

Asia L. Downtin
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Education

- 2017 Ph.D. in Geography (expected)
University of Delaware, Newark, Delaware
Dissertation: *An investigation into the effects of forest fragment size, shape, and structure on rainfall redistribution and solute flux within a city and along an urban-to-rural gradient*
Advisor: Professor Delphis Levia
- 2012 M.S. in Geography
University of Delaware, Newark, Delaware
M.S. thesis: *Developing a Drought Climatology for Delaware: 1948 - 2005*
Advisor: Professor David Legates
- 2009 B.S. in Meteorology (minor in Mathematics)
State University of New York College at Oneonta, Oneonta, New York

Research, Teaching, and Related Professional Experience

- 2015 Adjunct Faculty (Instructor of Environmental Statistics)
Wesley College, Dover, Delaware, USA
Taught graduate level course in univariate and multivariate statistical techniques for applications in environmental science-based research.
- 2013-2014 Graduate Research Assistant (summer months), Water Resources Agency
University of Delaware, Newark, Delaware, USA
Supervised undergraduate research assistants in the collection, synthesis, and analysis of qualitative stream network data from protected (National Parks Service land) and urbanized watersheds. Conducted environmental assessments and drafted watershed implementation plan for urbanized watershed in Wilmington, DE.
- 2011-2013 Graduate Assistant, Delaware Geographic Alliance
University of Delaware, Newark, Delaware, USA
Aided in development of online map gallery and educational video series used to increase access to geographic information for K-12 educators. Produced interactive geography-based materials for use in large-scale educational outreach events designed for students in grades K-8.
- 2012 Intern for Urban Conservation Research, The Nature Conservancy (TNC) –
Delaware Office
Wilmington, Delaware, USA
Investigated and identified contemporary urban conservation practices and funding models that indicated potential for successful adoption and

implementation in metropolitan Wilmington, DE. Compiled thorough report detailing findings and suggesting potential plans of action for TNC.

- 2008 Undergraduate Student Researcher, Geoscience Research at Storm Peak (GRASP) Program
Storm Peak Laboratory (SPL), Steamboat Springs, Colorado, USA
Utilized Hybrid Single Particle Lagrangian Integrated Trajectory Model (HYSPLIT) and Moderate-Resolution Imaging Spectroradiometer (MODIS) satellite data to identify source and cause of anomalous peaks in gaseous elemental mercury as detected by a Tekran 2537A mercury analyzer at SPL.

Publications

Refereed Publications

Siegert, C.M., Levia, D.F., Hudson, S.A., **Downtin, A.L.**, Zhang, F. and Mitchell, M.J. 2016. Small-scale topographic variability influences tree species distribution and canopy throughfall partitioning in a temperate deciduous forest. *Forest Ecology and Management* 359: 109-117. [DOI: 10.1016/j.foreco. 2015.09.028]

Publications in Review

Schooling, J.T., Levia, D.F., Carlyle-Moses, D.E., **Downtin, A.L.**, Brewer, S.E.; Donkor, K.K., Borden, S.A., Grzybowski, A.A. Tree size and flux-based stemflow enrichment ratios: a preliminary investigation of eleven urban park trees in British Columbia, Canada. *Urban Forestry and Urban Greening (in review)*.

Other Publications

Cruz-Ortiz, C., **Downtin, A.**, Miller, K., Rubino, E., Brown, J., 2014. Plan for Rocky Run's environmental protection: A watershed implementation plan for the Rocky Run sub-basin. (White paper used by The Nature Conservancy Delaware and the University of Delaware Water Resources Agency).

Conference and Workshop Presentations

- 2015 Seigert, C.M., Levia, D.F., **Downtin, A.L.**, Hudson, S.A., Linhoss, A. *Using Sensitivity Analysis and Fine-Scale Field Measurements to Understand How Canopy Interception Models Function*. 2015 Annual Meeting of the American Geophysical Union. San Francisco, California, USA. (Poster Presentation)
- 2015 **Downtin, A.L.** and D.F. Levia. *Employing the use of a dense monitoring network to quantify and characterize spatial variability of hydrologic and solute flux in urban forest fragments*. UrbanRain15: 10th International Workshop on Precipitation in Urban Areas. Pontresina, Switzerland. (Poster Presentation)
- 2015 **Downtin, A.L.** and D.F. Levia. *Investigating spatial variability in the hydrology and biogeochemistry of Wilmington, DE's urban forest: preliminary results*. Consortium for Climate Risk in the Urban Northeast Seminar. Drexel University, Philadelphia, Pennsylvania, USA. (Oral Presentation)
- 2015 **Downtin, A.L.** and D.F. Levia. *Assessing the Hydrological Ecosystem Services of Metropolitan Wilmington, Delaware's Urban Forest: Initial Findings from in-situ*

- Observations*. 2015 Annual Meeting of the Association of American Geographers. Chicago, Illinois, USA. (Illustrated Paper Presentation)
- 2014 **Downtin, A.L.** and D.F. Levia. *Assessing the hydrological ecosystem services of Wilmington, DE's urban forest: Initial findings from in-situ observations*. 2014 AWRA Annual Water Resources Conference. Tyson's Corner, Virginia, USA. (Poster Presentation)
- 2013 **Downtin, A.L.**, Cruz-Ortiz, C.S., Miller, K. *Using Problem-Based Learning to Enhance Environmental Education for Secondary School Students*. 3rd Annual Symposium of the Delaware Section of the American Water Resources Association. Dover, Delaware, USA. (Poster Presentation).
- 2013 **Downtin, A.L.**, Legates, M., Legates, D.R. *Teaching Physical Geography through Digital Media: An Enhancement for 6th Grade Geography Education in Delaware*. 7th Annual Delaware Space Grant Consortium Research Symposium. Newark, Delaware, USA. (Poster Presentation)
- 2013 **Downtin, A.L.** and D.R. Legates. *On Developing a Drought Climatology for Delaware: Related Synoptic Patterns*. 93rd Annual Meeting of the American Meteorological Society. Austin, Texas, USA. (Poster Presentation).
- 2012 **Downtin, A.L.** *Securing Clean Drinking Waters for Cities, Using Urban Greening and Headwaters Conservation: A Wilmington, Delaware Case Study*. 2012 Annual Meeting of the Association of American Geographers Middle States Division. Shippensburg, Pennsylvania, USA. (Oral Presentation)
- 2012 **Downtin, A.L.** and D.R. Legates. *On Developing a Drought Climatology for Delaware: Related Changes in Atmospheric Circulation Patterns*. University of Delaware 2nd Annual Graduate Forum. Newark, Delaware, USA. (Oral Presentation)
- 2012 **Downtin, A.L.** *Increasing the Accessibility of Geographic Information for Delaware's K-12 Educators*. 6th Annual Delaware Space Grant Consortium Research Symposium. Newark, Delaware, USA. (Oral Presentation)
- 2011 **Downtin, A.L.** and D.R. Legates. *An Investigation into Factors Responsible for Drought Occurrence in Delaware*. 2011 Symposium on Data Driven Approaches to Drought. West Lafayette, Indiana, USA. (Poster Presentation)

Educational Outreach Presentations

- 2016 Downtin, A.L. Seeing the forest through the trees: Understanding more about how Wilmington's forests work one tree at a time. Part of the "Science Education at Woodlawn Library" outreach series. Wilmington, Delaware, USA.

Research Grants and Scholarships

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| 2015 | \$6,033 | Gates Millennium Scholars Program Educational Support Award |
| 2015 | \$750 | Dr. John R. Mather Graduate Research Fellowship |

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2015	\$475	University of Delaware Professional Development Award
2015	\$15,513	National Science Foundation. Geospatial and Social Sciences. (Ref. No.BCS 1459116). Doctoral Dissertation Research: Effects of Forest Fragment Size, Shape, and Structure on Rainfall Redistribution and Solute Flux in Urban Settings.
2014	\$500	American Water Resources Association, Richard A. Herbert Graduate Scholarship
2014	\$750	Dr. John R. Mather Graduate Research Fellowship
2013	\$750	Dr. John R. Mather Graduate Research Fellowship

Graduate Fellowships and Awards

2015-2016	University of Delaware Dissertation Fellowship
2013-2015	University of Delaware Graduate Scholars Award
2011-2013	Delaware Space Grant Award (funded assistantship with Delaware Geographic Alliance)
2009-2011	University of Delaware Competitive University Fellow Award

Honors and Awards

2016	Delaware Section of the American Water Resources Association 2015 Special Recognition Award
2005-Present	Scholar, Gates Millennium Scholars Program
2015	2015 American Water Resources Association, National Winner, Outstanding Student Chapter Award (awarded during time in which I served as President of the University of Delaware Student Chapter)
2009	Philo C. Wilson Outstanding Student Senior Award (awarded by State University of New York College at Oneonta, Department of Earth Sciences)

Service to the University, Department, and Community

University of Delaware

2015-Present	Member, Delaware Water Resources Center Advisory Panel
2015	Graduate Representative, Interview Committee for Vice President and General Counsel

Department of Geography

2015-Present	Graduate Student Representative, Department of Geography Seminar Series Organizational Committee
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CV, Asia L. Downtin

- 2013-2014 Department Representative, College of Earth, Ocean, and Environment Graduate Student Council
- 2013-2014 Graduate Student Representative to Geography Department Faculty
- 2010-2012 Geography Department Representative for Campus Water Resources-Based Educational Outreach Events

**Community
2016**

- Judge, National Geographic Bee, Delaware State Competition
- 2013-Present Mentor, City of Wilmington, Delaware Green Jobs Program
- 2013-2014 Mentor, The Nature Conservancy Delaware Leaders for Environmental Action in the Future Program
- 2011 Water Resources Instructor, What in the World? K-5 Educational Outreach Program for Newark, Delaware Public Schools

Campus Leadership

- 2012-2015 Member, Executive Board, University of Delaware Black Graduate Student Association. Offices held: President (2014-2015), Vice President (2013-2014), Programming Chair (2012-2013)
- 2010-2015 Member, Executive Board, University of Delaware Student Chapter of the American Water Resources Association. Offices held: President (2012-2015), Vice President (2011-2012), Secretary (2010-2011)
- 2006-2007, 2008-2009 Mentor, State University of New York College at Oneonta's African American, Latino/a, Asian, Native American (AALANA) Mentoring Program
- 2006-2008 Member, Executive Board, Meteorology Club, State University of New York College at Oneonta. Office held: Vice President

Professional Affiliations

American Water Resources Association
Association of American Geographers
Delaware Section of the American Water Resources Association
International Association of Hydrological Sciences

Computational Skills

Basic Programming in R, Fortran
ArcGIS (Moderate)
Microsoft Office Suite (Proficient)

Additional Languages

Moderate Conversational Spanish