

ERIC J. ANDERSON, PH.D.

National Oceanic and Atmospheric Administration
Great Lakes Environmental Research Laboratory
4840 South State Road
Ann Arbor, MI 48108
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MAJOR RESEARCH INTERESTS

- Hydrodynamic modeling of lakes, rivers, and coastal zones
- Real-time forecasting systems and decision support tools
- Sustainable waters, drinking water safety, contaminant transport
- Coupled Bio-physical processes and interactions with society

EDUCATION

- | | | |
|--------------|--|------|
| Ph.D. | Mechanical & Aerospace Engineering
Case Western Reserve University, Cleveland, Ohio | 2007 |
| B.S. | Mechanical Engineering
Case Western Reserve University, Cleveland, Ohio | 2003 |

PROFESSIONAL EXPERIENCE

- | | |
|---|-------------------------|
| <i>Physical Scientist / Oceanographer</i>
<i>Physical Oceanography and hydrodynamic modeling</i>
Great Lakes Environmental Research Laboratory
National Oceanic and Atmospheric Administration, Ann Arbor, MI | August 2012 – present |
| <i>Assistant Research Scientist</i>
<i>Sustainability in lakes and rivers using hydrodynamic prediction systems</i>
Cooperative Institute for Limnology and Ecosystem Research
School of Natural Resources and Environment
University of Michigan, Ann Arbor, MI
Great Lakes Environmental Research Laboratory, Ann Arbor, MI | August 2010 – July 2012 |
| <i>Research Associate</i>
<i>Hydrodynamic modeling in the Great Lakes</i>
Cooperative Institute for Limnology and Ecosystem Research
School of Natural Resources and Environment
University of Michigan, Ann Arbor, MI
Great Lakes Environmental Research Laboratory, Ann Arbor, MI | August 2009 – July 2010 |
| <i>Postdoctoral Research Associate</i>
<i>Development of operational oceanographic models for physical and ecosystem forecasts</i>
National Research Council
National Ocean and Atmospheric Administration
Great Lakes Environmental Research Laboratory, Ann Arbor, MI | July 2007 – July 2009 |
| <i>Postdoctoral Scholar</i>
<i>Computational fluid dynamics modeling and design of flow-directing materials</i>
Department of Mechanical & Aerospace Engineering
Case Western Reserve University, Cleveland, OH | Jan 2007 – July 2007 |

Research Assistant – Graduate Student Fellow

Lerner Research Institute
Cleveland Clinic Foundation, Cleveland, OH

2004 – 2006

Research Assistant

National Center for Microgravity Research
NASA Glenn Research Center, Cleveland, OH

2003 – 2004

TEACHING EXPERIENCE

Case Western Reserve University

Introduction to Thermodynamics, Fluids, Heat & Mass Transfer - Introductory fundamental thermodynamics course for undergraduates

Fluid Dynamics in Cell and Tissue Engineering – Graduate level course for experimental biomechanics

AWARDS, HONORS, SEMINARS

U.S. Dept. of Commerce Bronze Medal Award for Superior Federal Service, NOAA – For successfully developing and transitioning the next-generation Lake Erie Operational Forecast System into NOAA operations - 2017

U.S. Dept. of Commerce Bronze Medal Award for Superior Federal Service, NOAA – For response activities for the Lake Erie harmful algal bloom that impacted drinking water supplies in Ohio and Michigan - 2016

Research Fellowship, National Research Council – National Academies Research Associateship Program, National Ocean and Atmospheric Administration – 2007

Instructional Excellence Award, Case Western Reserve University - 2007

PATENTS

Knothe Tate M.L. and **E.J. Anderson**, 2013. Flow directing materials and systems. US Patent No. 8,609,132 B2, filed April 21, 2008, issued Dec. 13, 2013.

GRANTS

08/2017 – 07/2019, **NOAA OWAQ**, *Improving lake-effect snow and ice forecasting for the Great Lakes region*, **Co-Principal Investigator**, \$300,000

10/2016 – 09/2019, **NOAA**, *Implementation of a 3D HAB forecast model for Lake Erie using FVCOM*, **Principal Investigator**, \$605,000

10/2016 – 09/2019, **NOAA**, *Implementation of the FVCOM-Ice model for the Great Lakes Operational Forecast System*, **Principal Investigator**, \$645,000

10/2016 – 09/2021, **NOAA NOS/NCCOS**, *LEOFS-Hypoxia Operational Lake Erie Hypoxia Forecasting for Public Water System Decision Support*, **Co-Principal Investigator**, \$1,500,000

02/2016 – 02/2017, **NOAA NMFS**, *Assessment of contaminated sediment transport in the Manistique River*, **Principal Investigator**, \$185,000

10/2014 – 09/2017, **NOAA Coastal Storms Program**, *A high-resolution wave and circulation model guidance system for the Great Lakes Region*, **Co-Principal Investigator**, \$890,000

10/2014 – 09/2016, **EPA**, *Assessment of urban watershed phosphorous loading impacts on HAB formation and nearshore water quality*, **Principal Investigator**, \$759,058

10/2013-09/2016, **NOAA**, A high-resolution wave and circulation model guidance system for the Great Lakes region, **Co-Principal Investigator**, \$1,200,000

10/2013 – 09/2014, **EPA**, Decision support tools for nearshore water quality prediction, **Principal Investigator**, \$836,494

05/2012 – 04/2013, **NOAA NMFS**, *Contaminant transport and seiche effects on a lake-tributary system and sediment dynamics*, **Principal Investigator**, \$60,000

01/2011 – 12/2015, **NSF Water, Sustainability, and Climate**, *Extreme events impacts on water quality in the Great Lakes: Prediction and management of nutrient loading in a changing climate*, **Co-Investigator**, \$5,000,000

10/2010 – 09/2012, **EPA**, *Nearshore Observing System for Lake Erie*, **Co-Principal Investigator**, \$928,000

08/2011 – 07/2012, **GLOS**, *Hydrodynamic Modeling in Support of Decision Support Tools*, **Principal Investigator**, \$144,219

08/2010 – 08/2011, **GLOS**, *River plume dynamics and forecasting for Saginaw Bay, Fox River, and St. Lawrence River*, **Principal Investigator**, \$200,000

08/2009 – 08/2010, **GLOS**, *An Operational Hydrodynamic Model of the Huron to Erie Corridor: Dye experiments in the St. Clair River*, **Principal Investigator**, \$80,000

08/2007 – 08/2009, **National Research Council**, *Hydrodynamic Modeling of the Great Lakes: Incorporating Complex Geometry into the Great Lakes Forecasting System (GLFS) using the Finite-Volume Coastal Ocean Model (FVCOM)*, **Principal Investigator**, \$95,000

PUBLICATIONS

1. **E.J. Anderson** and D.J. Schwab, **2017**. Meteorological influence on summertime baroclinic exchange in the Straits of Mackinac, *J. Geophysical Research – Oceans*, doi:10.1002/2016JC012255
2. Rowe, M.D., **E.J. Anderson**, H. Vanderploeg, S. Pothoven, A. Elgin, J. Wang, F. Yousef, **2017**. Influence of invasive quagga mussels, phosphorus loads, and climate on spatial and temporal patterns of productivity in Lake Michigan: A biophysical modeling study, *Limnology and Oceanography*, in press
3. Bechle, A., C.H. Wu, D.A.R. Kristovich, **E.J. Anderson**, D.J. Schwab, A.B. Rabinovich, **2016**. Meteotsunamis in the Laurentian Great Lakes. *Scientific Reports* (DOI:10.1038/srep37832)
4. Rowe, M.D., **E.J. Anderson**, T.T. Wynne, R.P. Stumpf, D.L. Fanslow, K. Kijanka, H.A. Vanderploeg, J.R. Strickler, T.W. Davis, **2016**. Vertical distribution of buoyant *Microcystis* blooms in a Lagrangian particle tracking model for short-term forecasts in Lake Erie, *J. Geophysical Research – Oceans* 121(7):5296-5314
5. Brodник, R.M., M.E. Fraker, **E.J. Anderson**, et al., **2016**. Larval dispersal underlies demographically important intersystem connectivity in a Great Lakes yellow perch (*Perca flavescens*) population, *Canadian Journal of Fisheries and Aquatic Sciences*, 73(3): 416-426, doi:10.1139/cjfas-2015-0161
6. **Anderson E.J.**, A.J. Bechle, C.H. Wu, D.J. Schwab, G.E. Mann, K.A. Lombardy, **2015**. Reconstruction of a meteotsunami in Lake Erie on May 27, 2012: roles of atmospheric conditions on hydrodynamic response in enclosed basins, *Journal of Geophysical Research - Oceans*, 120, 8020–8038, doi:10.1002/2015JC010883
7. Gronewold, A.D., **E.J. Anderson**, et al., **2015**. Impacts of extreme 2013-2014 winter conditions on Lake Michigan's fall heat content, surface temperature, and evaporation. *Geophysical Research Letters* 42:7, doi:10.1002/2015GL063799

8. Fraker, M.E., **E.J. Anderson**, et al., **2015**. Particle backtracking improves breeding subpopulation discrimination and natal-source identification in mixed populations, *PLOS One* 10(3):24, doi:10.1371/journal.pone.0120752
9. Fraker, M.E., **E.J. Anderson**, et al., **2015**. Stock-specific advection of larval walleye (*Sander vitreus*) in western Lake Erie: Implications for larval growth, mixing, and stock discrimination, *Journal of Great Lakes Research*, 41(3), doi:10.1016/j.jglr.2015.04.008
10. Niu, Q., M. Xia, E.S. Rutherford, D.M. Mason, **E.J. Anderson**, D.J. Schwab, **2015**. Investigation of interbasin exchange and interannual variability in Lake Erie using an unstructured-grid hydrodynamic model, *J. Geophysical Research – Oceans* 120:21, doi:10.1002/2014JC010457
11. Rowe, M.D., **E.J. Anderson**, J. Wang, H.A. Vanderploeg, **2015**. Modeling the effect of quagga mussels on the spring phytoplankton bloom in Lake Michigan, *J. Great Lakes Research* 41:17, doi:10.1016/j.jglr.2014.12.018
12. Quintrell, J., R. Luettich, B. Baltes, B. Kirkpatrick, R.P. Stumpf, D.J. Schwab, J. Read, J. Kohut, J. Manderson, M. McCammon, R. Callender, M. Tomlinson, G.J. Kirkpatrick, H. Kerkering, **E.J. Anderson**, **2015**. The Importance of Federal and Regional Partnerships in Coastal Observing – Coastal Ocean Observing Systems, *Academic Press*, pp. 26-39 (doi:10.1016/B978-0-12-802022-7.00003-1)
13. Nguyen, T.D., P. Thupaki, **E.J. Anderson**, M.S. Phanikumar, **2014**. Summer circulation and exchange in the Saginaw Bay-Lake Huron system, *J. Geophysical Research – Oceans* 119:2713-2734 (DOI: 10.1002/2014JC009828)
14. **Anderson E.J.** and D.J. Schwab, **2013**. Predicting the oscillating bi-directional exchange flow in the Straits of Mackinac, *J. Great Lakes Research* 39(4):66671 (DOI:10.1016/j.jglr.2013.09.001)
15. Ball E.E., Smith D.E., **Anderson E.J.**, Skufca J.D., Twiss M.R., **2013**. Delineating nearshore and main channel environments in the Upper St. Lawrence River: Plankton community assessment in a large river system. *Aquatic Ecosystem Health and Management (in review)*
16. Michalak A.M., **Anderson E.J.**, Beletsky D., et al., **2013**. Record-setting algal bloom in Lake Erie caused by agricultural and meteorological trends consistent with expected future conditions, *Proceedings of the National Academy of Sciences*, doi:10.1073/pnas.1216006110
17. Sun Y., Wells M.G., Bailey S.A., **Anderson E.J.**, **2013**. Physical dispersion and dilution of ballast water discharge in the St. Clair River, *Water Resources Research* 49:1-13 (DOI:10.1002/wrcr.20201)
18. **Anderson E.J.** and Schwab D.J., **2012**. Contaminant transport and spill reference tables for the St. Clair River, *Marine Technology Society* 46(5).
19. **Anderson, E.J.**, Phanikumar M.S., **2011**. Surface storage dynamics in large rivers: Comparing three-dimensional particle transport, one-dimensional fractional derivative, and multirate transient storage models, *Water Resources Research*, 47, W09511, doi:10.1029/2010WR010228.
20. Szalinska E., Drouillard K.G., **Anderson E.J.**, Haffner G.D., **2011**. Factors influencing contaminant distribution in the Huron-Erie Corridor sediments. *Journal of Great Lakes Research* 37(1): 132-139, doi: 10.1016/j.jglr.2010.11.005.
21. **Anderson E.J.**, Schwab D.J., **2011**. Relationships between wind-driven and hydraulic flow in Lake St. Clair and the St. Clair River Delta. *Journal of Great Lakes Research* 37(1): 147-158, doi: 10.1016/j.jglr.2010.11.007.
22. Read J., Klump V., Johengen T., Schwab D.J., Paige K., Eddy S., **Anderson E.J.**, Manninen C., **2010**. Working in freshwater: The Great Lakes Observing System contributions to regional and national observations, data infrastructure and decision-support. *Marine Technology Society Journal* 44(6): 84-98.

23. Shen C., Niu J., **Anderson E.J.**, Phanikumar M.S., **2010**. Estimating Longitudinal Dispersion in Rivers Using Acoustic Doppler Current Profilers. *Advances in Water Resources* 33(6): 615-523.
24. **Anderson E.J.**, Schwab D.J., Lang G.A., **2010**. Real-time Hydraulic and Hydrodynamic Modeling of the Combined St. Clair River – Lake St. Clair – Detroit River System. *Journal of Hydraulic Engineering* 136(8): 507-518.
25. Knothe Tate M.L., Steck R., **Anderson E.J.**, **2008**. Bone as an Inspiration for a Novel Class of Mechanoactive Materials. *Biomaterials*, doi: 10.1016/j.biomaterials.2008.09.028.
26. **Anderson E.J.**, Knothe Tate M.L., **2008**. Idealization of Pericellular Fluid Space Geometry and Dimension Results in a Profound Underprediction of Nano-Microscale Stresses Imparted by Fluid Drag on Osteocytes. *Journal of Biomechanics*, 41:1736-1746.
27. **Anderson E.J.**, Knothe Tate M.L., **2008**. Pairing Computational and Scaled Physical Models to Determine Permeability as a Measure of Cellular Communication in Micro- and Nano-scale Pericellular Spaces. *Microfluidics and Nanofluidics*, 4(3).
28. **Anderson E.J.**, Knothe Tate M.L., **2007**. Open Access to Novel Dual Flow Chamber Technology for in vitro Cell Mechanotransduction, Toxicity and Pharmacokinetic Studies. *Biomedical Engineering Online*, 6(46).
29. **Anderson E.J.**, Knothe Tate M.L., **2007**. Design of Tissue Engineering Scaffolds as Delivery Devices for Mechanical and Mechanically Modulated Signals. *Tissue Engineering*, 13(10).
30. **Anderson E.J.**, Falls T.D., Sorkin A.M., Knothe Tate M.L., **2006**. The Imperative for Controlled Mechanical Stresses in Unraveling Cellular Mechanisms of Mechanotransduction. *Biomedical Engineering Online*, 5(27).
31. **Anderson E.J.**, Kaliyamoorthy S., Alexander J.I.D., Knothe Tate M.L., **2005**. Nano-microscale Models of Periosteocytic Flow Show Differences in Stresses Imparted to Cell Body and Processes. *Annals of Biomedical Engineering*, 33(1): 52-62.

SELECT PRESENTATIONS

1. ANDERSON, E.J. Linking Hydrologic and Coastal Hydrodynamic Models in the Great Lakes, American Meteorological Society Annual Meeting, Seattle, WA (2017).
2. ANDERSON, E.J. Using the Next-Generation Great Lakes Operational Forecasting System (GLOFS) to Predict Harmful Algal Blooms (HAB) Transport with the HAB Tracker, American Meteorological Society Annual Meeting, Seattle, WA (2017).
3. ANDERSON, E.J. Meteotsunamis in the Great Lakes and investigation of recent events in Lake Erie and Lake Superior, Ocean Sciences Meeting, New Orleans, LA (2016).
4. ANDERSON, E.J. Oscillating flow in the Straits of Mackinac. No-Spills Conference, Mt. Pleasant, MI, January 5, 2015 (2015).
5. ANDERSON, E.J., A.J. Bechle, C.H. Wu, G.E. Mann, D.J. SCHWAB, and K.A. Lombardy. Detection and reconstruction of meteotsunami on Lake Erie. 58th Annual Conference of the International Association for Great Lakes Research, University of Vermont, Burlington, VT, May 25-29, 2015 (2015).
6. ANDERSON, E.J., L.M. FRY, E.L. KRAMER, and A.A. RITZENTHALER. Linked hydrologic-hydrodynamic model framework to forecast impacts of rivers on beach water quality (poster). AGU Fall Meeting, San Francisco, CA, December 15-19, 2014. American Geophysical Union (2014).
7. ANDERSON, E.J. NOAA winds and waves forecasting. Great Lakes Grand Banks Association, Harbor Springs, MI, August 8, 2014 (2014).
8. ANDERSON, E.J., L.M. FRY, E.L. KRAMER, K.B. CAMPBELL, and A.A. RITZENTHALER. A linked hydrologic-hydrodynamic-bacteria model framework for beach water quality forecasting. 2014 Ocean Sciences Meeting, Honolulu, HI, February 23-28, 2014. ASLO, TOS, and AGU (2014).
9. ANDERSON, E.J. Predicting the oscillating bi-directional flow at the Straits of Mackinac. 13th International Conference on Estuarine and Coastal Modeling, San Diego, CA, November 4-6, 2013 (2013)

10. ANDERSON, E.J., and D.J. SCHWAB. Modeling the oscillating bi-directional flow at the Straits of Mackinac. 56th Annual Conference of the International Association for Great Lakes Research, Purdue University, W. Lafayette, IN, June 2-6, 2013 (2013).
11. Anderson E.J., Schwab D.J., Lombardy R.E., LaPlante R.E., Detection and modeling of a meteotsunami in Lake Erie during a high wind event on May 27, 2012, AGU Fall Meeting 2012, San Francisco, CA.
12. Wu C., Bechle A., Schwab D.J., Anderson E.J., Meteotsunamis in Lake Michigan, AGU Fall Meeting 2012, San Francisco, CA.
13. Gronewold A.D., Ritzenthaler A., Fry L.M., Anderson E.J., Forecasting recreational water quality standard violations with a linked hydrologic-hydrodynamic modeling system, AGU Fall Meeting 2012, San Francisco, CA.
14. Anderson E.J., Schwab D.J., Campbell K.B., Upper St. Lawrence River Forecasting System: Real-Time Conditions and Forecasts of Water Levels and Currents, IAGLR 2012, Cornwall, Ontario.
15. Michalak A.M., Scavia D., Steiner A., Moore M., Laporte E., Anderson E.J., Beletsky D., Bosch N., Bridgeman T.B., Cho K., Daloglu I., DePinto J.V., Evans M.A., Fahnenstiel G., Ho J., Johengen T., McWilliams M., Posselt D., Richards P., Ruberg S.A., Schwab D.J., Wright D., The 2011 Algal Bloom in Lake Erie: A Conceptual Model of an Extreme Event, IAGLR 2012, Cornwall, Ontario.
16. Anderson E.J., Beletsky D. Nearshore transport and plume dynamics in Lake Erie Areas of Concern (AOC), AGU Ocean Sciences, Salt Lake City, UT.
17. Anderson E.J., Beletsky D. Hydrodynamics in Lake Erie and Nearshore River Mouth Transport for Three Areas of Concern (AOC) using FVCOM, ECM 2011, St. Augustine, FL.
18. Schwab D.J., Anderson E.J., An Operational Model of the Upper St. Lawrence River for Real-Time Forecasts of Water Levels and Currents, ECM 2011, St. Augustine, FL.
19. Anderson E.J., Schwab D.J. Development of a real-time hydrodynamic model of the upper St. Lawrence River, IAGLR 2011, Duluth, MN.
20. Beletsky D., Beletsky R., Schwab D.J., Anderson E.J., Lang G. Interannual variability of circulation in Saginaw Bay, IAGLR 2011, Duluth, MN.
21. Roehm C.L., Anderson E.J., Beletsky D., Perrelli M., Singer J., Vermette S. Hydrodynamics of Nearshore Lake Erie: An Insight into Winter Conditions, IAGLR 2011, Duluth, MN
22. Roehm C.L., Anderson E.J., Beletsky D., Perrelli M., Singer J., Vermette S. Observing and Monitoring Systems in Nearshore Lake Erie, IAGLR 2011, Duluth, MN.
23. Anderson E.J., Phanikumar M.S. Solute Transport in Large Rivers: 3D Lagrangian, 1D FTADE, and 1D MRTS models, AGU 2010, San Francisco, CA.
24. Anderson E.J. and Schwab D.J. Contaminant Tracking in the St. Clair River: Public Water Safety and Spill Response, IAGLR 2010, Toronto, Ontario.
25. Anderson E.J., Schwab D.J. Hydrodynamic Modeling in the Great Lakes Huron-Erie Corridor: Contaminant Tracking and Ballast Water Discharge, ECM 11, Seattle, WA.
26. Anderson E.J., Schwab D.J., Lang G.A. Hydrodynamic Forecasting System of the Huron-Erie Corridor for Operational Water-levels and Currents, ECM11, Seattle, WA.
27. Anderson E.J., Schwab D.J., Lang G.A. A Three-Dimensional Hydrodynamic Model of the Huron-Erie Corridor: Operational Forecasting and Current Comparisons, *IAGLR 2009*, Toledo, OH.
28. Xia M., Anderson E.J., Schwab D.J. Applications of FVCOM in the Great Lakes for High-Resolution Hydrodynamic Modeling, *IAGLR 2009*, Toledo, OH.
29. Anderson E.J., Schwab D.J. Updates and Refinements to the Hydrodynamic Forecast Model in the Huron-Erie Corridor, *Workshop on the Huron-Erie Corridor Forecasting System*, August 22nd, 2008, Clinton Township, MI, invited speaker.
30. Anderson E.J. Hydrodynamic Modeling and Forecasting in the Great Lakes. *Climate Impacts on the Great Lakes Ecosystem Workshop*, July 29th, 2008, University of Michigan, Ann Arbor, MI, invited speaker.
31. Anderson E.J., Holtschlag D.J., Lang G., Schwab D.J. An Operational Hydrodynamic Model of the St. Clair-Detroit River Waterway, *Spill Scenarios on the St. Clair River Workshop*, June 19th, 2008, Port Huron, MI, invited speaker.
32. Anderson E.J., Holtschlag D.J., Lang G., Schwab D.J. An Operational 2-Dimensional Hydrodynamic Model of the St. Clair-Detroit River Waterway: Implementation into the Great Lakes Forecasting System (GLFS), *51st Annual Conference on Great Lakes Research, IAGLR 2008*, Peterborough, Ontario.
33. Anderson E.J., Knothe Tate M.L. Idealization of pericellular fluid space strongly influences the prediction of local stresses imparted by fluid drag on cell surfaces, *5th World Congress of Biomechanics*; July 29-Aug 4, 2006, Munich, Germany.

34. Anderson E.J., Knothe Tate M.L. Impact of physiologic geometry in predicting forces imparted locally to cells through load-induced fluid flow, *52nd Annual Meeting of the Orthopaedic Research Society*; Chicago, IL
35. Anderson E.J., Knothe Tate M.L. Computational and scaled-physical models transcending the tissue and cellular length scales of bone, *2005 Annual Meeting of the Biomedical Engineering Society*; September 2005.

ADVISING

Grand Valley State University – Annis Water Resources Institute

Qianqian Liu, Postdoctoral Research Associate, *Great Lakes Estuary Hydrodynamic Modeling*, 2016-present.

University of Michigan

Xiaoyan He, graduate student, *Numerical Modeling of Lake Erie: High-resolution model for nearshore / offshore transport of nutrients*, 2009. (Now at Nanjing University, China)

Tuan Duc Nguyen, Ph.D. student, *Hydrodynamic/Hydraulic modeling and current meter deployment in Saginaw Bay*, 2011.

Mark Rowe, Postdoctoral Fellow, *Development of a lagrangian particle trajectory model for short-term HAB forecasts in Lake Erie*, 2014-2015.

Ayumi Fujisaki Manome, Postdoctoral Fellow, A high-resolution wave and circulation model guidance system for the Great Lakes Region, 2014-2016.

University of Wisconsin-Madison

Jon Reimer, Ph.D. student, *Hydrodynamics of the Yahara Lakes-River Chain System*, 2011.

Adam Bechle, Ph.D student, *Meteteotsunami formation in the Great Lakes*, 2013 – 2015.

Alvaro Linares, Ph.D. student, *High-frequency water level oscillations*, 2016 – present.

Case Western Reserve University

Nicola Bianchi, Mechanical Engineering Diploma thesis work, student from Pisa University in Italy, *Functional add-on for the ProFlow mechanical loading and perfusion system to allow for application of normal stresses to cells*, 2007. (Now at Pisa University Graduate School)

Tom Falls, undergraduate and graduate Biomedical Engineering student, *Design and operation of a flow chamber for experimental cell studies*, Fall 2005 – Spring 2007. (Now at University of Rochester Medical School)

Stephen Kreuzer, undergraduate Mechanical Engineering student, *Mechanobiological influences in Bone Tissue*, Spring 2005 - Spring 2006. (Now at University of Texas Graduate School)

Sara McBride, graduate Biomedical Engineering student, *Operation of flow chamber for engineering tissue scaffolds as delivery devices for fluid-induced mechanical signals*, Spring 2006 – Spring 2007.

PROFESSIONAL ACTIVITY

Professional Affiliations

American Geophysical Union (AGU, 2007 – present)

American Meteorological Society (AMS, 2017 – present)

International Association for Hydro-Environment Engineering and Research (IAHR, 2008-present)

International Association for Great Lakes Research (IAGLR, 2008 – present)

American Society of Limnology and Oceanography (ASLO, 2007 – present)

Journal Reviews

Water Resources Research, ad hoc reviewer (2012 – present)

J. Geophysical Research – Oceans, ad hoc reviewer (2015 – present)

J. of Hydrology, ad hoc reviewer (2014 – present)

Water Research, ad hoc reviewer (2012 – present)

ASCE Journal of Hydraulic Engineering, ad hoc reviewer (2009 – present)

ASCE Estuarine and Coastal Modeling, ad hoc reviewer (2009 – present)

Aquatic Science, ad hoc reviewer (2017 – present)

Journal of Great Lakes Research, ad hoc reviewer (2010 – present)

Environmental Modelling & Software, ad hoc reviewer (2010 – present)

Conference Organizing

Comparing Physical Processes in Shallow Seas, Large Lakes, and Semi-Enclosed Basins, session chair (Ocean Sciences Meeting 2016)
Integrating State-of-the-Art Knowledge of Microbiological Processes into Tributary and Nearshore Water Quality Models, session chair (AGU Fall Meeting 2014)
Physical Processes in Lakes, session co-chair (IAGLR Conference 2015)
Extreme or Catastrophic Events in Lakes or Rivers, session chair (IAGLR Conference 2011)
ASCE Estuarine and Coastal Modeling, Circulation Models, session chair (ECM Conference 2011-present)

Grant Reviews and Science Advisory Panels

Michigan Departments of Environmental Quality, DNR, and Agriculture and Rural Development, Great Lakes Net-Pen Commercial Aquaculture: A Short Summary of the Science, science panel member (2015)
NOAA Coastal Storms Program – science panel (2014)
Illinois Water Resources Center (IWRC) – Illinois Sea Grant, ad hoc reviewer (2011)