

# JONATHAN W. CHIPMAN

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**EDUCATION** Ph.D. (Environmental Monitoring) University of Wisconsin-Madison, 2001  
Dissertation: *Topographic mapping of forested areas in the western Great Lakes region using spaceborne synthetic aperture radar interferometry*  
M.S. (Environmental Monitoring) University of Wisconsin-Madison, 1996  
A.B. (Music), Dartmouth College, 1990

**EXPERTISE** Remote sensing, geographic information science, spatial analysis, cartography, geovisualization

## ACADEMIC APPOINTMENTS

2007-present Director, Citrin Family GIS/Applied Spatial Analysis Laboratory, Dartmouth College  
Adjunct appointments in Geography and Earth Sciences departments  
Steering committee, Quantitative Social Sciences program  
2004-2007 Assistant Scientist, Environmental Remote Sensing Center, Univ. of Wisconsin-Madison  
2001-2004 Research Associate, Center for Limnology, University of Wisconsin-Madison

## TEACHING

Current GEOG 59/EARS 77/EARS177: Environmental Applications of GIS  
GEOG 54: Geovisualization  
Contributions to or previously taught GEOG 1, 3, 33, 35, 51, 85, EARS 16, 45/46/47, 65, 76, 87, ENVS 50 and 40/42/84.  
Recipient of the University of Wisconsin's Excellence in Teaching Award, 1999.

## RECENT RESEARCH AWARDS AND GRANTS (PAST 5 YEARS)

Principal investigator (PI). *A Virtual-Reality Node for Interdisciplinary 3D Visualization in the Spatial Sciences*.  
Dartmouth College Neukom Institute CompX award, 2019-2020; \$21,586 + \$12,106 supplementary award.  
Co-PI, with lead PI Christopher Sneddon. *Hydropower Development and Knowledge Controversies in Transboundary Rivers*. Arthur L. Irving Institute for Energy and Society award, 2019 (accepted), \$19,101.  
Co-Investigator (co-I), with PI Margaret Karagas. *A Prospective Study of Critical Environmental Exposures in Formative Early Life that Impact Lifelong Health in Rural US Children*. NIH Epidemiology program, award UG3OD023275.  
2018-2019 (current) to 2023 (pending); \$5,254,924 (current) + \$21,022,498 (pending).  
Other personnel, with PI Meredith Kelly. *Assessing the response of tropical temperature to global forcings since the Last Glacial Maximum*. National Science Foundation (NSF) P2C2 program, award 2017-2020; \$376,997.  
Co-I, with PI Jonathan Winter. *Expansion of Lyme Disease in the Northeast: Climate, Land Use, and Ticks*. Dartmouth College Neukom Institute CompX award, 2016-2017; \$24,721.  
Co-I, with PI Xun Shi. *Maintaining Environmental Flows and Sustainable Water Use Strategies in a Rapidly Developing Watershed: Tarim Basin, China*. Porter Family Foundation, 2013-2017; \$50,000.  
Other personnel, with PI Christopher Sneddon. *Environmental Conflicts and the Social Dimensions of Dam Removal*. NSF Geography Program, award 2012-2015; \$257,732.

## PUBLICATIONS: BOOKS

Lillesand, T.M., R.W. Kiefer, and J.W. Chipman. 2015. *Remote Sensing and Image Interpretation*, 7th edition. John Wiley & Sons, NY. 720 p. plus online appendices. Co-author on 5<sup>th</sup> & 6<sup>th</sup> editions, lead author on 7<sup>th</sup>.  
Chipman, J.W., L.Olmanson, and A.Gitelson. 2009. *Remote Sensing Methods for Lake Management*. North American Lake Management Society, Madison, WI. 126 p.

## PUBLICATIONS: RECENT PEER-REVIEWED JOURNAL ARTICLES (PAST 5 YEARS)

Chipman, J.W. 2019. A multisensor approach to satellite monitoring of trends in lake area, water level and volume. *Remote Sensing*, 11(2):158. <https://doi.org/10.3390/rs11020158>.  
Finger Higgs, R., J.W. Chipman, D. Lutz, L. Culler, R. Virginia, L. Ogden. 2019. Changing lake dynamics indicate a drier Arctic in western Greenland. *Journal of Geophysical Research-Biogeosciences*, 124. <https://doi.org/10.1029/2018JG004879>.

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- Fleisch, A., L. Rokoff, E. Garshick, S. Grady, J.W. Chipman, E. Baker, P. Koutrakis, M. Karagas. 2019. Residential wood stove use and indoor exposure to PM<sub>2.5</sub> and its components in northern New England. *Journal of Exposure Science and Environmental Epidemiology*, in press.
- Wallace, D., V. Ratti, A. Kodali, J. Winter, M. Ayres, J.W. Chipman, C. Aoki, E. Osterberg, C. Silvanic, T. Partridge, and M. Webb. 2019. The effect of rising temperature on Lyme disease: *Ixodes scapularis* population dynamics and *Borrelia burgdorferi* transmission and prevalence. *Canadian Journal of Infectious Diseases and Medical Microbiology*, special issue on “Climate and vector-borne pathogens: challenges of the present and of the future”, in press.
- Winter, J., F. Bowen, T. Partridge, J.W. Chipman. 2019. Future extreme event risk in the rural northeastern United States. *Annals of the American Association of Geographers*. <https://doi.org/10.1080/24694452.2018.1540920>.
- Heindel, R., J.W. Chipman, J. Dietrich, R. Virginia. 2018. Quantifying rates of soil deflation with Structure-from-Motion photogrammetry in West Greenland. *Arctic, Antarctic, and Alpine Research*, 50(1): S100012. <https://doi.org/10.1080/15230430.2017.1415852>.
- Kopec, B., X. Feng, E. Posmentier, J.W. Chipman, R. Virginia. 2018. Use of principal component analysis to extract environmental information from lake water isotopic compositions. *Limnology and Oceanography* 63(3): 1340-1354. <https://doi.org/10.1002/lno.10776>.
- Li, B., Y. Chen, J.W. Chipman, X. Shi. 2018. Why does the runoff in Hotan River show a slight decreased trend in northwestern China? *Atmospheric Sciences Letters* 19(1). <https://doi.org/10.1002/asl.800>.
- Spera, S., J. Winter, J.W. Chipman. 2018. Evaluation of agricultural land cover representations on regional climate model simulations in the Brazilian Cerrado. *Journal of Geophysical Research-Atmospheres*, 123(10): 5163-5176. <https://doi.org/10.1029/2017JD027989>.
- Schild, K., R. Hawley, J.W. Chipman, D. Benn. 2017. Quantifying suspended sediment concentration in sub-glacial sediment plumes discharging from two Svalbard tidewater glaciers using Landsat-8 and in situ measurements. *International Journal of Remote Sensing* 38: 6865-6881. <https://doi.org/10.1080/01431161.2017.1365388>.
- Chipman, J.W., X. Shi, F. Magilligan, Y. Chen, B. Li. 2016. Impacts of land cover change and water management practices on the Tarim and Konqi river systems, Xinjiang, China. *Journal of Applied Remote Sensing*, 0001;10(4):046020. <https://doi.org/10.1117/1.JRS.10.046020>.
- Wallace, D., O. Prosper, J. Savos, A. Dunham, J.W. Chipman, X. Shi, B. Ndenga, A. Githeko. 2016. Modeling the response of *Anopheles gambiae* populations in the Kenya Highlands to a rise in mean annual temperature. *Journal of Medical Entomology*, <https://doi.org/10.1093/jme/tjw174>.
- Magilligan, F., B. Graber, K. Nislow, J.W. Chipman, C. Sneddon, C. Fox. 2016. River restoration by dam removal: enhancing connectivity at watershed scales. *Elementa: Science of the Anthropocene*, 4: 000108. <https://doi.org/10.12952/journal.elementa.000108>.
- Heindel, R., J.W. Chipman, R. Virginia. 2015. The spatial distribution and ecological impacts of aeolian soil erosion in Kangerlussuaq, West Greenland. *Annals of the Association of American Geographers*, 105(5): 875-890. <https://doi.org/10.1080/00045608.2015.1059176>.

#### **MENTORING OF POSTDOCTORAL SCHOLARS**

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2019-2021	Danielle Poole (Neukom Fellows program, Dartmouth College)
2017-2018	Stephanie Spera (Neukom Fellows program, Dartmouth College)
2012-2014	Jason Herrmann (Neukom Fellows program, Dartmouth College)

#### **OTHER PROFESSIONAL ACTIVITIES**

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- Author or co-author of over 60 presentations at professional meetings in the US and Europe, and co-leader of workshops at annual meetings of the North American Lake Management Society.
- Reviewer for *Annals of the American Association of Geographers*, *International Journal of Remote Sensing*, *Remote Sensing*, *Remote Sensing of Environment*, *Photogrammetric Engineering & Remote Sensing*, and other journals.
- Proposal reviews for NASA (Terrestrial Hydrology Program, Pathfinder Program, and Ocean Biology & Biogeochemistry Program), and the NSF Directorate of Social, Behavioral and Economic Sciences.