Matthew J. **Hoffman**

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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*

Directory, 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 Intedisciplinary Teacing 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 [26]

1. 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

2. 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

3. 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

4. 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

5. 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

6. 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

7. Sebille, E. v., Aliani, S., Law, K. L., Maximenko, N., Alsina, J., Bagaev, A., Bergmann, M., Chapron, B., Chubarenko, I., Cózar, 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

8. 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

9. 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

10. 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

11. Greybush, S. J., Kalnay, E., Wilson, R. J., Hoffman, R. N., Nehrkorn, T., Leidner, M., Eluszkiewicz, J., Gillespie, H. E., Wespetal, 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

12. Lobyrev, 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

13. 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

14. 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

15. 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

16. 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

17. 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

18. 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

19. 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

20. 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

21. 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

22. 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

23. 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

24. 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

25. 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

26. 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. Darema, 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. Darema, 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 Uzkent, 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 Uzkent, 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	*Ph.D.*
Current	**Aneesh Rangnekar**, Imaging Science	*Ph.D.*
2020	**Emily Thomas**, Applied and Computational Mathematics	*M.S.*
2019	**Rebecca Knauff**, Applied and Computational Mathematics	*M.S.*
2017	**Calvin Floyd**, Applied and Computational Mathematics	*M.S.*
2016	**Burak Uzkent**, Imaging Science	*Ph.D.*
2016	**Derek Cabone**, Applied and Computational Mathematics	*B.S./M.S.*
2014	**Stephen Scorse**, Applied and Computational Mathematics	*B.S./M.S.*
2013	**Jessica Beiter**, Applied and Computational Mathematics	*B.S./M.S.*

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	*Cachoiera 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	*Cachoiera 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 Microlastic 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 Microlastic 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 Studednt 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 Studednt 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