanZwieten** (2012) "Variability in the Florida Current: Implications for power generation" Proceedings of the World Renewable Energy Forum, Denver, Colorado, May 13-17

21. A.D. Fisher, **J.H. VanZwieten Jr.**, N. Xiros (2011) "Station keeping adaptive control of a boat with twin gasoline outboard motors: synthesis, simulation, and sea-trials" Proceedings of the ASME 2011 International Conference on Ocean, Offshore, and Arctic Engineering, Rotterdam, Netherlands, June 19-24, no. OMAE2011-49827

22. **J.H. VanZwieten Jr.**, C.M. Oster*, A.E.S. Duerr (2011) "Design and analysis of a rotor blade optimized for extracting energy from the Florida Current" Proceedings of the ASME 2011 International Conference on Ocean, Offshore, and Arctic Engineering, Rotterdam, Netherlands, June 19-24, no. OMAE2011-49140

23. T.S. VanZwieten, **J.H. VanZwieten**, M.J. Balas, F.R. Driscoll (2009) "Direct adaptive rejection of vortex-induced disturbances for a powered spar platform" Proceedings of the ASME 2009 International Conference on Ocean, Offshore, and Arctic Engineering, Honolulu, Hawaii, May 31-June 5, no. OMAE2009-79492

24. T.S. VanZwieten, M.J. Balas, **J.H. VanZwieten** (2008) "Adaptive output tracking and disturbance rejection with saturation constraints" Proceedings of the AIAA Guidance, Navigation and Control Conference and Exhibit, Honolulu, Hawaii, August 18-21, no. AIAA 2008-6284

Conference Papers (abstracts reviewed)

1. W. Baxley, **J VanZwieten**, Nathaniel Small* (2019) "Measuring The Effects of Hurricanes on Major Ocean Currents and Implications for Ocean Energy Devices" in Proceedings of the 2019 IEEE/OES Twelfth Current, Waves and Turbulence Measurement (CWTM), March 10-13, 2019, San Diego, CA

2. P. Pyakurel, **J. VanZwieten**, M. Dhanak (2016) "Accounting for turbulence in numerical simulation of ocean current turbine" Proceedings of 4th Marine Energy Technical Symposium, Washington D.C., April 25-27

3. P. Pyakurel, **J.H. VanZwieten**, P. Ananthakrishnan, W. Tian (2016) "Simulating turbulence for ocean current turbine" Proceedings of the 21st SNAME Offshore Symposium, February 16, Houston, Texas, USA

4. N.I. Xiros, **J.H. VanZwieten Jr**, C. Sultan, V. Tzelepis (2015) "Modeling an ocean current turbine system with induction generator and power electronic control" Proceedings of the MTS/IEEE Oceans15 technical conference, Genova, Italy, May 18-22, #141219-071

5. **J.H. VanZwieten**, W.E. Baxley, G.M. Alsenas, I. Meyer, M. Muglia, C. Lowcher, J. Bane, M. Gabr, R. He, T. Hudon, R. Stevens, A.E.S. Duerr (2015) "Ocean Current Turbine Mooring Considerations" Proceedings of the Offshore Technology Conference, Houston, Texas, May 4-7, no. OTC-25965-MS

6. **J.H. VanZwieten**, P. Pyakurel, C. Sultan, T. Ngo, N.I. Xiros (2015) "An assessment of using variable blade pitch for ocean current turbine flight control" Proceedings of 3rd Marine Energy Technical Symposium, Washington D.C., April 27-29

7. **J.H. VanZwieten**, M.N. Egeland, K.D. von Ellenrieder, J.W. Lovenbury, L. Kilcher (2015) "Experimental evaluation of motion compensated ADV measurements for in-stream hydrokinetic applications" Proceedings of the IEEE/OES Eleventh Current, Waves and Turbulence Measurement Workshop, March 2-6, St. Petersburg, FL, no. 141023-007

8. J.D. Ramirez*, **J.H. VanZwieten**, L.L. Gloria* (2014) "Adaptive torque control of in-stream hydrokinetic turbines" Proceedings of the IEEE Oceans Conference, St. John's, Newfoundland, Canada, September 14-19, no. 140418-081

9. **J.H. VanZwieten Jr.**, M.T Young, K.D. von Ellenrieder. (2012) "Design and analysis of an ocean current turbine performance assessment system" Proceedings of the IEEE Oceans Conference, Hampton Roads, Virginia, October 14-19, no. 120530-005

10. D.N. Porak*, **J.H. VanZwieten Jr.**, L.T. Rauchenstein. (2012) "Florida's sea water cooling resource: an updated assessment" Proceedings of the IEEE Oceans Conference, Hampton Roads, Virginia, October 14-19, no. 120518-150

11. M. Borghi*, F. Kolawole*, S. Gangadharan, A. Engblom, **J. VanZwieten**, G. Alsenas, W. Baxley, S. Ravenna (2012) "Design, fabrication and installation of a hydrodynamic rotor for a small-scale experimental ocean current turbine" Proceedings of the IEEE SoutheastCon, Orlando, Florida, March 15-18, no. SECon.2012.6196973

12. **J.H. VanZwieten Jr.**, W.E. Laing Jr., C.R. Slezycki (2011) "Efficiency assessment of an experimental ocean current turbine generator" Proceedings of the IEEE Oceans Conference, Kona, Hawaii, September 19-22, no. 110422-215

13. **J.H. VanZwieten Jr.**, L.T. Rauchenstein, H.P. Hanson, M.R. Dhanak (2011) "Assessment of HYCOM as a tool for estimating Florida's OTEC potential" Proceedings of the IEEE Oceans Conference, Kona, Hawaii, September 19-22, no. 110422-145

14. L.T. Rauchenstein, **J.H. VanZwieten Jr.**, H.P. Hanson (2011) "Model-based global assessment of OTEC resources with data validation off Southeast Florida" Proceedings of the IEEE Oceans Conference, Santander, Spain, June 6-9, no. 110115-112

15. M.G. Seibert, **J.H. VanZwieten**, K. von Ellenrieder (2010) "Determining anchoring systems for ocean energy harvesting devices off the coast of Southeast Florida" Proceedings of the IEEE Oceans Conference, Seattle, Washington, September 20-23, no. 100514-057

16. A.R. Cribbs, **J.H. VanZwieten** (2010) "Global numerical analysis of a moored ocean current turbine testing platform" Proceedings of the IEEE Oceans Conference, Seattle, Washington, September 20-23, no. 100528-082

17. A.D. Fisher, **J.H. VanZwieten Jr.**, T.S. VanZwieten (2010) "Station keeping of small outboard-powered boats" Proceedings of the IEEE Oceans Conference, Sydney, Australia, May 24-27, no.100115-098

18. A.E. Leland, F.R. Driscoll, **J.H. VanZwieten,** N.J. Nagurny, R.J. Howard (2010) "Ocean thermal energy capacity estimation and resource assessment of Southeast Florida" Proceedings of the Offshore Technology Conference, Houston, Texas, May 3-6, no. OTC-20559-PP

19. A.D. Fisher, **J.H. VanZwieten Jr.**, T.S. VanZwieten (2009) "Adaptive control of small outboard-powered boats for survey applications" Proceedings of the IEEE Oceans Conference, Biloxi, Mississippi, October 26-29, no. 090529-032

20. T.S. VanZwieten, **J.H. VanZwieten**, F.R. Driscoll, M.J. Balas (2008) "Adaptive disturbance rejection for the Rapidly Deployable Stable Platform when transferring cargo in seas" Proceedings of the IEEE Oceans Conference, Kobe, Japan, no. OCEANSKOBE.2008.4530976

21. **J. VanZwieten** and F.R. Driscoll (2006) "A general small vessel simulation validated through sea trials" Proceedings of the Sixteenth International Offshore and Polar Engineering Conference & Exhibition, San Francisco, California, May 28-June 2

Technical Reports

1. M. Ascari, H. P. Hanson, L. Rauchenstein, **J. VanZwieten**, D. Bharathan, D. Heimiller, N. Langle, G.N. Scott, J. Potemra, E. Jansen, John Nagurny (2012) "Ocean Thermal Extractable Energy Visualization" Final Report to the U.S. Department of Energy, March 30

Book Chapters

1. M.R. Dhanak, A.E.S Duerr, **J.H. VanZwieten** (2016) Springer Handbook of Ocean Engineering, Chapter Entitled: Marine Hydrokinetic Energy Resource Assessment

2. H.P. Hanson, **J.H. VanZwieten**, G.M. Alsenas (2016) Springer Handbook of Ocean Engineering, Chapter Entitled: Ocean Current Energy Conversion

Co-advised M.S. Theses

1. A. Kawssarani (2018) "Optimization of an Ocean Current Turbine Design and Prediction of Wake Propagation in an Array" M.S. Thesis, Florida Atlantic University

2. M.N. Egeland. (2014) "Spectral evaluation of motion compensated ADV systems for ocean turbulence measurements" M.S. Thesis, Florida Atlantic University

3. B.L. Hacker. (2013) "Numerical simulation tool for moored marine hydrokinetic turbines" M.S. Thesis, Florida Atlantic University

4. J. Lovenbury. (2013) "Evaluation and testing of an acoustic Doppler velocimeter for turbulence measurements in an open ocean environment" M.S. Thesis, Florida Atlantic University

5. L.T. Rauchenstein. (2012) "Global distribution of Ocean Thermal Energy Conversion (OTEC) resources and applicability in U.S. waters near Florida" M.S. Thesis, Florida Atlantic University

6. M. Young. (2012) "Design and analysis of an ocean current turbine performance assessment system" M.S. Thesis, Florida Atlantic University

7. M.G. Seibert. (2011) "Determining anchoring systems for marine renewable energy devices moored in a western boundary current" M.S. Thesis, Florida Atlantic University

8. A.R. Cribbs. (2010) "Model analysis of a mooring system for an ocean current turbine testing platform" M.S. Thesis, Florida Atlantic University

9. A.D. Fisher. (2010) "Development and implementation of an adaptive controller for station keeping of small outboard-powered vessels" M.S. Thesis, Florida Atlantic University

10. N. Vanrietvelde. (2009) "Numerical performance prediction for FAU's first generation ocean current turbine" M.S. Thesis, Florida Atlantic University

Co-advised Ph.D. Dissertation

1. P. Pyakurel. (2016) "Numerical simulation of an ocean current turbine operating in a wake field" Ph.D. Dissertation, Florida Atlantic University

Service

Academic

Committees

1. Serving on the Florida Keys Community College, Engineering Technician, Advisory Committee
2. Serving on the FAU Distinction through Discovery, Co-Curricular Committee
3. Serving on the ASCE COPRI Marine Renewable Energy committee and chair of the In-stream Hydrokinetic sub-committees
4. Serving on the Marine Energy Conversion, US Department of Energy, Advanced Water Power Program, Resource Assessment Subcommittee
5. Served on a College of Engineering and Computer Science committee established to help select a Director of Engineering Research for the Southeast National Marine Renewable Energy Center (SNMREC)
6. Served or serving on 6 M.S. thesis committees and 9 Ph.D. committees (does not include co-chaired committees)

Grant Reviewer

1. Reviewer for NSF, 2016 (1 proposal), 2017 (1 panel), 2018 (2 panels)
2. Reviewer for the 2010 US Department of Commerce/NOAA Sea Grant SBIR (Phase I)
3. Reviewer for the 2011 US Department of Commerce/NOAA Sea Grant SBIR (Phase II)
4. Reviewer for both the 2011 and 2012 DOE SBIR solicitation (Phase I)
5. Reviewed two pre-proposals for the 2015 FAU Curriculum Grants Program
6. Reviewed four (fall 2015), four (spring 2016), three (fall 2016), three (fall 2017), one (spring/summer 2018), two (summer 2019), three (fall 2019), one (spring 2020), and two (fall 2020) proposals for the FAU OURI Research Grant Competition

Standards Reviewer

1. Reviewed IEC TC114 technical specifications numbers 52, 56, and 71

Journal Paper Reviewer

1. Reviewed twenty-four technical articles for the Renewable Energy journal
2. Reviewed three technical articles for the IEEE Transactions on Sustainable Energy
3. Reviewed three technical articles for the IEEE Oceanic Engineering journal
4. Reviewed three technical articles for the IEEE Transactions on Mechatronics
5. Reviewed three technical articles for Ocean Engineering
6. Reviewed two technical articles for Nature Sustainability
7. Reviewed two technical articles for the Journal of Atmospheric and Oceanic Technology
8. Reviewed two technical articles for Ships and Offshore Structures
9. Reviewed two technical article for Journal of Marine Science and Engineering
10. Reviewed one technical article for the International Journal of Marine Energy
11. Reviewed one technical article for the Journal of Hydraulic Research
12. Reviewed one technical article for Energy
13. Reviewed one technical article for Energies
14. Reviewed one technical article for the Marine Technology Society Journal
15. Reviewed one technical article for Remote Sensing of Environment
16. Reviewed one technical article for the FAU Undergrad Research Journal

Conference Paper Reviewer

1. Reviewed six technical articles for the 2011 (2 articles), 2012 (2 articles) and 2015 (2 articles) ASME/OMAE conference
2. Reviewed two technical articles for the 2013 (1 article) and 2016 (1 article) GMREC/IMREC/METS conference
3. Reviewed one technical article for the 2015 European Wave and Tidal Energy Conference Series
4. Reviewed two technical articles for the 2016 (1 article) and 2017 (1 article) American Control Conference

5. Reviewed one technical article for the 2016 Energy and Water Conference
6. Reviewer six abstracts for the 2017 Florida Undergraduate Research Conference (FURC)

Session Chair

1. Session chair for the 2014 GMREC/METS conference

Competition Judge

1. Judge for the 2012 and 2013 FAU Graduate Student Poster Completions
2. Judge for the 2014, 2015, 2018, and 2019 DTD Undergraduate Student Presentation and Poster Competitions

Community

- Beach Volleyball coach for US junior teams at four Junior Beach Volleyball World Championships and the Sydney Youth Olympics
- Head of the US delegation at the 2003 Junior Beach Volleyball World Championships