

Matthew J. Hoffman

ASSOCIATE PROFESSOR · ROCHESTER INSTITUTE OF TECHNOLOGY

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Education

University of Maryland, College Park

College Park, MD

PH.D. IN APPLIED MATHEMATICS AND SCIENTIFIC COMPUTATION

2009

M.S. IN APPLIED MATHEMATICS AND SCIENTIFIC COMPUTATION

2007

• Advisors: Eugenia Kalnay and James A. Carton

Williams College

Williamstown, MA

B.A. IN MATHEMATICS AND ASTROPHYSICS

2004

Professional Experience

Rochester Institute of Technology

Rochester, NY

ASSOCIATE PROFESSOR, SCHOOL OF MATHEMATICAL SCIENCES

2017 - Present

ASSISTANT PROFESSOR, SCHOOL OF MATHEMATICAL SCIENCES

2011 - 2017

DIRECTOR, MS GRADUATE PROGRAM IN APPLIED AND COMPUTATIONAL MATHEMATICS

2016 - 2019

GRADUATE FACULTY MEMBER, CHESTER F. CARLSON CENTER FOR IMAGING SCIENCE

2012 - Present

DIRECTOR OF ANALYTICS, RIT MEN'S HOCKEY TEAM

2016 - 2019

Atmospheric and Environmental Research

Lexington, MA

CONSULTANT

2011

Johns Hopkins University

Baltimore, MD

GLENADORE AND HOWARD L. PIM POSTDOCTORAL FELLOW, DEPARTMENT OF EARTH AND PLANETARY SCIENCES

2009 - 2011

Center for Weather Forecasts and Climate Studies (CPTEC)

Cachoeira Paulista, SP, Brazil

VISITING SPECIALIST OF THE BRAZILIAN SCIENCE AND TECHNOLOGY MINISTRY

2008

Recent Funding

EXTERNAL

2020-2021	University of Toronto , pELastics Project: Fate Limnocorral Experiment, PI	\$5,644
2020-2022	NOAA SeaGrant , Impacts of Microplastic Pollution on Benthic Ecosystem Functions and Services, Co-PI	\$237,140
2019-2021	P2I , Development of a Plastics Pollution Prevention Toolkit for Science on a Sphere, Co-PI	\$4,956
2018-2021	AFOSR , High-fidelity scene modeling and vehicle tracking using hyperspectral video, PI	\$598,750
2018-2021	NSF , Developing a quantitative three-dimensional understanding of cardiac arrhythmias, Co-PI	\$234,989
2017-2020	NSF-IUSE , Data Integration in Undergraduate Mathematics Education, Co-PI	\$253,052
2015	Defense University Research Instrumentation Program (DURIP) , Hyperspectral Video System, Co-PI	\$311,882
2015-2017	AFOSR , Dynamic Modality Switching Aided Object Tracking using an Adaptive Sensor, PI	\$150,000
2015	NSF , REU Supplement to Intramural forecasting of cardiac electrical dynamics, Co-PI	\$5,000
2013-2015	NOAA , Comparison of 4DVAR and LETKF in Assimilating JPSS-Derived Sea-Surface Temperature in the Chesapeake Bay Operational Forecasting System, PI	\$57,079
2012-2015	NSF , Intramural forecasting of cardiac electrical dynamics, Co-PI	\$261,234
2011-2013	AFOSR , DDDAS for Object Tracking in Complex and Dynamic Environments (DOTCODE), Co-PI	\$240,123

OTHER GRANTS

2020-2021	XSEDE , Ensemble Kalman Filter Data Assimilation for Forecasting and 3D Transport Modeling in Lake Erie, PI	\$2,070
2019-2020	XSEDE , Ensemble Kalman Filter Data Assimilation for Forecasting and 3D Transport Modeling in Lake Erie, PI	\$892
2018-2019	Dean's Research Initiation Grant , Developing a cross-disciplinary research cluster studying the input, fate, and effects of plastic pollution in the Great Lakes, PI	\$25,000
2018	NVIDIA , GPU Grant of a Titax Xp GPU, PI	\$1,150
2018-2019	XSEDE , Ensemble Kalman Filter Data Assimilation for Forecasting and 3D Transport Modeling in Lake Erie, PI	\$823
2017	NVIDIA , GPU Grant of a Titax X Pascal GPU, PI	\$970
2016-2017	XSEDE , Improving Temperature and Salinity Estimates in the Chesapeake Bay Operational Forecasting System Using Satellite Sea-Surface Temperature, PI	\$8,693
2015-2016	XSEDE , Correcting Temperature and Salinity in the Chesapeake Bay Operational Forecasting System Using Satellite Sea-Surface Temperature, PI	\$7,656
2015-2016	RIT Interdisciplinary Teaching Grant , Climate Change Curriculum at RIT, Co-PI	\$18,500
2015-2016	RIT Connect Grant , COMMENT: Communication and Outreach through Mentored Media Engagement and Networking Teams, Co-PI	\$8,000
2013-2014	Dean's Research Initiation Grant , Modeling and Assimilation System Development for Lake Ontario., PI	\$10,000

Publications

JOURNAL ARTICLES [27]

- 1 Marcotte, C. D., Fenton, F. H., Hoffman, M. J., & Cherry, E. M. (2021). Robust data assimilation with noise: Applications to cardiac dynamics [Publisher: American Institute of Physics]. *Chaos: An Interdisciplinary Journal of Nonlinear Science*, 31(1), 013118. <https://doi.org/10.1063/5.0033539>
- 2 Rangnekar, A., Mokashi, N., Ientilucci, E. J., Kanan, C., & Hoffman, M. J. (2020). AeroRIT: A New Scene for Hyperspectral Image Analysis [Conference Name: IEEE Transactions on Geoscience and Remote Sensing]. *IEEE Transactions on Geoscience and Remote Sensing*, 58(11), 8116–8124. <https://doi.org/10.1109/TGRS.2020.2987199>
- 3 Hoffman, M. J., & Cherry, E. M. (2020). Sensitivity of a data-assimilation system for reconstructing three-dimensional cardiac electrical dynamics [Publisher: Royal Society]. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 378(2173), 20190388. <https://doi.org/10.1098/rsta.2019.0388>
- 4 Daily, J., & Hoffman, M. J. (2020). Modeling the three-dimensional transport and distribution of multiple microplastic polymer types in Lake Erie. *Marine Pollution Bulletin*, 154, 111024. <https://doi.org/10.1016/j.marpolbul.2020.111024>
- 5 Mendez, M. J., Hoffman, M. J., Cherry, E. M., Lemmon, C. A., & Weinberg, S. H. (2020). Cell Fate Forecasting: A Data-Assimilation Approach to Predict Epithelial-Mesenchymal Transition. *Biophysical Journal*, 118(7), 1749–1768. <https://doi.org/10.1016/j.bpj.2020.02.011>
- 6 Mason, S. A., Daily, J., Aleid, G., Ricotta, R., Smith, M., Donnelly, K., Knauff, R., Edwards, W., & Hoffman, M. J. (2020). High levels of pelagic plastic pollution within the surface waters of Lakes Erie and Ontario. *Journal of Great Lakes Research*. <https://doi.org/10.1016/j.jglr.2019.12.012>
- 7 Hoffman, M. J., Zhang, B., Lanerolle, L. W. J., & Brown, C. W. (2020). Evaluating the benefit and cost of assimilating satellite sea surface temperature into the NOAA Chesapeake Bay Operational Forecast System using 4DVAR and LETKF. *NOAA Technical Report*, 39. <https://repository.library.noaa.gov/view/noaa/23106>
- 8 Seville, E. v., Aliani, S., Law, K. L., Maximenko, N., Alsina, J., Bagaev, A., Bergmann, M., Chapron, B., Chubarenko, I., C  zar, A., Delandmeter, P., Egger, M., Fox-Kemper, B., Garaba, S. P., Goddijn-Murphy, L., Hardesty, D., Hoffman, M. J., Isobe, A., Jongedijk, C., ... Wichmann, D. (2020). The physical oceanography of the transport of floating marine debris. *Environmental Research Letters*. <https://doi.org/10.1088/1748-9326/ab6d7d>
- 9 Bachmann, C. M., Eon, R. S., Lapszynski, C. S., Badura, G. P., Vodacek, A., Hoffman, M. J., McKeown, D., Kremens, R. L., Richardson, M., Bauch, T., & Foote, M. (2019). A Low-Rate Video Approach to Hyperspectral Imaging of Dynamic Scenes. *Journal of Imaging*, 5(1), 6. <https://doi.org/10.3390/jimaging5010006>
- 10 Uzkent, B., Rangnekar, A., & Hoffman, M. J. (2019). Tracking in Aerial Hyperspectral Videos Using Deep Kernelized Correlation Filters. *IEEE Transactions on Geoscience and Remote Sensing*, 57(1), 449–461. <https://doi.org/10.1109/TGRS.2018.2856370>

- 11 Floyd, C. M., Hoffman, M., & Fokoue, E. (2019). Shot-by-shot stochastic modeling of individual tennis points. *Journal of Quantitative Analysis in Sports*, 0(0). <https://doi.org/10.1515/jqas-2018-0036>
- 12 Greybush, S. J., Kalnay, E., Wilson, R. J., Hoffman, R. N., Nehrkorn, T., Leidner, M., Eluszkiewicz, J., Gillespie, H. E., Wespel, M., Zhao, Y., Hoffman, M., Dudas, P., McConnochie, T., Kleinböhl, A., Kass, D., McCleese, D., & Miyoshi, T. (2019). The Ensemble Mars Atmosphere Reanalysis System (EMARS) Version 1.0. *Geoscience Data Journal*, 6(2), 137–150. <https://doi.org/10.1002/gdj3.77>
- 13 Lobyshev, F., & Hoffman, M. J. (2018). A morphological and geometric method for estimating the selectivity of gill nets. *Reviews in Fish Biology and Fisheries*, 28(4), 909–924. <https://doi.org/10.1007/s11160-018-9534-1>
- 14 LaVigne, N. S., Holt, N., Hoffman, M. J., & Cherry, E. M. (2017). Effects of model error on cardiac electrical wave state reconstruction using data assimilation. *Chaos: An Interdisciplinary Journal of Nonlinear Science*, 27(9), 093911. <https://doi.org/10.1063/1.4999603>
- 15 Hoffman, M. J., & Hittinger, E. (2017). Inventory and transport of plastic debris in the Laurentian Great Lakes. *Marine Pollution Bulletin*, 115(1), 273–281. <https://doi.org/10.1016/j.marpolbul.2016.11.061>
- 16 Hoffman, M. J., LaVigne, N. S., Scorse, S. T., Fenton, F. H., & Cherry, E. M. (2016). Reconstructing three-dimensional reentrant cardiac electrical wave dynamics using data assimilation. *Chaos: An Interdisciplinary Journal of Nonlinear Science*, 26(1), 013107. <https://doi.org/10.1063/1.4940238>
- 17 UzKent, B., Hoffman, M. J., & Vodacek, A. (2016). Integrating Hyperspectral Likelihoods in a Multidimensional Assignment Algorithm for Aerial Vehicle Tracking. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, PP(99), 1–9. <https://doi.org/10.1109/JSTARS.2016.2560220>
- 18 UzKent, B., Hoffman, M., Vodacek, A., & Chen, B. (2015). Feature Matching With an Adaptive Optical Sensor in a Ground Target Tracking System. *IEEE Sensors Journal*, 15(1), 510–519. <https://doi.org/10.1109/JSEN.2014.2346152>
- 19 Urquhart, E. A., Hoffman, M. J., Murphy, R. R., & Zaitchik, B. F. (2013). Geospatial interpolation of MODIS-derived salinity and temperature in the Chesapeake Bay. *Remote Sensing of Environment*, 135, 167–177. <https://doi.org/10.1016/j.rse.2013.03.034>
- 20 Greybush, S. J., Kalnay, E., Hoffman, M. J., & Wilson, R. J. (2013). Identifying Martian atmospheric instabilities and their physical origins using bred vectors. *Quarterly Journal of the Royal Meteorological Society*, 139(672), 639–653. <https://doi.org/10.1002/qj.1990>
- 21 Greybush, S. J., Wilson, R. J., Hoffman, R. N., Hoffman, M. J., Miyoshi, T., Ide, K., McConnochie, T., & Kalnay, E. (2012). Ensemble Kalman filter data assimilation of Thermal Emission Spectrometer temperature retrievals into a Mars GCM. *Journal of Geophysical Research: Planets*, 117(E11), E11008. <https://doi.org/10.1029/2012JE004097>
- 22 Hoffman, M. J., Miyoshi, T., Haine, T. W. N., Ide, K., Brown, C. W., & Murtugudde, R. (2012). An Advanced Data Assimilation System for the Chesapeake Bay: Performance Evaluation. *Journal of Atmospheric and Oceanic Technology*, 29(10), 1542–1557. <https://doi.org/10.1175/JTECH-D-11-00126.1>
- 23 Hoffman, M. J., Eluszkiewicz, J., Weisenstein, D., Uymin, G., & Moncet, J.-L. (2012). Assessment of Mars atmospheric temperature retrievals from the Thermal Emission Spectrometer radiances. *Icarus*, 220(2), 1031–1039. <https://doi.org/10.1016/j.icarus.2012.06.039>
- 24 Urquhart, E. A., Zaitchik, B. F., Hoffman, M. J., Guikema, S. D., & Geiger, E. F. (2012). Remotely sensed estimates of surface salinity in the Chesapeake Bay: A statistical approach. *Remote Sensing of Environment*, 123, 522–531. <https://doi.org/10.1016/j.rse.2012.04.008>
- 25 Hoffman, M. J., Greybush, S. J., John Wilson, R., Gyarmati, G., Hoffman, R. N., Kalnay, E., Ide, K., Kostelich, E. J., Miyoshi, T., & Szunyogh, I. (2010). An ensemble Kalman filter data assimilation system for the martian atmosphere: Implementation and simulation experiments. *Icarus*, 209(2), 470–481. <https://doi.org/10.1016/j.icarus.2010.03.034>
- 26 Hoffman, M. J., Kalnay, E., Carton, J. A., & Yang, S.-C. (2009). Use of breeding to detect and explain instabilities in the global ocean. *Geophysical Research Letters*, 36(12), L12608. <https://doi.org/10.1029/2009GL037729>

- 27 Gibbons, K. S., Hoffman, M. J., & Wootters, W. K. (2004). Discrete phase space based on finite fields. *Physical Review A*, 70(6), 062101. <https://doi.org/10.1103/PhysRevA.70.062101>

PEER-REVIEWED CONFERENCE PAPERS [11]

- 1 Mulhollan, Z., Rangnekar, A., Bauch, T., Hoffman, M. J., & Vodacek, A. (2020). Calibrated Vehicle Paint Signatures for Simulating Hyperspectral Imagery, 110–111. Retrieved December 16, 2020, from https://openaccess.thecvf.com/content_CVPRW_2020/html/w6/Mulhollan_Calibrated_Vehicle_Paint_Signatures_for_Simulating_Hyperspectral_Imagery_CVPRW_2020_paper.html
- 2 Mulhollan, Z., Rangnekar, A., Vodacek, A., & Hoffman, M. J. (2020). Occlusion Detection for Dynamic Adaptation. In F. Damera, E. Blasch, S. Ravela, & A. Aved (Eds.), *Dynamic Data Driven Application Systems* (pp. 337–344). Springer International Publishing. https://doi.org/10.1007/978-3-030-61725-7_39
- 3 Rangnekar, A., Ientilucci, E., Kanan, C., & Hoffman, M. J. (2020). Uncertainty Estimation for Semantic Segmentation of Hyperspectral Imagery. In F. Damera, E. Blasch, S. Ravela, & A. Aved (Eds.), *Dynamic Data Driven Application Systems* (pp. 163–170). Springer International Publishing. https://doi.org/10.1007/978-3-030-61725-7_20
- 4 Li, H., Pan, L., Lee, E. J., Li, Z., Hoffman, M. J., Vodacek, A., & Bhattacharyya, S. S. (2019). Hyperspectral Video Processing on Resource-Constrained Platforms [ISSN: 2158-6276]. *2019 10th Workshop on Hyperspectral Imaging and Signal Processing: Evolution in Remote Sensing (WHISPERS)*, 1–5. <https://doi.org/10.1109/WHISPERS.2019.8921138>
- 5 Rangnekar, A., & Hoffman, M. J. (2019). Learning representations to predict landslide occurrences and detect illegal mining across multiple domains. *Proceedings of the 36th International Conference on Machine Learning*. Retrieved December 17, 2020, from <https://www.climatechange.ai/papers/icml2019/43.html>
- 6 UzKent, B., Rangnekar, A., & Hoffman, M. J. (2017). Aerial Vehicle Tracking by Adaptive Fusion of Hyperspectral Likelihood Maps [ISSN: 2160-7516]. *2017 IEEE Conference on Computer Vision and Pattern Recognition Workshops (CVPRW)*, 233–242. <https://doi.org/10.1109/CVPRW.2017.35>
- 7 UzKent, B., Hoffman, M. J., & Vodacek, A. (2016). Real-Time Vehicle Tracking in Aerial Video Using Hyperspectral Features. *2016 IEEE Conference on Computer Vision and Pattern Recognition Workshops (CVPRW)*, 1443–1451. <https://doi.org/10.1109/CVPRW.2016.181>
- 8 UzKent, B., Hoffman, M. J., & Vodacek, A. (2015a). Efficient integration of spectral features for vehicle tracking utilizing an adaptive sensor. *9407, 940707–940707–10*. <https://doi.org/10.1117/12.2082266>
- 9 UzKent, B., Hoffman, M. J., & Vodacek, A. (2015b). Spectral Validation of Measurements in a Vehicle Tracking DDDAS. *Procedia Computer Science*, 51, 2493–2502. <https://doi.org/10.1016/j.procs.2015.05.358>
- 10 UzKent, B., Hoffman, M. J., Vodacek, A., Kerekes, J. P., & Chen, B. (2013). Feature Matching and Adaptive Prediction Models in an Object Tracking DDDAS. *Procedia Computer Science*, 18, 1939–1948. <https://doi.org/10.1016/j.procs.2013.05.363>
- 11 Vodacek, A., Kerekes, J. P., & Hoffman, M. J. (2012). Adaptive Optical Sensing in an Object Tracking DDDAS. *Procedia Computer Science*, 9, 1159–1166. <https://doi.org/10.1016/j.procs.2012.04.125>

COMMENTARY/POPULAR PRESS [2]

- 1 Parthasarathy, A., Tyler, A. C., Hoffman, M. J., Savka, M. A., & Hudson, A. O. (2019). Is Plastic Pollution in Aquatic and Terrestrial Environments a Driver for the Transmission of Pathogens and the Evolution of Antibiotic Resistance? *Environmental Science & Technology*, 53(4), 1744–1745. <https://doi.org/10.1021/acs.est.8b07287>
- 2 Hoffman, M. J., & Tyler, C. (2018). Tons of plastic trash enter the Great Lakes every year – where does it go? *The Conversation*. Retrieved January 15, 2020, from <http://theconversation.com/tons-of-plastic-trash-enter-the-great-lakes-every-year-where-does-it-go-100423>

CONFERENCE PAPERS [3]

- 1 Li, H., Pan, L., Hoffman, M. J., Vodacek, A., & Bhattacharyya, S. S. (2018). Design methods for hyperspectral video processing on resource-constrained platforms. *Proceedings of the Hyperspectral Imaging & Applications Conference*, 2.
- 2 Uz Kent, B., Hoffman, M. J., Vodacek, A., & Chen, B. (2015). Background image understanding and adaptive imaging for vehicle tracking. *Airborne Intelligence, Surveillance, Reconnaissance (ISR) Systems and Applications XII*, 9460, 94600F. <https://doi.org/10.1117/12.2177494>
- 3 Uz Kent, B., Hoffman, M. J., Cherry, E., & Cahill, N. (2014). 3-D MRI cardiac segmentation using graph cuts. *2014 IEEE Western New York Image and Signal Processing Workshop (WNYISPW)*, 47–51. <https://doi.org/10.1109/WNYIPW.2014.6999484>

Thesis Students

Current	Juliette Daily , Mathematical Modeling	<i>Ph.D.</i>
Current	Aneesh Rangnekar , Imaging Science	<i>Ph.D.</i>
2020	Emily Thomas , Applied and Computational Mathematics	<i>M.S.</i>
2019	Rebecca Knauff , Applied and Computational Mathematics	<i>M.S.</i>
2017	Calvin Floyd , Applied and Computational Mathematics	<i>M.S.</i>
2016	Burak Uz Kent , Imaging Science	<i>Ph.D.</i>
2016	Derek Cabone , Applied and Computational Mathematics	<i>B.S./M.S.</i>
2014	Stephen Scorse , Applied and Computational Mathematics	<i>B.S./M.S.</i>
2013	Jessica Beiter , Applied and Computational Mathematics	<i>B.S./M.S.</i>

Research Students

2020	Kelly Rogers , Applied Mathematics	<i>Summer Research</i>
2018-2019	Samuel Wohl , Physics	<i>Capstone</i>
2013	Derek Cabone , Applied Mathematics	<i>Summer Research</i>
2013	Joel Newbolt , Physics	<i>Summer Research</i>
2013	Cesar Reynoso , Biomedical Engineering	<i>Semester Research</i>

Journals/Programs Reviewed For

NSF Graduate Research Fellowship Program
 PLOS ONE
 Remote Sensing of the Environment
 IEEE Sensors
 AFOSR DDDAS Program
 Journal of Climate
 Journal of Geophysical Research-Oceans
 Journal of Geophysical Research-Planets
 Geoscientific Model Development
 Icarus
 Weather and Forecasting
 Remote Sensing
 Sensors
 Tellus A
 Monthly Weather Review
 NSF Arctic Science Division
 Journal of Great Lakes Research
 Marine Pollution Bulletin

Invited Lectures

2020	Speaker , U. Toronto Department of Ecology and Environmental Biology	Toronto, Canada
2020	Plenary Speaker , Dynamics Days	Hartford, CT
2019	Speaker , RIT Engineers for a Sustainable World Winter Banquet	Rochester, NY
2019	Keynote Speaker , Hobart and William Smith Hackathon	Geneva, NY
2019	Speaker , University of Rochester Sustainability Series	Rochester, NY
2019	Panelist , Great Lakes Circular Economy Forum	Toronto, Canada
2019	Science on the Edge Lecture , Rochester Museum and Science Center	Rochester, NY
2018	Keynote Speaker , Texas Undergraduate Mathematics Conference	Nacogdoches, TX
2018	Speaker , University of Rochester Sustainability Series	Rochester, NY
2017	Keynote Speaker , RIT Engineers for a Sustainable World Winter Banquet	Rochester, NY
2017	Speaker , University of Buffalo Applied Math Seminar	Buffalo, NY
2017	Speaker , University of Rochester Sustainability Series	Rochester, NY
2017	Speaker , Rochester Science Cafe	Rochester, NY
2016	Speaker , NOAA Great Lakes Environmental Research Laboratory Seminar	Ann Arbor, MI
2015	Speaker , NOAA Joint Polar Satellite System Seminar	Silver Spring, MD
2013	Speaker , IMA Predictability in Earth Systems Processes Hot Topic Workshop	Minneapolis, MN
2013	Speaker , SMS Conversations in Mathematics Seminar	Rochester, NY
2013	Speaker , Houghton College Science and Math Seminar	Houghton, NY
2012	Speaker , University of Buffalo Environmental Engineering & Science Seminar	Buffalo, NY
2012	Speaker , RIT Astrophysical Sciences and Technology Colloquium	Rochester, NY
2011	Speaker , RIT Cetner for Imaging Sciences Colloquium	Rochester, NY
2010	Speaker , Williams College Mathematics Department Faculty Seminar	Williamstown, MA
2010	Speaker , Johns Hopkins Center for Environmental and Applied Fluid Mechanics Seminar	Baltimore, MD
2010	Speaker , Mathematics Department Colloquium, Stephen F. Austin University	Nacogdoches, TX
2010	Speaker , Mathematics Department Colloquium, University of Vermont	Burlington, VT
2009	Speaker , Center for Weather Forecasts and Climate Studies (CPTEC) Seminar	Cachoeira Paulista, Brazil
2009	Speaker , University of Maryland Mathematics Graduation Conference	College Park, MD
2008	Speaker , University of São Paulo Meteorology Department Seminar	São Paulo, Brazil
2008	Speaker , Center for Weather Forecasts and Climate Studies (CPTEC) Seminar	Cachoeira Paulista, Brazil
2008	Speaker , National Institute of Space Studies (INPE) Seminar	São Jose dos Campos, Brazil

Contributed Talks _____

2020	AFOSR DDDAS PI Meeting	Online
2019	International Conference on Great Lakes Research	Brockport, NY
2019	AFOSR DDDAS PI Meeting	Dayton, OH
2019	AMS Joint Meetings	Baltimore, MD
2018	SIAM Education SIAG Conference	Portland, OR
2016	HABs State of the Science Webinar Series	Webinar
2016	SIAM Conference on Life Sciences	Boston, MA
2016	SIAM Annual Meeting	Boston, MA
2017	AFOSR DDDAS PI Meeting	Dayton, OH
2016	Summer Math Institute	Rochester, NY
2016	International Conference on Great Lakes Research	Guelph, Canada
2016	International Conference on Great Lakes Research	Guelph, Canada
2016	AFOSR DDDAS PI Meeting	Washington, DC
2015	SPIE Defense and Commercial Sensing	Baltimore, MD
2013	New York Conference on Applied Mathematics	Troy, NY
2013	MathFest	Hartford, CT
2013	RIT COS Faculty Research Symposium	Rochester, NY
2013	Summer Math Institute	Rochester, NY
2012	Chesapeake Bay Modeling Symposium	Annapolis, MD
2012	AGU Ocean Sciences Meeting	Salt Lake City, UT
2012	American Mathematical Society Annual Meeting	Boston, MA
2011	Mars Atmosphere Workshop: Modeling And Observations	Paris, France
2011	SIAM Dynamical Systems Conference	Snowbird, UT
2011	CEaFM/Burger's Symposium	Baltimore, MD
2011	American Meteorological Society Annual Meeting	Seattle, WA
2010	Division for Planetary Science Annual Meeting	Pasadena, CA
2010	Atmosphere/Ocean Days	College Park, MD
2010	Chesapeake Modeling Symposium	Annapolis, MD
2010	American Meteorological Society Annual Meeting	Atlanta, GA
2009	Division for Planetary Science Annual Meeting	Fajardo, PR
2009	CEAFM/Burger's Symposium	Baltimore, MD
2008	AMSC Student Seminar	College Park, MD
2008	SMALL 10th Anniversary Mini Conference	Williamstown, MA
2008	Chesapeake Modeling Symposium	Annapolis, MD
2007	AMSC Student Seminar	College Park, MD
2007	International Union of Geodesy and Geophysics	Perugia, Italy

Posters

2018	6th International Marine Debris Conference	San Diego, CA
2015	Dynamics Days	Houston, TX
2014	AGU Ocean Sciences Meeting	Honolulu, HI
2013	MathFest	Hartford, CT
2010	Division for Planetary Sciences Annual Meeting	Pasadena, CA
2008	American Geophysical Union Annual Meeting	San Francisco, CA
2007	American Meteorological Society Annual Meeting	San Antonio, TX
2006	American Geophysical Union Annual Meeting	San Francisco, CA

Workshops

2019	Floating Litter and its Oceanic Transport Analysis and Modelling (FLOTSAM) , Scientific Committee on Oceanic Research	Utrecht, Netherlands
2013	Predictability in Earth Systems Processes Hot Topic Workshop , Institute for Mathematics and its Applications	Minneapolis, MN
2015	Integrated analysis for agricultural management strategies , American Institute of Mathematics	Palo Alto, CA
2010	Advanced School on Complexity, Adaptation, and Emergence in Marine Ecosystems , International Centre for Theoretical Physics	Trieste, Italy
2007	MSRI Symposium on Climate Change: From Global Models to Local Action , Mathematical Sciences Research Institute	Berkeley, CA

Professional Activities/Service

2020	Organizer , Session on Microplastic Pollution at IAGLR	Online
2020	Organizer , Session on Data Assimilation and Coupled Models at IAGLR	Online
2019	Organizer , RIT Sports Analytics Conference	Rochester, NY
2019	Organizer , Session on Microplastic Pollution at IAGLR	Brockport, NY
2019	Organizer , Session on Data Assimilation and Coupled Models at IAGLR	Brockport, NY
2018	Organizer , RIT Sports Analytics Conference	Rochester, NY
2018	Organizer , Session on Data Assimilation and Coupled Models at IAGLR	Toronto, Canada
2018	Organizer , Session on Mathematics of Planet Earth Education at SIAM ED	Portland, OR
2017	Organizer , RIT Hockey Analytics Conference	Rochester, NY
2017	Organizer , Session on Data Assimilation and Coupled Models at IAGLR	Detroit, MI
2016	Organizer , RIT Hockey Analytics Conference	Rochester, NY
2015	Organizer , RIT Hockey Analytics Conference	Rochester, NY
2013	Organizer , Invited Paper Session on Climate and Geophysical Modeling at MathFest	Hartford, CT
2008-2009	President , AMSC Student Council	Univ. of Maryland
2008-2009	President , SIAM Student Chapter	Univ. of Maryland
2008	Organizer , Math Department Graduation Conference	Univ. of Maryland
2007-2008	Board Member , AMSC Student Council	Univ. of Maryland
2007	Organizer , Math Department Graduation Conference	Univ. of Maryland

Honors & Awards

2015	Finalist , Richard and Virginia Eisenhart Provost's Award for Excellence in Teaching	RIT
2015	Fun Outsize the Classroom Award , College of Science	RIT
2014	Rising Star Award , College of Science	RIT
2013	Finalist , Richard and Virginia Eisenhart Provost's Award for Excellence in Teaching	RIT

University Service

2018-2019	Chair , Faculty Search Committee (2 positions)	SMS
2018-2019	Member , Faculty Search Committee	GSOLS
2018-2019	Member , Department Head Search Committee	SMS
2017-2018	Chair , Faculty Search Committee	SMS
2016-2019	Co-Chair , Strategic Planning Committee	SMS
2016-2019	Director , MS in Applied and Computational Mathematics	SMS
2016-2019	Member , Graduate Curriculum Committee	SMS
2016-2019	Member , Graduate Curriculum Committee	COS
2016-2017	Member , Faculty Search Committee	CIS
2014-2017	Member , Undergraduate Curriculum Committee	SMS
2013-2019	Founder and Organizer , Conversations in Climate Change Series	RIT
2013-2018	Co-Head , PiRIT Student Mathematics Club	SMS
2013-2017	Co-Organizer , PiRIT ImagineRIT Exhibits	SMS
2013-2014	Member , Faculty Search Committee	SMS
2012-2013	Member , Technology in the Classroom Committee	SMS
2012-2015	Chair , Ph.D. in Mathematical Modeling Development Committee	SMS
2012-2013	Co-Organizer , RIT Center for Applied and Computational Mathematics Seminar	SMS

Technical Skills

Programming	FORTRAN 90/95/03, MATLAB, Python, \LaTeX Shell Scripts
Languages	English, Proficient in Portuguese and Spanish
OS Platform	WINDOWS, LINUX