

## CURRICULUM VITAE

**Delphis F. Levia, Jr.**

**(ORCID #: 0000-0002-7443-6523)**

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### OFFICE ADDRESS

Department of Geography & Spatial Sciences  
University of Delaware  
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### EDUCATION

Clark University, Worcester, MA  
Ph.D. in Geography (2000)  
**Fields of Expertise:** forest hydrology and biogeochemistry, biometeorology, forest ecology, bioimaging and microscopy, snow-vegetation interactions, snow chemistry, biomechanics, field methods and instrumentation, land degradation, environmental assessment  
**Ph.D. dissertation:** *Winter stemflow leaching from deciduous canopy trees in relation to meteorological conditions and canopy structure*  
**Advisor:** Professor Stanley R. Herwitz

University of Massachusetts, Amherst, MA  
M.S. in Geography (1996)  
**Fields of Expertise:** natural hazards, geomorphology  
**M.S. thesis:** *The perception of floods associated with storm surges among the citizens of Scituate, Massachusetts*  
**Advisor:** Professor David E. Alexander

Clark University, Worcester, MA  
B.A. in Geography, *summa cum laude* (1994)  
**Senior thesis:** *Mid-winter stemflow drainage from bigtooth aspen*

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### ACADEMIC APPOINTMENTS

Professor of Ecohydrology (2012- pr)  
Primary Appointment, Dept. of Geography & Spatial Sciences  
Joint Appt., Dept. of Plant & Soil Sciences (2006-pr)  
Joint Appt., Dept. of Civil, Construction, and Environmental Engineering (2022-pr)  
University of Delaware, Newark, DE

Guest Professor (October 2025- March 2026)  
Faculty of Agriculture  
Tokyo University of Agriculture and Technology  
Fuchu, Tokyo, Japan

Distinguished Visiting Fellow (July/August 2023)  
Institute of Advanced Studies (IAS)  
University of Birmingham  
Birmingham, United Kingdom

Humboldt Fellow & Guest Professor (Nov/Dec 2022, sabbatical)  
Chemisch-Geowissenschaftliche Fakultät  
Friedrich Schiller Universität Jena  
Jena, Thuringia, Germany

JSPS Invitational Research Fellow (Jun/Jul 2016)  
Forestry and Forest Products Research Institute (FFPRI)  
Tsukuba, Ibaraki Prefecture, Japan

Guest Professor (May-Aug 2014)  
Hydrospheric Atmospheric Research Center  
Nagoya University  
Nagoya, Aichi Prefecture, Japan

Humboldt Fellow & Guest Professor (2012, sabbatical)  
Chemisch-Geowissenschaftliche Fakultät  
Friedrich Schiller Universität Jena  
Jena, Thuringia, Germany

Associate Professor (2009-2012)  
University of Delaware, Newark, DE

Assistant Professor (2003-2009)  
University of Delaware, Newark, DE

Assistant Professor (2001-2003)  
Southern Illinois University, Carbondale, IL

Visiting Assistant Professor (2000-01)  
Clark University, Worcester, MA

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**ADMINISTRATIVE  
APPOINTMENTS**

Office of the Provost (2023-2025)  
Senior Project Lead  
International Faculty Research & Engagement Scholar  
University of Delaware, Newark, DE

Chair, Department of Geography & Spatial Sciences (2015-2020)  
University of Delaware, Newark, DE

Founding & Past Director (2020-2023)  
GIScience & Environmental Data Analytics Program  
University of Delaware, Newark, DE

Director, Environmental Science & Studies Programs (2010-2015)  
University of Delaware, Newark, DE

University Faculty Assessment Scholar (2010-2011)  
University of Delaware, Newark, DE

Associate Chair (2010-2011)  
Department of Geography  
University of Delaware, Newark, DE

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**OTHER  
APPOINTMENTS**

Reference Librarian (1999-2001)  
Quinsigamond Community College, Worcester, MA

Research Assistant (1997)  
Harvard University, Harvard Forest, Petersham, MA  
**Project title:** Modeling the carbon budget of an old growth hemlock  
(*Tsuga canadensis*) stand

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**HONORS & AWARDS**

*Fellow/Fellowships*

*American Association for the Advancement of Science (AAAS) Fellow* (2024)  
**Affiliated Section:** Atmospheric and Hydrospheric Sciences

*Distinguished Visiting Fellow, Institute of Advanced Studies* (2023)  
University of Birmingham, United Kingdom

*Alexander von Humboldt Alumni Research Fellowship* (2022)

*Japan Society for Promotion of Science (JSPS) Invitation Fellowship* (2016)

*Alexander von Humboldt Research Fellowship for Experienced Researchers* (2012)

*Salzburg Global Seminar Fellow* (2008)

*Other Honors and Awards*

*Top Cited Article Award, Wiley* (2024)  
[article doi: 10.1002/eco.2369, *Ecohydrology*]

*Top 2% of Scientists Cited Worldwide, Elsevier* (2022)  
**Subfield:** Environmental Engineering/ Meteorology & Atmospheric Science

***Top Cited Article Award, Wiley (2022)***  
[article doi: 10.1002/eco.2208, *Ecohydrology*]

***Top 10 Downloaded Article Award, Wiley (2022)***  
[article doi: 10.1002/eco.2208, *Ecohydrology*]

***Top 100 Most Downloaded Article Award, Microbiology, Springer Nature (2022)***  
[article doi: 10.1038/s41598-020-80602-9, *Scientific Reports*]

***Highly Cited Paper Recognition, ISI Web of Science (2020-pr)***  
[article doi: 10.1002/2015RG000479, *Reviews of Geophysics*]

***Top 10% Downloaded Article Award, Wiley (2020)***  
[article doi: 10.1002/hyp.13432, *Hydrological Processes*]

***Outstanding Faculty Mentor Award, College of Earth, Ocean & Environment (2019)***

***Excellent Article Award Winner, Japan Society of Hydrology and Water Resources (2018)***  
[article doi: 10.1016/j.jhydrol.2017.03.009, *Journal of Hydrology*]

***Editor's Choice Award- Biotropica [article doi: 10.1111/btp.12349] (2017)***

***Honorary Member- Delta Phi Alpha- National German Honor Society (2014)***

***Cover Photo for the Canadian Journal of Forest Research [Vol. 43, Issues 1-12] (2013)***

***Award for Excellence in Geography Programmatic Assessment (2008)***

***Phi Beta Kappa Honor Society (inducted 1994)***

***Gamma Theta Upsilon-Geographic International Honor Society (inducted 1992)***

***Strabo Prize for Intellectual Leadership, Exploration, & Creativity in Geography (1992)***

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## **ADMINISTRATIVE ACHIEVEMENTS (Selected)**

During my five year term as Department Chair at a university operating under a hybrid revenue based budgeting (RBB) model, I was responsible for planning, oversight, and management of the Department's budget. Selected leadership experience over the ten year period (2010-2020), as both Director of Environmental Science and Studies and Department Chair, included:

- leading departmental strategic planning efforts, e.g., the strategic hiring plan;
- promoting and raising the Department's national and international visibility and prominence;
- leading, evaluating, and appraising seventeen faculty (later eighteen) plus a variety of directly reporting staff;
- indirectly supervising and appraising an externally funded outreach and extension organization within the Department, namely, the Center for Environmental Monitoring and Analysis;
- running faculty searches and negotiating with candidates and drafting offer letters;

- cultivating donors and fundraising with the Development Office;
- promoting the Department within the University to garner additional resources for growth;
- completing a faculty mentoring policy;
- completing leadership courses that were designed to train collaborative and effective academic leaders;
- serving on the College Diversity, Equity, and Inclusion Committee and making strides in diversifying our faculty and student body;
- serving on Environmental Humanities Working Group (created minor);
- serving on Water Science & Policy Working Group (created graduate program);
- serving on committees of professional societies & NSF panels;
- publishing journal articles on best assessment practices, serving as a university Assessment Fellow, and helping coauthor the assessment chapters for our university accreditation through the Middle States Commission on Higher Education; and
- serving on the Provost's Strategic Planning Initiative, participating in the *New Models for American Research Universities* subgroup

Additional accomplishments included:

- gaining four growth positions and achieving gender balance for the Department (including one Distinguished Professorship from an under-represented group);
- successfully negotiating a name change for the Department to better align it for the future (now Geography & Spatial Sciences);
- starting a new pipeline program in GIS to Newark High School to amplify STEM diversity;
- creating a new Minerals, Materials, and Society certificate program for working professionals;
- launching a new undergraduate major in meteorology and climatology;
- redesigning the Geography major to leverage emerging digital technologies;
- creating a new B.S. GIScience and Environmental Data Analytics Program (approved May 2019) and investing in a \$200k lab renovation; and
- leading the development of an ecological entrepreneurship certificate for the College

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## **LEAD CONVENER- FUNDED INTERNATIONAL GRAND CHALLENGES WORKSHOP**

### **Ettersburg Ecohydrology Workshop (by invitation only, October 2018)**

**Schloss Ettersburg (UNESCO World Heritage Site), Ettersburg, Germany**

**Funded by UNIDEL Foundation, Inc. & University of Delaware**

(Note: Graduate student co-authors, co-organizers, and participants are color coded in purple)

**Levia, D.F.** (convener & principal organizer), **Grasso, D.** (co-convener), **Hudson, J.E.** (co-organizer), **Hudson, S.A.** (co-organizer), **Lopes Ribeiro, F.** (co-organizer), **Oster, C.** (co-organizer), **Sanchez Carretero, D.** (co-organizers), **Trifunovic, B.** (co-organizer), **Raymond, S.** (rapporteur), and **Michalzik, B.** (local arrangements coordinator and liaison). Total of 29 participants: 20 invited world renown ecohydrologists, 6 University of Delaware graduate student co-organizers and participants (highlighted in purple), 2 conveners, 1 rapporteur. A total of 11 countries represented. Venue: Schloss Ettersburg. [Media coverage: <https://www.ceoe.udel.edu/news-events/news/november-2018/eco-hydrology-workshop>]

Workshop goal: To assemble some of the thought leaders in ecohydrology and allied fields to specifically identify the research needs and gaps that must be closed in order for

ecohydrologists to provide timely, relevant, and flexible research strategies (and data) to help mitigate some of the world's water problems.

Participants (from 11 different countries, listed alphabetically): Elizabeth Boyer (Pennsylvania State University, USA), Michael Bruen (University College Dublin, Ireland), Darryl Carlyle-Moses (Thompson Rivers University, Canada), Carles Cayuela (Institute of Environmental Assessment and Water Research, Spanish Council for Scientific Research, Spain), Irena Creed (University of Saskatchewan, Canada), Nick van de Giesen (Delft University of Technology, Netherlands), Domenico Grasso (University of Michigan, Dearborn, USA), Andrew Guswa (Smith College, USA), David Hannah (University of Birmingham, UK), **Janice Hudson** (University of Delaware, USA), **Sean Hudson** (University of Delaware, USA), Shin'ichi Iida (Forestry and Forest Products Research Institute, Japan), Robert Jackson (Stanford University, USA), Gabriel Katul (Duke University, USA), Tomo'omi Kumagai (University of Tokyo, Japan), Delphis Levia (University of Delaware, USA), Pilar Llorens (Institute of Environmental Assessment and Water Research, Spanish Council for Scientific Research, Spain), **Flavio Lopes Ribeiro** (University of Delaware, USA & São Paulo, Brazil), Beate Michalzik (Friedrich Schiller University Jena, Germany), Kazuki Nanko (Forestry and Forest Products Research Institute, Japan), **Christopher Oster** (University of Delaware, USA), Catherine Peters (Princeton University, USA), Diane Pataki (University of Utah, USA), Sandy Raymond (University of Delaware, USA), Andrea Rinaldo (Ecole Polytechnique Fédérale de Lausanne, Switzerland), **Daniel Sanchez Carretero** (University of Delaware, USA), John Selker (Oregon State University, USA), Dörthe Tetzlaff (Humboldt University of Berlin, Germany), **Branimir Trifunovic** (University of Delaware, USA), Maciej Zalewski (University of Łódź, Poland)

Products:

**Levia, D.F.\***, Creed, I.F.\* , Hannah, D.M., Nanko, K., Boyer, E.W., Carlyle-Moses, D.E., van de Giesen, N., Grasso, D., Guswa, A.J., **Hudson, J.E.**, **Hudson, S.A.**, Iida, S., Jackson, R.B., Katul, G.G., Kumagai, T., Llorens, P., **Lopes Ribeiro, F.**, Pataki, D.E., Peters, C.A., **Sanchez Carretero, D.**, Selker, J.S., Tetzlaff, D., Zalewski, M. and Bruen, M. 2020. Homogenization of the terrestrial water cycle. *Nature Geoscience* 13(10): 656-658. [\* equal contributors; we make no distinction between first and second authors] [DOI: 10.1038/s41561-020-0641-y], [Media coverage: 13 news outlets]

**Mrad, A.**, Katul, G.G., **Levia, D.F.**, Guswa, A.J., Boyer, E.W., Bruen, M., Carlyle-Moses, D.E., **Coyte, R.**, Creed, I.F., van de Giesen, N., Grasso, D., Hannah, D.M., **Hudson, J.E.**, Humphrey, V., Iida, S., Jackson, R.B., Kumagai, T., Llorens, P., Michalzik, B., Nanko, K., Peters, C.A., Selker, J.S., Tetzlaff, D., Zalewski, M. and Scanlon, B. 2020. Peak grain forecasts for the U.S. High Plains amid withering waters. *Proceedings of the National Academy of Sciences of the United States of America* 117(42): 26145-26150. [DOI: 10.1073/pnas.2008383117], [Media coverage: <https://doi.org/10.1029/2020EO151974>, plus 10 other news outlets]

Guswa, A.J., Tetzlaff, D., Selker, J.S., Carlyle-Moses, D.E., Boyer, E.W., Bruen, M., Cayuela, C., Creed, I.F., van de Giesen, N., Grasso, D., Hannah, D.M., **Hudson, J.E.**, **Hudson, S.A.**, Iida, S., Jackson, R.B., Katul, G.G., Kumagai, T., Llorens, P., **Lopes Ribeiro, F.**, Michalzik, B., Nanko, K., **Oster, C.**, Pataki, D.E., Peters, C.A., Rinaldo, A., **Sanchez Carretero, D.**, **Trifunovic, B.**, Zalewski, M., **Haagsma, M.** and **Levia, D.F.** 2020. Advancing ecohydrology in the 21<sup>st</sup> century: a convergence of opportunities. *Ecohydrology* 13(4): e2208, 14 p. [DOI: 10.1002/eco.2208]

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**FFPRI-UD (Forestry and Forest Products Research Institute- University of Delaware)  
Virtual Mini Research Symposium (Parts I and II):  
Growing Convergence Research  
(by invitation only, December 2022)  
Funded by  
US NSF Grant award #: GCR-CMMI-1934887**

**Lead conveners:** Delphis F. Levia & Thomas H. Epps, III (UD) and Koji Tamai & Kazuki Nanko (FFPRI); 44 registrants

**Symposium goal:** Introduce researchers from UD and the Forestry and Forest Products Research Institute to pinpoint and catalyze areas for convergence research, especially in data science-enabled machine learning (ML) and artificial intelligence (AI), green chemistry and the bioeconomy, as well as life cycle assessment.

**Post-symposium visit:** Visit to Japan in September 2023; met with FFPRI President Dr. Toru Asano and several senior researchers for continued discussions on wood science/wood chemistry, hydrology, and life cycle assessment; developed plans for collaborative paper writing to spawn deep integration of polymer science, wood science, and hydrology.

The poster features a background image of a forest with a molecular structure overlaid. A large dark blue circle on the left contains the text 'U.S. / Japan GROWING CONVERGENCE RESEARCH' and 'symposium on sustainability in forestry-derived biomaterials'. To the right, a white box contains the title 'Virtual, Mini-Symposium' and a paragraph of text. Below this, a grey box lists the dates and times for Part 1 (December 5, 2022, 9:00 - 10:30 PM EST) and Part 2 (December 15, 2022, 8:30 - 10:00 AM EST). At the bottom, a white box provides the registration link 'bit.ly/GCRvirtual' and contact information for Delphis Levia. Logos for FFPRI, University of Delaware, and NSF are at the bottom left, along with the NSF award number. A footer at the very bottom acknowledges funding from the NSF's Growing Convergence Research Program.

U.S. / Japan  
**GROWING  
CONVERGENCE  
RESEARCH**  
symposium on sustainability in forestry-derived biomaterials

**Virtual, Mini-Symposium**  
Join us as we bridge continents to bring together scientific experts from Forestry and Forest Products Research Institute (FFPRI), the premiere forest research institute in Japan, and the research labs of the University of Delaware based NSF Growing Convergence Research (GCR) effort. In this virtual, mini research symposium, we will explore synergies between forest science, chemical engineering, and polymer science with the goal of identifying areas for collaborative focus in advancing life cycle assessment and environmental sustainability.

**DECEMBER 5, 2022**  
PART 1 | 9:00 - 10:30 PM EST

**DECEMBER 15, 2022**  
PART 2 | 8:30 - 10:00 AM EST

**Register:** [bit.ly/GCRvirtual](https://bit.ly/GCRvirtual)

Questions? Contact Delphis Levia at [dlevia@udel.edu](mailto:dlevia@udel.edu)

We gratefully recognize funding by the U.S. NSF's Growing Convergence Research Program (Award #: GCR-CMMI-1934887) that made this virtual research symposium possible.

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## **TECHNOLOGY TRANSFER: LICENSING & PATENTING ACTIVITY**

2013. Know-How License Agreement (Licensor: University of Delaware; Licensee: Automation Research Group. Pursuant to PCT Patent Application Nos.: PCT/US2010/034942 and PCT/US2012/024605). LaserBark™ automated tree measurement system.
2012. United States Patent and Trademark Office. United States Non-Provisional Patent Application No. 13/370,803. Methods and systems for identifying a point of interest on the periphery of an object.
2012. Russian Patent Office- International Searching Authority. International Non-Provisional Patent Application No. PCT/US2012/024605. Methods and systems for identifying a point of interest on the periphery of an object.
2011. United States Patent and Trademark Office. United States Provisional Patent Application No.: 61/441,502. Apparatus for defining a point of interest on the periphery of an object.
2010. United States Patent and Trademark Office. United States Non-Provisional Patent Application No. 12/780,517. Method and apparatus for measuring microrelief of an object.
2010. Korean Intellectual Property Office- International Searching Authority. International Non-Provisional Patent Application No. PCT/US2010/034942. Method and apparatus for measuring microrelief of an object.
2009. United States Patent and Trademark Office. United States Provisional Patent Application No.: 61/178,708. Method and apparatus for measuring microrelief of tree bark.

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## **GRANTS & FELLOWSHIPS AWARDED**

2025. US National Science Foundation. Human-Environment and Geographical Sciences (Ref. No. BCS-2436990). Doctoral Dissertation Research: Hydrological events and social aspects of disease transmission. Role: PI. (Award total: \$19,984)
2024. US National Science Foundation. Hydrologic Sciences. (Ref. No. EAR-2424999). Collaborative Research: Uncovering the role of stemflow in the cycling of water and solutes in coastal forests under stress from sea level rise. Role: Co-PI (\$329,272 total)
2023. Institute of Advanced Studies, University of Birmingham, United Kingdom. Distinguished Visiting Fellow.
2022. Alexander von Humboldt Foundation. Humboldt Alumni Research Fellowship. (Ref. No. USA-1144421-HFST-E). Forest-water interactions in the Critical Zone. Role: Fellow (Award total: €4,845)

2019. US National Science Foundation. Office of Integrative Activities. (Ref. No. GCR-CMMI-1934887) Growing Convergence Research. GCR: Life cycle management of materials: sustainable biomass to designer polymer systems. Role: Co-PI (\$3,699,999 total; award to date \$3.7M) [Media Story: <https://www.udel.edu/udaily/2020/february/biomass-lignin-from-trees-to-tires-sunscreens-lubricants/>]
2018. UNIDEL Foundation. GRAND CHALLENGES Interdisciplinary Grants Program. Innovative solutions to the global water crisis: promulgating grand strategies from ecohydrology. Role: PI. (Award total: \$85,025; UNIDEL Foundation: \$60,000; University of Delaware: \$25,025)
2016. Japan Society for Promotion of Science. Invitation Fellowship for Research in Japan (Ref. No. S16088). Study on rainfall redistribution by forest canopies using natural and simulated rainfall. Role: Fellow. (Award total: ¥763,570)
2015. US National Science Foundation. Geography and Spatial 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. Role: PI. (Award total: \$15,513)
2013. US National Science Foundation. Research Infrastructure Improvement Program (Track 2, RII C2, Ref. No. IIA-1330238). Collaborative Research: North East Water Resources Network (NEWRnet). Role: Co-PI. (Project total: \$6,000,000; Award total to University of Delaware: \$2,000,000)
2012. US National Science Foundation. Geography and Spatial Sciences (Ref. No. BCS-1233592). Doctoral Dissertation Research: Synoptic climatological approaches to assessing subcanopy hydrologic and nutrient fluxes in a temperate deciduous catchment. Role: PI (Award total: \$13,805)
2012. Alexander von Humboldt Foundation. Humboldt Research Fellowship. (Ref. No. USA-1144421-STP). A pilot study to investigate the effects of the woolly beech aphid on the hydrology and biogeochemistry of German European beech forests. Role: Fellow (Award total: €28,738)
2010. US National Science Foundation. Critical Zone Observatories (Ref No. EAR-1039401). Ground truth vegetation characteristics for CZO LiDAR study. Role: Co-PI. (Award total: \$30,031)
2010. US National Science Foundation. Geography and Spatial Sciences (Ref No. BCS-1003047). Doctoral Dissertation Research: Inter- and intra-storm variability of dissolved organic carbon and nitrogen fluxes from a mid-latitude broadleaved deciduous forest canopy. Role: PI. (Award total: \$12,000)
2009. US National Science Foundation. Critical Zone Observatories (Ref No. EAR-0724971). Collaborative Research: Consequences of critical zone disturbance to carbon storage, transport, bioavailability, and sequestration. Role: Co-PI, 1 of 16. (Award total: \$4,315,607)

2009. University of Delaware. Office of Educational Assessment. Assessing the efficacy of DLE (discovery learning experience) courses for undergraduate students. Role: PI. (Award total: \$10,000)
2009. Starrett Foundation and University of Delaware, Office of Economic Innovation and Partnership. Gap funding for the LaserBark™ automated tree measurement system. Role: PI. (Award total: \$51,000; Starrett Foundation: \$25,000; University of Delaware: \$26,000)
2008. US National Science Foundation. International Research and Education: Planning Visits and Workshops (Ref No. OISE-0822226). U.S.-Switzerland planning visit: Seeking a better understanding of canopy-snowpack interactions in relation to the avalanche hazard. Role: PI. (Award total: \$15,588)
2008. US National Science Foundation. Hydrologic Sciences (Ref No. EAR-0809205). Collaborative Research: Evolution of dissolved organic nitrogen (DON) from the headwaters to the catchment outlet: sources, variation with scale, and differences with DOC. Role: Co-PI. (Project total: \$540,634; Award total to University of Delaware: \$331,920)
2008. Association of American Geographers. AAG Research Grant. Dissolved organic carbon and nitrogen flux through the critical zone: effects of the canopy and litter layer. Role: PI. (Award total: \$1,200)
2007. Starrett Foundation. Microclimatology and biogeochemistry of a mid-Atlantic watershed located in southeastern Pennsylvania. Role: PI. (Award total: \$56,000)
2007. University of Delaware Research Foundation. Dissolved organic carbon and nitrogen flux through the critical zone: effects of the canopy and litter layer. Role: PI. (Award total: \$25,000)
2006. University of Delaware. Center for Teaching Effectiveness, General Education Initiative, Information Technologies- Instructional Grant. Schistosomiasis and gold mining: two PBL activities for *Conservation of Natural Resources* (Geog235). Role: PI. (Award total: \$8,711)
2002. Oklahoma Climatological Survey, University of Oklahoma. Mesonet Data Grant. Assessing climatic suitability of the northward expansion of *Solenopsis invicta* Buren (red imported fire ant) in Oklahoma under three global climate change scenarios. Role: PI. (Award total: \$9,000)
2002. Office of Research and Development Administration, Southern Illinois University, Carbondale. Faculty Research/Creative Grant. The development of a methodology to detect farmland prone to residential development near small towns. Role: PI. (Award total: \$9,641)
2002. Office of Research and Development Administration, Southern Illinois University, Carbondale. Award of an Undergraduate Research Fellow (Ref. No. 3022-165). Litterfall interception of *Liquidambar styraciflua* L. (sweetgum) fruit litter in southern Illinois. Role: PI. (Award total: \$5,400)

1999. US National Science Foundation. Doctoral Research Grant. Geography and Regional Science (Ref. No. SBR-9906545). Seasonality of leachate dynamics in broadleaved deciduous forest ecosystems in relation to global change and the increased frequency of mixed precipitation. Role: PI. (Award total: \$9,050)
1999. Massachusetts Water Resource Authority (MWRA), Commonwealth of Massachusetts. Chemical Analysis Grant. Seasonality of leachate dynamics in broadleaved deciduous forests in relation to global change and the increased frequency of mixed precipitation. Role: PI. (Award total: \$28,000)
1999. Pruser/Holzhauer Graduate Enhancement Research Grant. Graduate School of Geography, Clark University. Aboveground winter leachate dynamics from the woody surfaces of deciduous canopy trees in relation to canopy structure and meteorological conditions. Role: PI. (Award total: \$500)
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## COLLABORATIONS ON FOREIGN GRANT AWARDS

2022. Germany. Alexander von Humboldt Foundation. Humboldt Alumni Research Fellowship. (Ref. No. USA-1144421-HFST-E). Forest-water interactions in the Critical Zone. Role: Fellow. International host and collaborator: Beate Michalzik, Friedrich Schiller University Jena (Award total: €4,845)
2020. Japan. Environmental Radioactivity Research Network Center (ERAN) (Japan). Collaborative Research Award. (Ref. No. I-20-02). Developing deeper insights into water cycling of forests using radiocesium as a tracer. Role: Fellow (Award total: ¥150,000)
2019. Germany. Deutscher Akademischer Austauschdienst (DAAD). Tracking the impact of abiotic and biotic stressors on the biogeochemistry of trees with morbidity: a greenhouse experiment. Role: Host. Fellow and international postdoctoral collaborator: Kerstin Nätke, Friedrich Schiller University Jena
2019. Spain. Consejo Superior de Investigaciones Científicas (CSIC). (Ref. No. LINKA20045). The impacts of forest management and climate change on rainfall partitioning: their effects on soil moisture and groundwater. Role: Host, collaborator. PI: Pilar Llorens, IDAEA-CSIC (Award total: €18,512)
2018. Japan. Japan Society for Promotion of Science. Fund for the Promotion of Joint International Research (Ref No. 17KK0159). How does rain journey through the vertical canopy structure to the forest floor? - development of physical model using chemical analysis. Role: Host. Fellow and international senior collaborator: Kazuki Nanko, Forestry and Forest Products Research Institute (Award total: ¥10,200,000)
2016. Spain. The Secretariat of State for Research, Development and Innovation. Ministry of Economy and Competitiveness (Ref. No. CGL2016-75957-R). Spatio-temporal patterns of water transfer in headwater Mediterranean catchments. Links between vegetation and hydrological response (*TransHyMed*). Role: Senior Collaborator. PI: Pilar Llorens, IDAEA-CSIC. (Award total: €100,000)

2016. Japan. Japan Society for Promotion of Science. Invitation Fellowship for Research in Japan (Ref. No. S16088). Study on rainfall redistribution by forest canopies using natural and simulated rainfall. Role: Fellow. International host and collaborator: Kazuki Nanko, Forestry and Forest Products Research Institute (FFPRI) (Award total: ¥ 763,570)
2016. Spain. The Secretariat of State for Research, Development and Innovation. Ministry of Economy and Competitiveness (Ref. No. PRX15/00326). Papel de los flujos de trascolación en la modificación de las partículas atmosféricas a su paso a través de la cubierta forestal. Role: Host. Fellow and senior collaborator: Pilar Llorens, IDAEA-CSIC (Award total: €11,281)
2015. Spain. The Secretariat of State for Research, Development and Innovation. Ministry of Economy and Competitiveness (Ref. No. CGL2013-43418-R). EcoHyMed: Ecohydrology of Mediterranean headwater catchments. Links between vegetation and hydrological response in a changing environment. Role: Senior Collaborator. PI: Pilar Llorens, IDAEA-CSIC. (Award total: €122,210)
2015. Japan. Japan Society for Promotion of Science. Grant-In-Aid for Scientific Research (Ref, No. 15H05626). 3-D physical simulation on tree wetting and drying processes through multipoint raindrop measurements. Role: Senior Collaborator. PI: Kazuki Nanko, Forestry and Forest Products Research Institute (FFPRI) (Award total: ¥17,290,000)
2012. Germany. Alexander von Humboldt Foundation. Humboldt Research Fellowship. (Ref. No. USA-1144421-STP). A pilot study to investigate the effects of the woolly beech aphid on the hydrology and biogeochemistry of German European beech forests. Role: Fellow. International host and collaborator: Beate Michalzik, Friedrich Schiller University Jena (Award total: €28,738)

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**PUBLICATIONS** (student co-author color code: **green** = undergraduate; **purple** = graduate)

### **Books**

- Levia, D.F.** (Editor), Carlyle-Moses, D.E. (Co-Editor), Iida, S. (Co-Editor), Michalzik, B. (Co-Editor), Nanko, K. (Co-Editor) and Tischer, A. (Co-Editor). 2020. *Forest-Water Interactions*. Ecological Studies Series, No. 240, Springer Nature, Cham, Switzerland, 628 p. [ISBN: 978-3-030-26085-9 (Print); 978-3-030-26086-6 (eBook); DOI: 10.1007/978-3-030-26086-6], [**Download and citation statistics: ~64,000 downloads and 245 citations as of 10 Apr 2025**]
- Levia, D.F.** (Editor), Carlyle-Moses, D.E. (Co-Editor) and Tanaka, T. (Co-Editor). 2011. *Forest Hydrology and Biogeochemistry: Synthesis of Past Research and Future Directions*. Ecological Studies Series, No. 216, Springer-Verlag, Heidelberg, Germany, 740 p. [ISBN: 978-94-007-1362-8 (Print); 978-94-007-1363-5 (eBook); DOI: 10.1007/978-94-007-1363-5], [**Most downloaded book in Springer's Ecological Studies Series: ~161,000 downloads and 577 citations as of 10 Apr 2025**]

## Journal articles & other peer-reviewed publications

- O'Halloran, R.C., Shapiro, A.J., Gupta, Y., Long, A., Haney, S.G., Otsuka, Y., Sadula, S., Vlachos, D.G., **Levia, D.F.**, Epps, III, T.H. 2026. Following forest cues for the harvest optimization of tomorrow's biofeedstocks. *Green Chemistry* 28(2): 827-838. [DOI: 10.1039/D5GC04279H]
- Yao, W., Zhang, Y., Yuan, C., Pan, Y., Zhang, Z. and **Levia, D.F.** 2026. Spatiotemporal variations in solute chemistry of stemflow and throughfall within a xerophytic shrub ecosystem in northern China. *Journal of Hydrology* 665: 134708, 13 p. [DOI: 10.1016/j.jhydrol.2025.134708]
- Meydani, A.**, Wang, S., Bergquist, R., Lopes Ribeiro, F. and **Levia, D.F.** 2026. Climate extremes and the dynamic reshaping of snail habitat: implications for the spatiotemporal heterogeneity of schistosomal vulnerability in Brazil. *Acta Tropica* 273: 107933, 16 p. [DOI: 10.1016/j.actatropica.2025.107933]
- Meydani, A.**, Rezaei, P.A.Z., Javadian, M., Khodaei, H., Tajrishy, M. and **Levia, D.F.** 2026. Scenario-driven decision support system for assessing water balance to support agricultural and ecosystem sustainability. *Journal of Hydrology* 665: 134679, 20 p. [DOI: 10.1016/j.jhydrol.2025.134679]
- Iida, S., Ito, E., Kenzo, T., Kabeya, N., Shimizu, T., Tamai, K., Shimizu, A., Ohnuki, Y., Chann, S. and **Levia, D.F.** 2026. The effect of ENSO on transpiration in a dry evergreen forest in Cambodia: insights from a seven-year sap flow dataset. *Agricultural and Forest Meteorology* 376: 110894, 11 p. [DOI: 10.1016/j.agrformet.2025.110894]
- Levia, D.F.**, Katul, G.G., **Meydani, A.**, Nanko, K., Yuan, C., Zhang, Y., Llorens, P. and Bruen, M. 2025. Towards smarter green infrastructure: fusing bark ecology and stemflow hydrodynamics on tree stems. *Ecological Indicators* 178: 113827, 11 p. [DOI: 10.1016/j.ecolind.2025.113827]
- Levia, D.F.**, Germer, S., Latron, J., Vladich, H., Nanko, K., Zumr, D., Altingoz, M., Llorens, P. and Batelaan, O. 2025. Forest-water interactions: a multilingual perspective through six historical vignettes. *Hydrological Sciences Journal* 70(13): 2278-2301. [DOI: 10.1080/02626667.2025.2524570]
- Levia, D.F.**, O'Halloran, R.C., Otsuka, Y., Chang, J.L., Kaiser, K., Nanko, K., Iida, S., Shapiro, A.J., Gupta, Y., Sadula, S., Vlachos, D.G. and Epps, III, T.H. 2025. Stemflow unveils trees' weatherproofing stratagem during autumnal senescence. *Plant, Cell & Environment* 48(9): 7001-7004. [DOI: 10.1111/pce.15668]
- Nanko, K., **Levia, D.F.**, Iida, S., Shinohara, Y. and Sakai, N. 2025. Machine learning reveals the contrasting roles of rainfall and canopy structure metrics on the formation of canopy drip and splash throughfall. *Journal of Geophysical Research- Biogeosciences* 130(2): e2024JG008340, 20 p. [DOI: 10.1029/2024JG008340]
- Katul, G.G., Keshavarz, B., **Meydani, A.** and **Levia, D.F.** (invited) 2025. Stemflow hydrodynamics. *Reviews of Geophysics* 63(3): e2024RG000857, 30 p. [DOI: 10.1029/2024RG000857], [Media coverage, Katul, G.G., Keshavarz, B., Meydani, A. and Levia, D.F. (2025) Waterworks on tree stems: the wonders of stemflow. *Eos*, 106, <https://doi.org/10.1029/2025EO255027>, published 21 Aug 2025]

- O'Halloran, R.C., Shapiro, A.J., Gupta, Y., Guerard, J.J., Siple, D., Sadula, S., Epps, III, T.H., Vlachos, D.G. and **Levia, D.F.** 2025. Stemflow fluorescence predicts lignin composition and phenolic monomer yield for trees. *ACS Sustainable Chemistry & Engineering* 13(24): 9063-9073. [DOI: 10.1021/acssuschemeng.5c01598]
- Levia, D.F.**, Bergquist, R., **Meydani, A.**, Hu, Y. and Hannah, D.M. 2024. Hydrological extremes heighten vulnerability to schistosomiasis. *Earth's Future* 12(6): e2024EF004659, 6 p. [DOI: 10.1029/2024EF004659]
- Teh, D.C.C., **Levia, D.F.** and Nakai, T. 2024. Spatiotemporal variation of bark pH on the bole of a mature *Cryptomeria japonica* D. Don (Japanese cedar) tree. *Trees: Structure and Function* 38(3): 591-605. [DOI: 10.1007/s00468-024-02498-6]
- Iida, S., Noguchi, S., **Levia, D.F.**, Araki, M., Nitta, K., Wada, S., Narita, Y., Tamura, H., Abe, T. and Kaneko, T. 2024. Effects of forest thinning on sap flow dynamics and transpiration in a Japanese cedar forest. *Science of the Total Environment* 912: 169060, 12 p. [DOI: 10.1016/j.scitotenv.2023.169060], [Promotion via Forestry & Forest Products Research Institute press release]
- Yazaki, K., Kimura, F.S., Zhang, C., **Levia, D.F.**, Akiba, M., Saiki, S-T., Ishida, A., Kojima, M., Takebayashi, Y., Sakakibara, H., Maruyama, Y., Ota, Y. and Sahashi, N. 2024. Physiological responses of seedlings to the invasion of brown root rot hyphae differ between semi-deciduous *Bischofia javanica* Blume and evergreen *Rhaphiolepis umbellata* (Thunb.) Makino. *European Journal of Plant Pathology* 168(1):147-166. [DOI: 10.1007/s10658-023-02740-w]
- O' Halloran, R.C., Guerard, J.J. and **Levia, D.F.** 2024. Stemflow dissolved organic matter in mixed temperate forests: temporal and interspecific variation of optical indices and development of a stemflow-specific PARAFAC model. *Biogeochemistry* 167(8): 1025-1040. [DOI: 10.1007/s10533-024-01158-8]
- Zhang, Y., Yao, W., Yuan, C., Chen, N. and **Levia, D.F.** 2024. Alterations of throughfall and stemflow chemistry by vegetation in China: insights from a machine learning based meta-analysis. *Journal of Hydrology* 641: 131786, 13 p. [DOI: 10.1016/j.jhydrol.2024.131786]
- Levia, D.F.**, Bischoff, S., Gruselle, M.C., Näthe, K., Legates, D.R., **Lutgen, A.N.**, Boyer, E.W. and Michalzik, B. 2023. Geometric configurations of particulate matter in terrestrial solutions of a temperate beech forest. *Journal of Aerosol Science* 172: 106196, 11 p. [DOI: 10.1016/j.jaerosci.2023.106196]
- Czarnecki, J.I.**, **Levia, D.F.**, Scudlark, J.R., **Ouyang, T.** and Wozniak, A.S. 2023. Regional sources and seasonal variability of rainwater dissolved organic and inorganic nitrogen at a mid-Atlantic, USA coastal site. *Journal of Geophysical Research- Biogeosciences* 128(2): e2022JG007056, 24 p. [DOI: 10.1029/2022JG007056], [Dataset on Open Science Framework: <https://doi.org/10.17605/OSF.IO/BZKYD>]
- Hudson, J.E.**, **Levia, D.F.**, **Yoshimura, K.M.**, Gittel, N.R., **Hudson, S.A.** and Biddle, J.F. 2023. Mapping bark bacteria: initial insights of stemflow-induced changes in bark surface phyla. *Microbiology Spectrum* 11(6): e03562-23, 16 p. [DOI: 10.1128/spectrum.03562-23], [Dataset containing raw sequence reads for tree bark microbiome on the BioProject database, Project ID #: PRJNA604797; <https://www.ncbi.nlm.nih.gov/bioproject/604797DNA> sequencing data]

- Dowtin, A.L.**, Cregg, B.C., Nowak, D.J. and **Levia, D.F.** 2023. Towards optimized runoff reduction by urban tree cover: a review of key physical tree traits, site conditions, and management strategies. *Landscape and Urban Planning* 239: 104849, 13 p. [DOI: 10.1016/j.landurbplan.2023.104849]
- Zhang, Y., Yuan, C., Chen, N. and **Levia, D.F.** 2023. Rainfall partitioning by vegetation in China: a quantitative synthesis. *Journal of Hydrology* 617 (Part A): 128946, 13 p. [DOI: 10.1016/j.jhydrol.2022.128946]
- Akram, H.**, **Levia, D.F.**, Herrick, J.E., Lydiasari, H. and Schütze, N. 2022. Water requirements for oil palm grown on marginal lands: a simulation approach. *Agricultural Water Management* 260: 107292, 11p. [DOI: 10.1016/j.agwat.2021.107292]
- Zhang, X.**, **Levia, D.F.**, **Ebikade, E.O.**, **Chang, J.L.**, Vlachos, D.G. and Wu, C. 2022. The impact of differential lignin S/G ratios on mutagenicity and chicken embryonic toxicity. *Journal of Applied Toxicology* 42(3): 423-435. [DOI: 10.1002/jat.4229]
- Saidin, Z.H., **Levia, D.F.**, Kato, H., Kurihara, M., Hudson, J.E., Nanko, K. and Onda, Y. 2022. Vertical distribution and transport of radiocesium via branchflow and stemflow through the canopy of cedar and oak stands in the aftermath of the Fukushima Dai-ichi Nuclear Power Plant accident. *Science of the Total Environment* 818: 151698, 12 p. [DOI: 10.1016/j.scitotenv.2021.151698]
- Yuan, C., Guo, L., **Levia, D.F.**, Rietkerk, M., Fu, B. and Gao, G. 2022. Quantity or efficiency: strategies of self-organized xerophytic shrubs to harvest rain. *Water Resources Research* 58(10): e2022WR032008, 22 p. [DOI: 10.1029/2022WR032008]
- Luo, Y.**, O’Dea, R.M., **Gupta, Y.**, **Chang, J.L.**, Sadula, S., **Soh, L.P.**, **Robbins, A.M.**, **Levia, D.F.**, Vlachos, D.G., Epps, III, T.H., Ierapetritou, M.G. 2022. A life cycle greenhouse gas model of a yellow poplar forest residue reductive catalytic fractionation biorefinery. *Environmental Engineering Science* 39(10): 821-833. [DOI: 10.1089/ees.2021.0472]
- Nanko, K., Keim, R.F., Hudson, S.A. and **Levia, D.F.** 2022. Throughfall drop sizes suggest canopy flowpaths vary by phenophase. *Journal of Hydrology* 612 (Part B): 128144, 11 p. [DOI: 10.1016/j.jhydrol.2022.128144]
- Llorens, P., Latron, J., Carlyle-Moses, D.E., Näthe, K., **Chang, J.L.**, Nanko, K., Iida, S. and **Levia, D.F.** 2022. Stemflow infiltration areas into forest soils around American beech (*Fagus grandifolia* Ehrh.) trees. *Ecohydrology* 15(2): e2369, 12 p. [DOI: 10.1002/eeco.2369]
- Dowtin, A.L.**, Siegert, C.M. and **Levia, D.F.** 2021. Comparisons of flux-based stemflow enrichment ratios for two *Quercus* spp. within the megalopolis of the eastern USA. *Urban Ecosystems* 24(4): 675-690. [DOI: 10.1007/s11252-020-01064-5]
- Pinos, J., Latron, J., **Levia, D.F.** and Llorens, P. 2021. Drivers of the circumferential variation of stemflow inputs on the boles of *Pinus sylvestris* L. (Scots pine). *Ecohydrology* 14(8): e2348, 18 p. [DOI: 10.1002/eeco.2348]

- Ladin, Z.S, Ferrell, B., Dums, J., Moore, R., **Levia, D.F.**, Shriver, W.G., D'Amico, V.D., Trammell, T.L.E., Setubal, J.C. and Wommack, E. 2021. Assessing the efficacy of eDNA metabarcoding for measuring microbial biodiversity within forest ecosystems. *Scientific Reports* 11(1): 1629, 14 p. [DOI: 10.1038/s41598-020-80602-9]
- Shimizu, T., Tamai, K., Hosoda, I., Noguchi, S., Kominami, Y., Abe, T., Kitamura, K., Kurokawa, U., **Levia, D.F.**, Kubota, T., Kabeya, N., Iida, S., Nobuhiro, T., Sawano, S., Iwagami, S., Shimizu, A. and Tsuboyama, Y. 2021. Long-term precipitation and stream discharge records at seven forested experimental watersheds along a latitudinal transect in Japan: Jozankei, Kamabuchi, Takaragawa, Tsukuba, Tatsunokuchi-yama, Kahoku and Sarukawa. *Hydrological Processes* 35(10): e14376, 10 p. [DOI: 10.1002/hyp.14376]
- Iida, S.\*, Wheeler, K.I.\*, Nanko, K., Shinohara, Y., Sun, X., Sakai, N. and **Levia, D.F.** 2021. Canopy structure metrics governing stemflow funneling differ between leafed and leafless states: insights from a large-scale rainfall simulator. *Hydrological Processes* 35(8): e14294, 14 p. [\*equal contributors] [DOI: 10.1002/hyp.14294]
- Siegert, C.M., Suriano, Z.J., Leathers, D.J., Gold, A.J., Addy, K., Schroth, A.W., Seybold, E., Inamdar, S. and **Levia, D.F.** 2021. Effects of atmospheric circulation on stream chemistry in forested watersheds across the northeastern United States: Part 1. Synoptic-scale forcing. *Journal of Geophysical Research- Atmospheres* 126(13): e2020JD033413, 22 p. [DOI: 10.1029/2020JD033413]
- Suriano, Z.J., Siegert, C.M., Leathers, D.J., Gold, A.J., Addy, K., Schroth, A.W., Seybold, E., Inamdar, S. and **Levia, D.F.** 2021. Effects of atmospheric circulation on stream chemistry in forested watersheds across the northeastern United States: Part 2. Interannual weather type variability. *Journal of Geophysical Research- Atmospheres* 126(13): e2021JD034546, 15 p. [DOI: 10.1029/2021JD034546]
- Levia, D.F.\***, Creed, I.F.\* , Hannah, D.M., Nanko, K., Boyer, E.W., Carlyle-Moses, D.E., van de Giesen, N., Grasso, D., Guswa, A.J., **Hudson, J.E.**, **Hudson, S.A.**, Iida, S., Jackson, R.B., Katul, G.G., Kumagai, T., Llorens, P., **Lopes Ribeiro, F.**, Pataki, D.E., Peters, C.A., **Sanchez Carretero, D.**, Selker, J.S., Tetzlaff, D., Zalewski, M. and Bruen, M. 2020. Homogenization of the terrestrial water cycle. *Nature Geoscience* 13(10): 656-658. [\* equal contributors; we make no distinction between first and second authors] [DOI: 10.1038/s41561-020-0641-y], [Media coverage: 13 news outlets]
- Wheeler, K.I.**, **Levia, D.F.** and Vargas, R. 2020. Visible and near-infrared hyperspectral indices explain more variation in lower-crown leaf nitrogen concentrations in autumn than in summer. *Oecologia* 192(1): 13-27. [DOI: 10.1007/s00442-019-04554-2], [Dataset on EcoSIS (Ecological Spectral Information System) Spectral Library: <https://ecosis.org/package/spectra-from-in-situ-deciduous-leaves-and-leaves-collected-for-nitrogen-analysis-throughout-autumn>]
- Campellone, S.V.**, **Levia, D.F.** and Montalto, F.A. 2020. Differences in submillimetre surface morphology and canopy interception storage capacities of *Gleditsia triacanthos* L. (honeylocust) in relation to canopy phenophase and position. *Ecohydrology* 13(3): e2192, 11 p. [DOI: 10.1002/eco.2192]

- Tucker, A.M., **Levia, D.F.**, Katul, G.G., Nanko, K. and Rossi, L.F. 2020. A network model for stemflow solute transport. *Applied Mathematical Modelling* 88: 266-282. [DOI: 10.1016/j.apm.2020.06.047]
- Imamura, N., **Levia, D.F.**, Nanko, K., Tanaka, N. and Ohte, N. 2020. Geographic factors explain the variability of atmospheric deposition of sulfur and nitrogen onto coniferous forests within and beyond the Tokyo Metropolis. *Water, Air, & Soil Pollution* 231(3): 105, 16 p. [DOI: 10.1007/s11270-020-4467-4]
- Zhang, H., **Levia, D.F.**, He, B., Wu, H., Liao, A., Carlyle-Moses, D.E, Liu, J., Wang, N., Li, J. and Fu, C. 2020. Interspecific variation in tree- and stand-scale stemflow funneling ratios in a subtropical deciduous forest in eastern China. *Journal of Hydrology* 590: 125455, 13p. [DOI: 10.1016/j.jhydrol.2020.125455]
- Yazaki, K., **Levia, D.F.**, Takenouchi, A., Watanabe, M., Kabeya, D., Miki, N.H., Taneda, H., Ogasa, M.Y., Oguro, M., Saiki, S., Tobita, H. and Fukuda, K. 2020. Imperforate tracheary elements and vessels alleviate xylem tension under severe dehydration: insights from water release curves for excised twigs of three tree species. *American Journal of Botany* 107(8): 1122-1135. [DOI: 10.1002/ajb2.1518]
- Mrad, A.**, Katul, G.G., **Levia, D.F.**, Guswa, A.J., Boyer, E.W., Bruen, M., Carlyle-Moses, D.E., **Coyte, R.**, Creed, I.F., van de Giesen, N., Grasso, D., Hannah, D.M., **Hudson, J.E.**, Humphrey, V., Iida, S., Jackson, R.B., Kumagai, T., Llorens, P., Michalzik, B., Nanko, K., Peters, C.A., Selker, J.S., Tetzlaff, D., Zalewski, M. and Scanlon, B. 2020. Peak grain forecasts for the U.S. High Plains amid withering waters. *Proceedings of the National Academy of Sciences of the United States of America* 117(42): 26145-26150. [DOI: 10.1073/pnas.2008383117], [Media coverage: <https://doi.org/10.1029/2020EO151974>, plus 10 other news outlets]
- Pinos, J., Latron, J., Nanko, K., **Levia, D.F.** and Llorens, P. 2020. Throughfall isotopic composition in relation to drop size at the intra-event scale in a Mediterranean Scots pine stand. *Hydrology and Earth System Sciences* 24(9): 4675-4690. [DOI: 10.5194/hess-24-4675-2020]
- Nanko, K., Tanaka, N., Leuchner, M. and **Levia, D.F.** 2020 (invited). Throughfall erosivity in relation to drop size and crown position: a case study from a teak plantation in Thailand. In: **Levia, D.F.**, Carlyle-Moses, D.E., Iida, S., Michalzik, B., Nanko, K. and Tischer, A. (Eds.), *Forest-Water Interactions*. Ecological Studies Series, No. 240, Springer Nature, Cham, Switzerland: 279-298. [DOI: 10.1007/978-3-030-26086-6\_12]
- Guo, L., Mount, G., **Hudson, S.**, Lin, H. and **Levia, D.F.** 2020. Pairing geophysical techniques improves understanding of the near-surface Critical Zone: visualization of preferential routing of stemflow along coarse roots. *Geoderma* 357: 113953. [DOI: 10.1016/j.geoderma.2019.113953], [designated a "highly cited" article, ISI Web of Science]
- Tamai, K., Boyer, E.W., Iida, S., Carlyle-Moses, D.E. and **Levia, D.F.** 2020 (invited). Forest influences on streamflow: case studies from the Tatsunokuchi-Yama Experimental Watershed, Japan and the Leading Ridge Experimental Watershed, USA. In: **Levia, D.F.**, Carlyle-Moses, D.E., Iida, S., Michalzik, B., Nanko, K. and Tischer, A. (Eds.), *Forest-Water Interactions*. Ecological Studies Series, No. 240, Springer Nature, Cham, Switzerland: 519-536. [DOI: 10.1007/978-3-030-26086-6\_21]

- Carlyle-Moses, D.E., Iida, S., Germer, S., Llorens, P., Michalzik, B., Nanko, K., Tanaka, T., Tischer, A. and **Levia, D.F.** 2020. Commentary: What we know about stemflow's infiltration area. *Frontiers in Forests and Global Change* 3: 577247, 6 p. [DOI: 10.3389/ffgc.2020.577247]
- Iida, S., Shimizu, T., Tamai, K., Kabeya, N., Shimizu, A., Ito, E., Ohnuki, Y., Chann, S. and **Levia, D.F.** 2020. Evapotranspiration from the understory of a tropical dry deciduous forest in Cambodia. *Agricultural and Forest Meteorology* 295: 108170, 12p. [DOI: 10.1016/j.agrformet.2020.108170]
- Guswa, A.J., Tetzlaff, D., Selker, J.S., Carlyle-Moses, D.E., Boyer, E.W., Bruen, M., Cayuela, C., Creed, I.F., van de Giesen, N., Grasso, D., Hannah, D.M., **Hudson, J.E.**, **Hudson, S.A.**, Iida, S., Jackson, R.B., Katul, G.G., Kumagai, T., Llorens, P., **Lopes Ribeiro, F.**, Michalzik, B., Nanko, K., **Oster, C.**, Pataki, D.E., Peters, C.A., Rinaldo, A., **Sanchez Carretero, D.**, **Trifunovic, B.**, Zalewski, M., **Haagsma, M.** and **Levia, D.F.** 2020. Advancing ecohydrology in the 21<sup>st</sup> century: a convergence of opportunities. *Ecohydrology* 13(4): e2208, 14 p. [DOI: 10.1002/eco.2208], [designated a "top cited" article, Wiley (2022)]
- Levia, D.F.\***, Nanko, K.\*, Amasaki, H., Giambelluca, T.W., Hotta, N., Iida, S., Mudd, R.G., Nullet, M.A., Sakai, N., Shinohara, Y., Sun, X., Suzuki, M., Tanaka, N., Tantasirin, C. and Yamada, K. 2019. Throughfall partitioning by trees. *Hydrological Processes* 33(12): 1698-1708. [\* equal contributors; we make no distinction between first and second authors] [DOI: 10.1002/hyp.13432], [top 10% most downloaded articles, *Hydrological Processes*, Wiley]
- Cayuela, C., **Levia, D.F.**, Latron, J. and Llorens, P. 2019. Particulate matter fluxes in a Mediterranean mountain forest: interspecific differences between throughfall and stemflow in oak and pine stands. *Journal of Geophysical Research- Atmospheres* 124(9): 5106-5116. [DOI: 10.1029/2019JD030276]
- Lüpke, M., Leuchner, M., **Levia, D.F.**, Nanko, K., Iida, S. and Menzel, A. 2019. Characterization of differential throughfall drop size distributions beneath European beech and Norway spruce. *Hydrological Processes* 33(26): 3391-3406. [DOI: 10.1002/hyp.13565]
- Nanko, K., Suzuki, S., Noguchi, H., Ishida, Y., **Levia, D.F.**, Ogura, A., Hagino, H., Matsumoto, H., Takimoto, H. and Sakamoto, T. 2019. Mechanical properties of Japanese black pine (*Pinus thunbergii* Parl.) planted on coastal sand dunes: resistance to uprooting and stem breakage by tsunamis. *Wood Science and Technology* 53(2): 469-489. [DOI: 10.1007/s00226-019-01078-z]
- Seybold, E., Gold, A.J., Inamdar, S.P., Adair, C., Bowden, W.B., Vaughan, M.C.H., Pradhanang, S.M., Addy, K., Shanley, J.B., Vermilyea, A., **Levia, D.F.**, Wemple, B.C. and Schroth, A.W. 2019. Influence of land use and hydrological variability on seasonal dissolved organic carbon and nitrate export: insights from a multi-year regional analysis for the northeastern USA. *Biogeochemistry* 146(1): 31-49. [DOI: 10.1007/s10533-019-00609-x]
- Dowtin, A.L.** and **Levia, D.F.** 2018. The power of persistence. *Science* 360(6393): 1142. [DOI: 10.1126/science.360.6393.1142], [Media Coverage: Science Careers (from the journal *Science*, American Association for the Advancement of Science, AAAS), <http://www.sciencemag.org/careers/articles>; featured by AAAS on 10 June 2020 for #ShutDownSTEM and Black Lives Matter]

- Näthe, K., **Levia, D.F.**, Tischer, A. and Michalzik, B. 2018. Low-intensity surface fire effects on carbon and nitrogen cycling in soil and soil solution of a Scots pine forest in central Germany. *Catena* 162: 360-375. [DOI: 10.1016/j.catena.2017.10.026]
- Näthe, K., **Levia, D.F.**, Tischer, A., Potthast, K. and Michalzik, B. 2018. Spatiotemporal variation of aluminium and micro- and macronutrients in the soil solution of a coniferous forest after low-intensity prescribed surface fires. *International Journal of Wildland Fire* 27(7): 471-489. [DOI: 10.1071/WF17178]
- Hudson, J.E.**, **Levia, D.F.**, **Wheeler, K.I.**, Winters, C.G., Vaughan, M.C.H., Chace, J.F. and Sleeper, R. 2018. American beech leaf-litter leachate chemistry: effects of geography and phenophase. *Journal of Plant Nutrition and Soil Science* 181(2): 287-295. [DOI: 10.1002/jpln.201700074]
- Iida, S., **Levia, D.F.**, Nanko, K., Sun, X., Shimizu, T., Tamai, K. and Shinohara, Y. 2018. Correction of canopy interception loss measurements in temperate forests: a comparison of necessary adjustments among three different rain gauges based on a dynamic calibration procedure. *Journal of Hydrometeorology* 19(3): 547-553. [DOI: 10.1175/JHM-D-17-0124.1]
- Shimizu, T., Kobayashi, M., Iida, S. and **Levia, D.F.** 2018. A generalized correction equation for large tipping-bucket flow meters for use in hydrological applications. *Journal of Hydrology* 563: 1051-1056. [DOI: 10.1016/j.jhydrol.2018.06.036]
- Cayuela, C., Llorens, P., Sánchez-Costa, E., **Levia, D.F.** and Latron, J. 2018. Effect of biotic and abiotic factors on inter and intra-event variability in stemflow rates in oak and pine stands in a Mediterranean mountain area. *Journal of Hydrology* 560: 396-406. [DOI: 10.1016/j.jhydrol.2018.03.050]
- Yazaki, K., Takanashi, T., Kanzaki, N., Komatsu, M., **Levia, D.F.**, Kabeya, D., Tobita, H., Kitao, M. and Ishida, A. 2018. Pine wilt disease causes cavitation around the resin canals and irrecoverable xylem conduit dysfunction. *Journal of Experimental Botany* 69(3): 589-602. [DOI: 10.1093/jxb/erx417]
- Karwan, D.L., Pizzuto, J.E., Alto, R., Marquard, J., Harpold, A., Skalak, K., Benthem, A., **Levia, D.F.**, Siegert, C.M. and Aufdenkampe, A.K. 2018. Direct channel precipitation and storm characteristics influence short-term fallout radionuclide assessment of sediment source. *Water Resources Research* 54(7): 4579-4594. [DOI: 10.1029/2017WR021684]
- Carlyle-Moses, D.E., Iida, S., Germer, S., Llorens, P., Michalzik, B., Nanko, K., Tischer, A. and **Levia, D.F.** 2018. Expressing stemflow commensurate with its ecohydrological importance. *Advances in Water Resources* 121: 472-479. [DOI: 10.1016/j.advwatres.2018.08.015]
- Levia, D.F.**, **Hudson, S.A.**, Llorens, P. and Nanko, K. 2017 (invited). Throughfall drop size distributions: a review and prospectus for future research. *WIREs-Water* 4(4): e1225, 18 p. [DOI: 10.1002/wat2.1225], [Issue cover image, DOI: 10.1002/wat2.1233], [Media Coverage: Advance Science News, <http://www.advancedsciencenews.com/throughfall-drop-size-distributions-review-prospectus-future-research/>], [Top 20 most downloaded articles in *WIREs-Water*]

- Wheeler, K.I., Levia, D.F. and Hudson, J.E. 2017. Tracking senescence-induced patterns in leaf litter leachates using parallel factor analysis (PARAFAC) modeling and self-organizing maps. *Journal of Geophysical Research- Biogeosciences* 122(9): 2233-2250. [DOI: 10.1002/2016JG003677]
- Näthe, K., Levia, D.F., Steffens, M. and Michalzik, B. 2017. Solid-state <sup>13</sup>C NMR characterization of surface fire effects on the composition of organic matter in both soil and soil solution from a coniferous forest. *Geoderma* 305: 394-406. [DOI: 10.1016/j.geoderma.2017.06.030]
- Siegert, C.M., Levia, D.F., Leathers, D.J., Van Stan, J.T. and Mitchell, M.J. 2017. Do storm synoptic patterns affect biogeochemical fluxes from temperate deciduous forest canopies? *Biogeochemistry* 132(3): 273-292. [DOI: 10.1007/s10533-017-0300-6]
- Imamura, N., Levia, D.F., Toriyama, J., Kobayashi, M. and Nanko, K. 2017. Stemflow-induced spatial heterogeneity of radiocesium concentrations and stocks in the soil of a broadleaved deciduous forest. *Science of the Total Environment* 599-600: 1013-1021. [DOI: 10.1016/j.scitotenv.2017.05.017]
- Hudson, J.E., Levia, D.F., Hudson, S.A., Bais, H. and Legates, D.R. 2017. Phenoseasonal subcanopy light dynamics and the effects of light on the physiological ecology of a common understory shrub, *Lindera benzoin*. *PLoS ONE* 12(10): e0185894, 20p. [DOI: 10.1371/journal.pone.0185894], [Media Coverage: <http://blogs.plos.org/ecology/2017/10/27/a-little-light-reading/>]
- Schooling, J.T., Levia, D.F., Carlyle-Moses, D.E., Dowtin, A.L., Brewer, S.E., Donkor, K.K., Borden, S.A. and Grzybowski, A.A. 2017. Stemflow chemistry in relation to tree size: a preliminary investigation of eleven urban park trees in British Columbia, Canada. *Urban Forestry and Urban Greening* 21: 129-133. [DOI: 10.1016/j.ufug.2016.11.013]
- Iida, S., Levia, D.F., Shimizu, A., Shimizu, T., Tamai, K., Nobuhiro, T., Kabeya, N., Noguchi, S., Sawano, S. and Araki, M. 2017. Intrastorm scale rainfall interception dynamics in a mature coniferous forest stand. *Journal of Hydrology* 548: 770-783. [DOI: 10.1016/j.jhydrol.2017.03.009], [2018 Excellent Article Award Winner, Japan Society of Hydrology and Water Resources], [Promotion via Forestry & Forest Products Research Institute press release]
- Tanaka, N., Levia, D., Igarashi, Y., Yoshifuji, N., Tanaka, K., Nanko, K., Tantasirin, C., Suzuki, M. and Kumagai, T. 2017. What factors are most influential in governing stemflow production from plantation-grown teak trees? *Journal of Hydrology* 544: 10-20. [DOI: 10.1016/j.jhydrol.2016.11.010]
- Siegert, C.M., Leathers, D.J. and Levia, D.F. 2017. Synoptic typing: interdisciplinary application methods with three practical hydroclimatological examples. *Theoretical and Applied Climatology* 128(3/4): 603-621. [DOI: 10.1007/s00704-015-1700-y]
- Yanoviak, S.P., Silveri, C., Stark, A.Y., Van Stan, J.T. and Levia, D.F. 2017. Surface roughness affects the running speed of tropical canopy ants. *Biotropica* 49(1): 92-100. [DOI: 10.1111/btp.12349], [Editor's Choice Award Winner, <http://biotropica.org/editors-choice-biotropica-491/>]

- Nanko, K., Hashimoto, S., Miura, S., Ishizuka, S., Sakai, Y., **Levia, D.F.**, Ugawa, S., Nishizono, T., Kitahara, F., Osone, Y. and Kaneko, S. 2017. Assessment of soil group, site and climatic effects on soil organic carbon stocks of topsoil in Japanese forests. *European Journal of Soil Science* 68(4): 547-558. [DOI: 10.1111/ejss.12444]
- Vaughan, M.C.H., Bowden, W.B., Shanley, J.B., Vermilyea, A., Sleeper, R., Gold, A.J., Pradhanang, S., Inamdar, S.P., **Levia, D.F.**, Andres, A.S., Birgand, F. and Schroth, A.W. 2017. High-frequency dissolved organic carbon and nitrate measurements reveal differences in storm hysteresis and loading in relation to land cover and seasonality. *Water Resources Research* 53(7): 5345-5363. [DOI: 10.1002/2017WR020491]
- Michalzik, B.\*, **Levia, D.F.\***, Bischoff, S., Nätke, K. and Richter, S. 2016. Effects of aphid infestation on the biogeochemistry of the water routed through European beech (*Fagus sylvatica* L.) saplings. *Biogeochemistry* 129(1/2): 197-214. [\*equal contributors]. [DOI: 10.1007/s10533-016-0228-2]
- Siegert, C.M., **Levia, D.F.**, Hudson, S.A., Downton, A., 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]
- Rosier, C.L., **Levia, D.F.**, Van Stan, J.T., Aufdenkampe, A.K. and Kan, J. 2016. Seasonal dynamics of the soil microbial community structure within the proximal area of tree boles: possible influence of stemflow. *European Journal of Soil Biology* 73: 108-118. [DOI: 10.1016/j.ejsobi.2016.02.003]
- Nanko, K., Hudson, S.A. and **Levia, D.F.** 2016. Differences in throughfall drop size distributions in the presence and absence of foliage. *Hydrological Sciences Journal* 61(3): 620-627. [DOI: 10.1080/02626667.2015.1052454]
- Olsoy, P.J., Mitchell, J.J., **Levia, D.F.**, Clark, P.E. and Glenn, N.F. 2016. Estimation of big sagebrush leaf area index with terrestrial laser scanning. *Ecological Indicators* 61 (Part 2): 815-821. [DOI: 10.1016/j.ecolind.2015.10.034]
- Karwan, D.L., Siegert, C.M., **Levia, D.F.**, Pizzuto, J.E., Marquard, J., Aalto, R. and Aufdenkampe, A.K. 2016. Beryllium-7 wet deposition variation with storm height, synoptic classification, and tree canopy state in the mid-Atlantic USA. *Hydrological Processes* 30(1): 75-89. [DOI: 10.1002/hyp.10571]
- Levia, D.F.** and Germer, S. 2015 (invited). A review of stemflow generation dynamics and stemflow-environment interactions in forests and shrublands. *Reviews of Geophysics* 53(3): 673-714. [DOI: 10.1002/2015RG000479] [designated a “highly cited” article, ISI Web of Science]
- Levia, D.F.**, Michalzik, B., Nätke, K., Bischoff, S., Richter, S. and Legates, D.R. 2015. Differential stemflow yield from European beech saplings: the role of individual canopy structure metrics. *Hydrological Processes* 29(1): 43-51. [DOI: 10.1002/hyp.10124]

- Levia, D.F., Shiklomanov, A.N.,** Van Stan, J.T., **Scheick, C.E.,** Inamdar, S.P., Mitchell, M.J. and McHale, P.J. 2015. Calcium and aluminum cycling in a temperate broadleaved deciduous forest of the eastern USA: relative impacts of tree species, canopy state, and flux type. *Environmental Monitoring and Assessment* 187(7): 458, 13 p. [DOI: 10.1007/s10661-015-4675-3]
- Van Stan, J.T., Levia, D.F.** and Jenkins, R.B. 2015. Forest canopy interception loss across temporal scales: implications for urban greening initiatives. *Professional Geographer* 67(1): 41-51. [DOI: 10.1080/00330124.2014.888628]
- Köhler, S., **Levia, D.F.,** Jungkunst, H.F. and Gerold, G. 2015. An *in situ* method to measure and map bark pH. *Journal of Wood Chemistry and Technology* 35(6): 438-449. [DOI: 10.1080/02773813.2015.1025285]
- Shinohara, Y., **Levia, D.F.,** Komatsu, H., Nogata, M. and Otsuki, K. 2015. Comparative modeling of the effects of intensive thinning on canopy interception loss in a Japanese cedar (*Cryptomeria japonica* D. Don) forest of western Japan. *Agricultural and Forest Meteorology* 214-215: 148-156. [DOI: 10.1016/j.agrformet.2015.08.257]
- Tanaka, N., **Levia, D.,** Igarashi, Y., Nanko, K., Yoshifuji, N., Tanaka, K., Tantasirin, C., Suzuki, M. and Kumagai, T. 2015. Throughfall under a teak plantation in Thailand: a multifactorial analysis on the effects of canopy phenology and meteorological conditions. *International Journal of Biometeorology* 59(9): 1145-1156. [DOI: 10.1007/s00484-014-0926-1]
- Zimmermann, A., Uber, M., Zimmermann, B. and **Levia, D.F.** 2015. Predictability of stemflow in a species-rich tropical forest. *Hydrological Processes* 29(23): 4947-4956. [DOI: 10.1002/hyp.10554]
- Relf, G.,** Kendra, J.M., Schwartz, R.M., Leathers, D.J. and **Levia, D.F.** 2015. Slushflows: science and planning considerations for an expanding hazard. *Natural Hazards* 78(1): 333-354. [DOI: 10.1007/s11069-015-1716-8]
- Frost, E.E.** and **Levia, D.F.** 2014. Hydrologic variation of stemflow yield across co-occurring dominant canopy trees of varying mortality. *Ecohydrology* 7(2):760-770. [DOI: 10.1002/eco.1397]
- Shiklomanov, A.N.** and **Levia, D.F.** 2014. Stemflow acid neutralization capacity in a broadleaved deciduous forest: the role of edge effects. *Environmental Pollution* 193: 45-53. [DOI: 10.1016/j.envpol.2014.06.011]
- Siegert, C.M.** and **Levia, D.F.** 2014. Seasonal and meteorological effects on differential stemflow funneling ratios for two deciduous tree species. *Journal of Hydrology* 519 (Part A): 446-454. [DOI: 10.1016/j.jhydrol.2014.07.038]
- Legates, D.R., **Levia, D.F.,** Van Stan, J.T. and Velasco, V.M. 2014. Using wavelet analysis to examine bark microrelief. *Trees: Structure and Function* 28(2): 413-425. [DOI: 10.1007/s00468-013-0959-9]
- Van Stan, J.T., Van Stan, J.H. and **Levia, D.F.** 2014. Meteorological influences on stemflow generation across diameter size classes of two morphologically distinct deciduous tree species. *International Journal of Biometeorology* 58(10): 2059-2069. [DOI 10.1007/s00484-014-0807-7]

- Levia, D.F.\***, Michalzik, B.\*, Bischoff, S., Näthe, K., Legates, D.R., Gruselle, M.C. and Richter, S. 2013. Measurement and modeling of diameter distributions of particulate matter in terrestrial solutions. *Geophysical Research Letters* 40(7): 1317-1321 [\* equal contributors]. [DOI: 10.1002/grl.50305]
- Zhang, F., Gou, X., Liu, W., **Levia, D.F.** and Li, Y. 2013. Individual and time-varying tree-ring growth to climate sensitivity of *Pinus tabuliformis* Carr. and *Sabina przewalskii* Kom. in the eastern Qilian Mountains, China. *Trees: Structure and Function* 27(2): 359-370. [DOI: 10.1007/s00468-012-0772-x]
- Inamdar, S., Dhillon, G., Singh, S., Dutta, S., **Levia, D.**, Mitchell, M., **Van Stan, J.**, Scott, D. and McHale, P. 2013. Temporal variation in end-member chemistry and its influence on runoff mixing patterns in a forested, Piedmont catchment. *Water Resources Research*: 49(4): 1828-1844. [DOI: 10.1002/wrcr.20158]
- Van Stan, J.T.**, Martin, K., Friesen, J., Jarvis, M.T., Lundquist, J.D. and **Levia, D.F.** 2013. Evaluation of an instrumental method to reduce error in canopy water storage estimates via mechanical displacement. *Water Resources Research* 49(1): 54-63. [DOI: 10.1029/2012WR012666]
- Levia, D.F.\***, **Van Stan, J.T.\***, Inamdar, S.P., Jarvis, M.T., Mitchell, M.J., **Mage, S.M.**, **Scheick, C.E.** and McHale, P.J. 2012. Stemflow and dissolved organic carbon cycling: temporal variability in concentration, flux, and UV-Vis spectral metrics in a temperate broadleaved deciduous forest in the eastern United States. *Canadian Journal of Forest Research* 42(1): 207-216 [\* equal contributors]. [DOI: 10.1139/x11-173]
- Van Stan, J.T.**, **Levia, D.F.**, Inamdar, S.P., **Lepori-Bui, M.D.** and Mitchell, M.J. 2012. The effects of phenoseason and storm characteristics on throughfall solute washoff and leaching dynamics from a temperate deciduous forest canopy. *Science of the Total Environment* 430: 48-58. [DOI: 10.1016/j.scitotenv.2012.04.060]
- Li, X.Y., Lin, H. and **Levia, D.F.** 2012 (invited). Coupling ecohydrology and hydropedology at different spatio-temporal scales in water-limited ecosystems. In: Lin, H. (Ed.), *Hydropedology: Synergistic Integration of Pedology and Hydrology*. Academic Press, Elsevier, Amsterdam, Netherlands: 737-758. [DOI: 10.1016/B978-0-12-386941-8.00023-X]
- Inamdar, S., **Finger, N.**, Singh, S., Mitchell, M., **Levia, D.**, Bais, H., Scott, D. and McHale, P. 2012. Dissolved organic matter (DOM) concentration and quality in a forested mid-Atlantic watershed, USA. *Biogeochemistry* 108(1/3): 55-76. [DOI: 10.1007/s10533-011-9572-4]
- Kumar, A.S., Lakshmanan, V., Caplan, J., Powell, D., Czymbek, K.J., **Levia, D.F.** and Bais, H.P. 2012. Rhizobacteria *Bacillus subtilis* restricts foliar pathogen entry through stomata. *The Plant Journal* 72(4): 694-706. [DOI: 10.1111/j.1365-313X.2012.05116.x]
- Levia, D.F.** and Leathers, D.J. 2011 (invited). Rain-induced snowmelt. In: Singh, V.P., Singh, P. and Haritashya, U.K. (Eds.), *Encyclopedia of Snow, Ice and Glaciers*. Springer-Verlag, Heidelberg, Germany: 915-917. [DOI: 10.1007/978-90-481-2642-2\_433]

- Levia, D.F.**, Carlyle-Moses, D.E. and Tanaka, T. 2011 (invited). Reflections on the state of forest hydrology and biogeochemistry. In: Levia, D.F., Carlyle-Moses, D.E. and Tanaka, T. (Eds.), *Forest Hydrology and Biogeochemistry: Synthesis of Past Research and Future Directions*. Ecological Studies Series, No. 216, Springer-Verlag, Heidelberg, Germany: 729-733. [DOI: 10.1007/978-94-007-1363-5\_36]
- Levia, D.F.**, Keim, R.F., Carlyle-Moses, D.E. and **Frost, E.E.** 2011 (invited). Throughfall and stemflow in wooded ecosystems. In: Levia, D.F., Carlyle-Moses, D.E. and Tanaka, T. (Eds.), *Forest Hydrology and Biogeochemistry: Synthesis of Past Research and Future Directions*. Ecological Studies Series, No. 216, Springer-Verlag, Heidelberg, Germany: 425-443. [DOI: 10.1007/978-94-007-1363-5\_21]
- Levia, D.F.**, **Van Stan, J.T.**, **Siegert, C.M.**, Inamdar, S.P., Mitchell, M.J., **Mage, S.M.** and McHale, P.J. 2011. Atmospheric deposition and corresponding variability of stemflow chemistry across temporal scales in a mid-Atlantic broadleaved deciduous forest. *Atmospheric Environment* 45(18): 3046-3054. [DOI: 10.1016/j.atmosenv.2011.03.022]
- Pypker, T.G., **Levia, D.F.**, Staelens, J. and **Van Stan, J.T.** 2011 (invited). Canopy structure in relation to hydrological and biogeochemical fluxes. In: Levia, D.F., Carlyle-Moses, D.E. and Tanaka, T. (Eds.), *Forest Hydrology and Biogeochemistry: Synthesis of Past Research and Future Directions*. Ecological Studies Series, No. 216, Springer-Verlag, Heidelberg, Germany: 371-388. [DOI: 10.1007/978-94-007-1363-5\_18]
- Siegert, C.M.** and **Levia, D.F.** 2011. Stomatal conductance and transpiration from three co-occurring seedling species in relation to varying shade tolerance. *Trees: Structure and Function* 25(6): 1091-1102. [DOI: 10.1007/s00468-011-0584-4]
- Legates, D.R., Mahmood, R., **Levia, D.F.**, Deliberty, T.L., Quiring, S.M., Houser, C. and Nelson, F.E. 2011. Soil moisture: a central and unifying theme in physical geography. *Progress in Physical Geography* 35(1): 65-86. [DOI: 10.1177/0309133310386514]
- Van Stan, J.T.**, Jarvis, M.T., **Levia, D.F.** and Friesen, J. 2011. Instrumental method for reducing error in compression-derived measurements of rainfall interception for individual trees. *Hydrological Sciences Journal* 56(6): 1061-1066. [DOI: 10.1080/02626667.2011.590811]
- Van Stan, J.T.**, **Siegert, C.M.**, **Levia, D.F.** and **Scheick, C.E.** 2011. Effects of wind-driven rainfall on interception and stemflow generation between two codominant tree species with differing crown characteristics. *Agricultural and Forest Meteorology* 151(9): 1277-1286. [DOI: 10.1016/j.agrformet.2011.05.008]
- Pusecker, K.L., Torres, M.R., Crawford, I.L., **Levia, D.F.**, Lehman, D.C. and Copic, G. 2011/2012. Increasing the validity of outcomes assessment. *Peer Review* 13(4)/14(1): 27-30. [ISSN: 1541-1389]
- Inamdar, S., Singh, S., Dutta, S., **Levia, D.**, Mitchell, M., Scott, D., Bais, H. and McHale, P. 2011. Fluorescence characteristics and sources of dissolved organic matter for stream water during storm events in a forested mid-Atlantic watershed. *Journal of Geophysical Research-Biogeosciences* 116: G03043, 23 p. [DOI: 10.1029/2011JG001735]

- Levia, D.F., Van Stan, II, J.T., Mage, S.M.** and **Kelley-Hauske, P.W.** 2010. Temporal variability of stemflow volume in a beech-yellow poplar forest in relation to tree species and size. *Journal of Hydrology* 380(1/2):112-120. [DOI: 10.1016/j.jhydrol.2009.10.028]
- Van Stan, II, J.T.** and **Levia, D.F.** 2010. Inter- and intraspecific variation of stemflow production from *Fagus grandifolia* Ehrh. (American beech) and *Liriodendron tulipifera* L. (yellow poplar) in relation to bark microrelief in the eastern United States. *Ecohydrology* 3(1): 11-19. [DOI: 10.1002/eco.83]
- Van Stan, II, J.T.,** Jarvis, M.T. and **Levia, D.F.** 2010. An automated instrument for the measurement of bark microrelief. *IEEE Transactions on Instrumentation and Measurement* 59(2): 491-493. [DOI: 10.1109/TIM.2009.2031338]
- Fang, K., Gou, X., **Levia, D.F.,** Li, J., Zhang, F., Liu, X., He, M., Zhang, Y. and Peng, J. 2009. Variation of radial growth patterns in trees along three altitudinal transects in north central China. *IAWA Journal* 30(4): 443-457. [ISSN: 0928-1541]
- Rudrappa, T., Choi Y.S., **Levia, D.F.,** Legates, D.R., Lee, K.H. and Bais, H.P. 2009. *Phragmites australis* root secreted phytotoxin undergoes photo-degradation to execute severe phytotoxicity. *Plant Signaling and Behavior* 4(6): 506-513. [DOI: 10.4161/psb.4.6.8698]
- Levia, D.F.** 2008. A generalized allometric equation to predict foliar dry weight on the basis of trunk diameter for eastern white pine (*Pinus strobus* L.). *Forest Ecology and Management* 255(5/6): 1789-1792. [DOI: 10.1016/j.foreco.2007.12.001]
- Levia, D.F.** and **Leclair, L.A.** 2008. Winter leaf conductance rates of *Pinus strobus* L. (eastern white pine). *Physical Geography* 29(5): 474-482. [DOI: 10.2747/0272-3646.29.5.474]
- Levia, D.F.** and Quiring, S.M. 2008. Assessment of student learning in a hybrid PBL capstone seminar. *Journal of Geography in Higher Education* 32(2): 217-231. [DOI: 10.1080/03098260701514041]
- Gou, X., Peng, J., Chen, F. Yang, M., **Levia, D.F.** and Li, J. 2008. A dendrochronological analysis of the maximum summer-half-year temperature variations over the past 700 years on the northeastern Tibetan Plateau. *Theoretical and Applied Climatology* 93(3/4): 195-206. [DOI: 10.1007/s00704-007-0336-y]
- Klingaman, N.P., Levia, D.F.** and **Frost, E.E.** 2007. A comparison of three canopy interception models for a leafless mixed deciduous forest stand in the eastern United States. *Journal of Hydrometeorology* 8(4): 825-836. [DOI: 10.1175/JHM564.1]
- Yang, M., Yao, T., Gou, X., Hirose, N., Fujii, H., Hao, L. and **Levia, D.F.** 2007. Diurnal freeze/thaw cycles of the ground surface on the Tibetan Plateau. *Chinese Science Bulletin* 52(1): 136-139. [DOI: 10.1007/s11434-007-0004-8]
- Levia, D.F.** 2006 (invited). Evapotranspirational losses from plants: effects of canopy architecture and climate. In: Trimble, S.W. (Ed.), *Encyclopedia of Water Science*. CRC Press, Boca Raton, Florida, USA, 6 p. [DOI: 10.1081/E-EWS-120010165]

- Levia, D.F.** and Bashour, M.J. 2006. Interpreting the place space of an extinct cultural landscape: the Swift River Valley of central Massachusetts. *Historical Journal of Massachusetts* 34(2): 149-170. [ISSN: 0276-8313]
- Levia, D.F.** and **Frost, E.E.** 2006. Variability of throughfall volume and solute inputs in wooded ecosystems. *Progress in Physical Geography* 30(5): 605-632. [DOI: 10.1177/0309133306071145]
- Levia, D.F.** and **Wubben, N.** 2006. Vertical variation in the bark water storage capacity of *Pinus strobus* L. in southern Illinois. *Northeastern Naturalist* 13(1): 131-137. [ISSN: 1092-6194]
- Kidane-Mariam, T. and **Levia, D.F.** 2006. The political ecology of land degradation in Ethiopia. In: Konadu-Agyemang, K. and Panford, K. (Eds.), *Africa's Development in the Twenty-first Century: Pertinent Socioeconomic and Development Issues*. Ashgate Publishing Ltd., Aldershot, Hampshire, UK: 139-159. [ISBN: 978-0-7546-4478-1]
- Underwood, S.J., **Levia, D.F.** and **Lavin, J.** 2006. A climatology of solar radiation attenuation during fog episodes in the Central Valley of California. *The California Geographer* 46(1): 57-68. [ISSN: 0575-5700]
- Levia, D.F.** and Herwitz, S.R. 2005. Interspecific variation of bark water storage capacity of three deciduous tree species in relation to stemflow yield and solute flux to forest soils. *Catena* 64(1): 117-137. [DOI: 10.1016/j.catena.2005.08.001]
- Levia, D.F.**, **Bollinger, W.C.** and **Hrabik, R.A.** 2005. Evaporation of intercepted precipitation from fruit litter of *Liquidambar styraciflua* L. (sweetgum) in a clearing as a function of meteorological conditions. *International Journal of Biometeorology* 49(5): 325-331. [DOI: 10.1007/s00484-004-0245-z]
- Levia, D.F.** 2004. Differential winter stemflow generation under contrasting storm conditions in a southern New England broadleaved deciduous forest. *Hydrological Processes* 18(6): 1105-1112. [DOI: 10.1002/hyp.5512]
- Levia, D.F.** and **Frost, E.E.** 2004. Assessment of climatic suitability for the expansion of *Solenopsis invicta* Buren in Oklahoma using three general circulation models. *Theoretical and Applied Climatology* 79(1/2): 23-30. [DOI: 10.1007/s00704-004-0067-2]
- Levia, D.F.** and Underwood, S.J. 2004a. Hydrological research and the status of physical geography journals: increasing the impact of physical geography in the academy. *Professional Geographer* 56(3): 345-349. [DOI: 10.1111/j.0033-0124.2004.05603003.x]
- Levia, D.F.** and Underwood, S.J. 2004b. Snowmelt induced stemflow in northern hardwood forests: a theoretical explanation on the causation of a neglected hydrological process. *Advances in Water Resources* 27(2): 121-128. [DOI: 10.1016/j.advwatres.2003.12.001]
- Levia, D.F.**, **Bollinger, W.C.**, **Hrabik, R.A.** and Pogge, J.T. 2004. Water storage capacity of empty fruiting heads of *Liquidambar styraciflua* L. (sweetgum). *Hydrological Sciences Journal* 49(5): 843-853. [DOI: 10.1623/hysj.49.5.843.55133]

- Herwitz, S.R., **Levia, D.F.** and Ewe, S.M.L. 2004. Transpiration rates of the understory annual *Impatiens capensis* (Balsaminaceae) in response to the autumnal change in canopy leaf area. *Flora* 199(6): 524-530. [DOI: 10.1078/0367-2530-00181]
- Yates, E.D., Levia, D.F.** and Williams, C.L. 2004. Recruitment of three non-native invasive plants into a fragmented forest of southern Illinois. *Forest Ecology and Management* 190(2/3): 119-130. [DOI: 10.1016/j.foreco.2003.11.008]
- Levia, D.F.** 2003a. Winter stemflow leaching of nutrient-ions from deciduous canopy trees in relation to meteorological conditions. *Agricultural and Forest Meteorology* 117(1/2): 39-51. [DOI: 10.1016/S0168-1923(03)00040-6]
- Levia, D.F.** 2003b. Winter stemflow nutrient inputs into a southern New England broadleaved deciduous forest. *Geografiska Annaler* 85A(1): 13-20. [DOI: 10.1111/1468-0459.00185]
- Levia, D.F.** and **Frost, E.E.** 2003. A review and evaluation of stemflow literature in the hydrologic and biogeochemical cycles of forested and agricultural ecosystems. *Journal of Hydrology* 274(1/4): 1-29. [DOI: 10.1016/S0022-1694(02)00399-2], [1<sup>st</sup> highest average annual citation count and 4<sup>th</sup> highest citation count of any stemflow article published in any journal, ISI Web of Science, using “stemflow” as a topic]
- Levia, D.F.** 2002. Nitrate sequestration by corticolous macrolichens during winter precipitation events. *International Journal of Biometeorology* 46(2): 60-65. [DOI: 10.1007/s00484-001-0118-7]
- Levia, D.F.** and Herwitz, S.R. 2002. Winter chemical leaching from deciduous tree branches as a function of branch inclination angle in central Massachusetts. *Hydrological Processes* 16(14): 2867-2879. [DOI: 10.1002/hyp.1077]
- Levia, D.F.** and Herwitz, S.R. 2000. Physical properties of water in relation to stemflow leachate dynamics: implications for nutrient cycling. *Canadian Journal of Forest Research* 30(4): 662-666. [DOI: 10.1139/x99-244]
- Levia, D.F.** and **Page, D.R.** 2000. The use of cluster analysis in distinguishing farmland prone to residential development: a case study of Sterling, Massachusetts. *Environmental Management* 25(5): 541-548. [DOI: 10.1007/s002679910042]
- Levia, D.F.** 1999. Land degradation: why is it continuing? *Ambio* 28(2): 200-201. [ISSN: 0044-7447]
- Levia, D.F.** 1998. Farmland conversion and residential development in north central Massachusetts. *Land Degradation and Development* 9(2): 123-130. [DOI: 10.1002/(SICI)1099-145X(199803/04)9:2<123::AID-LDR282>3.0.CO;2-O]
- Herwitz, S.R. and **Levia, D.F.** 1997. Mid-winter stemflow drainage from bigtooth aspen (*Populus grandidentata* Michx.) in central Massachusetts. *Hydrological Processes* 11(2): 169-175. [DOI: 10.1002/(SICI)1099-1085(199702)11:2<169::AID-HYP428>3.0.CO;2-J]

## Conference Proceedings & Final Project Reports

- Epps, III, T.H., **Levia, D.F.**, Vlachos, D.G., Wu, C., Kunjapur, A., Korley, L. and Ierapetritou, M. 2025. Growing Convergence Research. GCR: Life cycle management of materials: sustainable biomass to designer polymer systems Final Project Report. *National Science Foundation*, Alexandria, VA.
- Iida, S., Noguchi, S., **Levia, D.F.**, Araki, M., Nitta, K., Wada, S., Narita, Y., Tamura, H., Abe, T. and Kaneko, T. 2024. The influence of forest thinning on hydrological processes: insights from sap flow measurements in a Japanese cedar stand. Project Summary Report. [*J. Jpn. Assoc. Hydrol. Sci.* Vol. 54, 79-83 (in Japanese)]
- Levia, D.F.** 2022. Forest-water interactions in the Critical Zone. Final Project Report. *Alexander von Humboldt Foundation*, Bonn, Germany.
- Levia, D.F.** 2022. “Forest hydrology in the Fourth Industrial Revolution.” *Proceedings of the 26<sup>th</sup> International Forestry and Environment Symposium* (148 p.). Vol. 26: 1, Keynote Address Summary, University of Sri Jayewardenepura, Nugegoda, Sri Lanka.
- Iida, S., Shimizu, T., Tamai, K., Kabeya, N., Shimizu, A., Araki, M., Ohnuki, Y., Ito, E., Kenzo, T., Toriyama, J., Kubota, T., Yamanaka, T., Chann, S. and **Levia, D.F.** 2022. Evapotranspirational processes in a dry deciduous forest in Cambodia: clarifying the respective contributions of overstory and understory vegetation to the hydrologic cycle. Project Report. [*J. Jpn. Assoc. Hydrol. Sci.* Vol. 52, 65-72 (in Japanese)]
- Levia, D.F.** 2021. “Developing deeper insights into water cycling of forests using radiocesium as a tracer. Final Project Report. *Environmental Radioactivity Research Network Center (ERAN)*, Tsukuba, Japan.
- Levia, D.F.** and Nanko, K. 2021. “The role of forests and trees as modulators of water and biogeochemical cycles.” 6<sup>th</sup> International Association for Hydro-Environment Engineering and Research (IAHR) Europe Congress, Abstract Book (p. 766-767), Warsaw, Poland.
- Nanko, K., **Levia, D.F.** and Seitz, S. 2021. “Sustaining the soil: management strategies of forest-water interactions to protect forest soils.” 6<sup>th</sup> International Association for Hydro-Environment Engineering and Research (IAHR) Europe Congress, Abstract Book (p. 772-773), Warsaw, Poland.
- Levia, D.F.** and Grasso, D. 2019. Innovative solutions to the global water crisis: promulgating grand strategies from ecohydrology. Final Project Report. *UNIDEL Foundation and University of Delaware, Graduate College*, Newark, DE.
- Levia, D.F.** and Downtin, A.L. 2018. Doctoral Dissertation Research: Effects of forest fragment size, shape, and structure on rainfall redistribution and solute flux in urban settings. Final Project Report. *National Science Foundation*, Alexandria, VA.

- Levia, D.F.**, Jaisi, D. and Schnauffer, I.N. 2017. Variations in the residence time and isotopic signature of stemflow along an edge-to-interior transect. Final Project Report. *Delaware Water Resources Center*, Newark, DE.
- Linhoss, A., Siegert, C.M. and **Levia D.F.** 2017. Calibration and comparison of forest canopy interception models. *Proceedings of the 2017 Mississippi Water Resources Conference*, p. 86, Jackson, MS.
- Leathers, D.J., **Levia, D.F.**, Inamdar, S.P., Andres, A.S. and Messer, K.D. 2017. US National Science Foundation. Research Infrastructure Improvement Program. Collaborative Research: North East Water Resources Network (NEWRnet). Final Project Report. *National Science Foundation*, Alexandria, VA.
- Levia, D.F.** and Nanko, K. 2016. Study on rainfall redistribution by forest canopies using natural and simulated rainfall. Final Project Report. *Japan Society for Promotion of Science*, Tokyo, Japan.
- Levia, D.F.** and Lutgen, A.N. 2016. The isotopic composition of throughfall in relation to drop size diameter distribution. Final Project Report. *Delaware Water Resources Center*, Newark, DE.
- Levia, D.F.**, Hudson, S.A. and Nanko, K. 2016. Disdrometers: a useful tool to measure throughfall drop size distributions. *Proceedings of the Irish National Hydrology Conference 2016*, Athlone, Co. Roscommon, Ireland.
- Levia, D.F.** and Siegert, C.M. 2014. Doctoral Dissertation Research: Synoptic climatological approaches to assessing subcanopy hydrologic and nutrient fluxes in a temperate deciduous catchment. Final Project Report. *National Science Foundation*, Alexandria, VA.
- Levia, D.F.** and Junghenn, K.T. 2014. The varying impact of stemflow and soil moisture on the diversity of soil bacterial and fungal communities in relation to soil respiration. Final Project Report. *Delaware Water Resources Center*, Newark, DE.
- Levia, D.F.** and Shiklomanov, A.N. 2014. Stemflow acid neutralization capacity in a broadleaved deciduous forest: the role of edge effects. Final Project Report. *Delaware Water Resources Center*, Newark, DE.
- Inamdar, S.P., **Levia, D.F.** and Bais, H.P. 2013. Collaborative Research: Evolution of dissolved organic nitrogen (DON) from the headwaters to the catchment outlet: sources, variation with scale, and differences with DOC. Final Project Report. *National Science Foundation*, Alexandria, VA.
- Levia, D.F.** 2012. A pilot study to investigate the effects of the woolly beech aphid on the hydrology and biogeochemistry of German European beech forests. Final Project Report. *Alexander von Humboldt Foundation*, Bonn, Germany.
- Levia, D.F.** and Scheick, C.E. 2012. Aluminum solute chemistry in stemflow in relation to season and tree species in a mid-Atlantic broadleaved deciduous forest. Final Project Report. *Delaware Water Resources Center*, Newark, DE.

- Levia, D.F.** and Van Stan, J.T. 2011. Doctoral Dissertation Research: Inter- and intra-storm variability of dissolved organic carbon and nitrogen fluxes from a mid-latitude broadleaved deciduous forest canopy. Final Project Report. *National Science Foundation*, Alexandria, VA.
- Sparks, D.L., **Levia, D.F.** and Pizzuto, J.E. 2011. Ground truth vegetation characteristics for CZO LiDAR study. Final Project Report. *National Science Foundation*, Alexandria, VA.
- Levia, D.F.** and Lepori-Bui, M.D. 2011. A watershed scale forest inventory of the Fair Hill Natural Resource Management Area experimental watershed. Final Project Report. *Delaware Water Resources Center*, Newark, DE.
- Levia, D.F.** and Veness, A.R. 2010. Assessing the efficacy of DLE (discovery learning experience) courses for undergraduate students. Final Project Report. *Office of Educational Assessment, University of Delaware*, Newark, DE.
- Levia, D.F.** and Bevan, A.N. 2010. Biogeochemistry of base cations in a broadleaved deciduous forest. Final Project Report. *Delaware Water Resources Center*, Newark, DE.
- Hellström, R.A., Higgins, A., Ferris, D., Mark, B. and **Levia, D.** 2010. Impacts of complex terrain on evapotranspiration within a tropical alpine valley in the Peruvian Andes. *Proceedings of the 67th Annual Eastern Snow Conference*, Hancock, Massachusetts.
- Levia, D.F.** 2009. U.S.-Switzerland planning visit: Seeking a better understanding of canopy-snowpack interactions in relation to the avalanche hazard. Final Project Report. *National Science Foundation*, Alexandria, VA.
- Levia, D.F.** 2009. *Cold Trail*. (Ed.) Cryosphere Specialty Group Newsletter, Association of American Geographers: Volume 6, Issue 1.
- Levia, D.F.** 2008. Dissolved organic carbon and nitrogen flux through the critical zone: effects of the canopy and litter layer. Final Project Report. *University of Delaware Research Foundation*, Newark, DE.
- Levia, D.F.** 2008. Dissolved organic carbon and nitrogen flux through the critical zone: effects of the canopy and litter layer. Final Project Report. *Association of American Geographers*, Washington, DC.
- Levia, D.F.** 2008. *Cold Trail*. (Ed.) Cryosphere Specialty Group Newsletter, Association of American Geographers: Volume 5, Issue 1.
- Levia, D.F.** 2007. Schistosomiasis and gold mining: two PBL activities for *Conservation of Natural Resources* (Geog 235). Final Project Report. *Center for Teaching Effectiveness, University of Delaware*, General Education Initiative & Information Technologies, Newark, DE.

- Levia, D.F.** and Leclair, L.A. 2006. Winter needle conductance rates of *Pinus strobus* L. (eastern white pine): meteorological conditions and intraspecific variability. Final Project Report. *Delaware Water Resources Center*, Newark, DE.
- Levia, D.F.** 2003. Differential winter stemflow generation under contrasting storm conditions in a southern New England broadleaved deciduous forest. *Proceedings of the 60th Annual Eastern Snow Conference*, Sherbrooke, Quebec, Canada.
- Levia, D.F.** 2002. The development of a methodology to detect farmland prone to residential development near small towns. Final Project Report. *Office of Research Development and Administration, Southern Illinois University*, Carbondale, IL.
- Levia, D.F.** and Herwitz, S.R. 2002. Seasonality of leachate dynamics in broadleaved deciduous forest ecosystems in relation to global change and the increased frequency of mixed precipitation. Research Nugget Report. *National Science Foundation*, Alexandria, VA.
- Levia, D.F.** and Herwitz, S.R. 2002. Winter chemical leaching from deciduous tree branches as a function of branch inclination angle in central Massachusetts. *Proceedings of the 59th Annual Eastern Snow Conference*, Stowe, Vermont, USA.
- Herwitz, S.R. and **Levia, D.F.** 2001. Seasonality of leachate dynamics in broadleaved deciduous forest ecosystems in relation to global change and the increased frequency of mixed precipitation. Final Project Report. *National Science Foundation*, Alexandria, VA.
- Levia, D.F.** 2000. Winter stemflow leachate dynamics from deciduous canopy trees in relation to precipitation event characteristics. *Proceedings of the 57th Annual Eastern Snow Conference*, Syracuse, New York, USA.
- Ault, H.K., Herwitz, S.R. and **Levia, D.F.** 2000. Modeling the geometry of leafless canopy trees for the determination of total woody surface area and its influence on leachate chemistry. *Proceedings of the 9th International Conference on Geometry and Graphics*, Johannesburg, South Africa.

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## MANUSCRIPTS IN REVIEW

- O'Halloran, R.C., Chittakone, S., Kim, R.M., Boyer, E.W., Michael, H.A., Chin, Yu-Ping and **Levia, D.F.** (submitted to *Hydrological Processes*) Tree mortality reduces stemflow inputs and alters groundwater biogeochemistry in ghost forests.
- Hashimoto, K., Nanko, K., Tagawa, Y. and **Levia, D.F.** (submitted to *Hydrological Processes*) High-speed imaging yields insights into throughfall generation processes.
- Xiong, F., Yuan, C., Zhang, Y., Hu, Y., Jiang, Z., Nanko, K., Liu, Q., Wang, S., Li, Y. and **Levia, D.F.** (submitted to *Journal of Hydrology*) An integrated framework for identifying throughfall spatiotemporal patterns: revealing dry zones as critical anchors for pattern persistence.

Shapiro, A.J., O'Halloran, R.C., Tavares, D., Huynh, D., Han, S., Shi, R., Gupta, Y., O'Dea, R.M., Haney, S.G., Otsuka, Y., Sadula, S., Vlachos, D.G., Ierapetritou, M., **Levia, D.F.** and Epps, III, T.H. (submitted to *Green Chemistry*) Forest residue harvest optimization: spanning the bridge between plant biology and biorefinery performance.

Siple, D., O'Halloran, R.C., Chittakone, S., Kaiser, K., **Levia, D.F.** and Chin, Y.P. (submitted to *Geochimica et Cosmochimica Acta*) Soluble lignin and its oxidation products in stemflow dissolved organic matter.

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## INVITED LECTURES AND PRESENTATIONS

**Levia, D.F.** 2026. "Tracking and tracing the transport and fate of matter through tree canopies: demystifying the 'black box' of tree stems." Sponsored Colloquium within the Fluid Dynamics Program Seminar Series, Tokyo University of Agriculture and Technology, Koganei Campus, Tokyo, Japan

**Levia, D.F.** 2026. "Water wizardry of forest ecosystems." Sponsored Colloquium for the Advanced Lecture on Agricultural Science I Speaker Series, Tokyo University of Agriculture and Technology, Fuchu Campus, Tokyo, Japan

**Levia, D.F.** 2026. "Pursuit of excellence: positioning yourself for job success." Sponsored Colloquium for the Advanced Lecture on Agricultural Science I Speaker Series, Tokyo University of Agriculture and Technology, Fuchu Campus, Tokyo, Japan

**Levia, D.F.** 2025. "Waterworks of the wooded world." Sponsored Colloquium within the Water Resources Graduate Program Seminar Series, Oregon State University, Corvallis, Oregon, USA

Meydani, A. and **Levia, D.F.** 2025. "Hydroclimatological extremes amplify vulnerability to tropical disease." Water Science & Policy Graduate Program Brown Bag Colloquium Series, University of Delaware, Newark, Delaware, USA

Zhang, Y., Yuan, C., Chen, N. and **Levia, D.F.** 2025. "Rainfall partitioning by vegetation in China and the application of boosted regression trees." Department of Geography & Spatial Sciences Seminar Series, University of Delaware, Newark, Delaware, USA

**Levia, D.F.** 2024. "Growing Convergence Research Outreach Webinar 1." Virtual panelist for the US National Science Foundation Growing Convergence Research Outreach Webinar Series

**Levia, D.F.** 2024. "Water-disease interactions: schistosomiasis." Sponsored by the American Institute on Pakistan Studies through the US Department of State via the US Embassy in Islamabad, Pakistan, STEM Sisters Special Lecture, University of Delaware, Newark, Delaware, USA

**Levia, D.F.** 2024. "Water wizardry of the wooded world." Department of Geography & Spatial Sciences Seminar Series, University of Delaware, Newark, Delaware, USA

- Levia, D.F.** 2023. “Tracking and tracing the transport and fate of atmospheric deposition by trees.” Sponsored Colloquium within the Water Challenges in a Changing World Seminar Series, Institute of Global Innovation, University of Birmingham, Birmingham, England, United Kingdom
- Boyer, E.W., McKnight, D.M. and **Levia, D.F.** 2023. “Sources and transport of organic matter in America’s surface waters under changing environmental conditions.” Presented at the Fall 2023 American Chemical Society Meeting, San Francisco, California, USA
- Iida, S., Shimizu, T., Tamai, K., Kabeya, N., Shimizu, A., Araki, M., Ohnuki, Y., Ito, E., Toriyama, J., Kenzo, T., Kubota, T., Yamanaka, T., Chann, S. and **Levia, D.F.** 2023. “Contribution of understory vegetation to evapotranspirational processes in a tropical dry deciduous forest in Cambodia.” Presented at the American Geophysical Union Annual Meeting, San Francisco, California, USA
- Levia, D.F.** 2022. “Vegetation complexity: a precept of resiliency for a water-stressed world.” Sponsored Colloquium within the Water Challenges in a Changing World Seminar Series, Institute of Global Innovation, University of Birmingham, Birmingham, England, United Kingdom
- Levia, D.F.** 2022. “Water flux in forested ecosystems.” Sponsored Colloquium by the Hydrology and Fluid Dynamics Group, Department of Civil and Environmental Engineering, Duke University, Durham, North Carolina, USA
- Levia, D.F.** 2022. “Forest hydrology in the Fourth Industrial Revolution.” Presented keynote lecture at the 26<sup>th</sup> International Forestry and Environment Symposium, University of Sri Jayewardenepura, Nugegoda, Sri Lanka
- Epps, III, T.H., **Levia, D.F.** and Ierapetritou, M.G. 2022. “Lessons from the field: perspectives for catalyzing convergence in GCR Phase II.” Virtual panelists for the US National Science Foundation Growing Convergence Research Lecture Series
- Levia, D.F.** 2021. “High-frequency environmental sensing in ecohydrology can promote better environmental stewardship.” Live session speaker for the UNESCO Special Session on Ecohydrology- translation of science into innovations and solutions at the 6<sup>th</sup> International Association for Hydro-Environment Engineering and Research (IAHR) Europe Congress, Warsaw, Poland
- Levia, D.F.** and Nanko, K. 2021. “The role of forests and trees as modulators of water and biogeochemical cycles.” Virtual presentation in the Ecohydrology & Hydro-Engineering Session (KS3) at the 6<sup>th</sup> International Association for Hydro-Environment Engineering and Research (IAHR) Europe Congress, Warsaw, Poland
- Levia, D.F.** 2020. “Submillimetre hydrology.” Virtual presentation sponsored by the Working Group of the i-Link Project, Barcelona, Spain
- Levia, D.F.** 2020. “Exurban to urban: a possible lens to better understand city trees.” Sponsored Colloquium by the Department of Civil and Environmental Engineering, Princeton University, Princeton, New Jersey, USA

- Levia, D.F.** 2019. "Forest-water interactions: past, present, and future." Sponsored Colloquium by the Graduate School of Agricultural and Life Sciences, University of Tokyo, Tokyo, Japan
- Levia, D.F.** and Nanko, K. 2019. "Ecohydrology of forest ecosystems: retrospective and prospective reflections (or, what we know and where we should go)." Co-sponsored Colloquium by the European Regional Centre for Ecohydrology (under UNESCO), Polish Academy of Sciences, and the Department of Applied Ecology at the University of Łódź, Łódź, Poland
- Carlyle-Moses, D.E., Iida, S., Germer, S., Llorens, P., Michalzik, B., Nanko, K., Tischler, A. and **Levia, D.F.** 2019. "Stand-scale metrics for expressing stemflow commensurate with its ecohydrological importance." Presented at the European Geosciences Union Annual Meeting, Vienna, Austria
- Yerk, W., Campellone, S., **Levia, D.F.**, Fite, K., Hall, T., Montalto, F. (and many student volunteers and field technicians). 2018. "Shrubs and trees as stormwater infrastructure: a study of urban interception." Presented at the 2018 Philadelphia Flower Show, Philadelphia, Pennsylvania, USA
- Levia, D.F.** 2017. "What have we learned about precipitation partitioning and its effects on the hydrology and biogeochemistry of forested ecosystems?" Sponsored Colloquium by the Department of Geography, National Taiwan Normal University, Taipei, Taiwan
- Levia, D.F.** 2017. "Putting stemflow on the 'radar screen' of other scientists." Sponsored Colloquium by the Forestry and Forest Products Research Institute (FFPRI), Tsukuba, Japan [by specific request following lecture at the University of Tokyo]
- Levia, D.F.** and Michalzik, B. 2017. "The importance of stemflow in the biogeochemical cycling of aphid infested European beech saplings." Presented at the Humboldt Colloquium, "Global Research in the 21<sup>st</sup> Century: Perspectives of the U.S. Network", Washington, DC, USA
- Levia, D.F.** and Nanko, K. 2017. "Quenching the world's thirst: revelations of 176 million throughfall drops." Presented at a Joint Data Science Workshop between the University of Delaware and the University of Tsukuba (Japan), Newark, Delaware, USA
- Nanko, K., Hashimoto, S. and **Levia, D.F.** 2017. "Finding factors of determination by machine learning: case studies of soil carbon and canopy interception." Presented at Special Meeting on Deep Learning in Hydrology and Hydroengineering, Chiba Experiment Station, Institute of Industrial Science, University of Tokyo, Japan
- Levia, D.F.** 2016. "Putting stemflow on the 'radar screen' of other scientists." Sponsored Colloquium by the Graduate School of Agricultural and Life Sciences, University of Tokyo, Tokyo, Japan
- Levia, D.F.** 2016. "How to write a highly cited scientific paper: some tricks of the trade." Sponsored Colloquium by the Forestry and Forest Products Research Institute (FFPRI), Tsukuba, Japan

- Levia, D.F.** 2016. “Exurban to urban: understanding the nature of trees in cityscapes.” School of Civil, Structural and Environment Engineering Special Colloquium, University College Dublin, Dublin, Ireland
- Levia, D.F.** 2016. “Exurban to urban: understanding the nature of trees in cityscapes.” Department of Civil, Architectural, and Environmental Engineering Special Colloquium, Drexel University, Philadelphia, Pennsylvania, USA
- Nanko, K. and Levia, D.F.** 2016. “Relationship between foliage wettability and throughfall drop size.” Presented at the Interdisciplinary German-Japanese Symposium Workshop on the Research Potential of Plant Traits: Methods, Models, Data and Integrative Analyses, Technical University Dresden, Dresden, Germany
- Levia, D.F.** 2015. “Why are forests important in our changing world?” Sponsored Colloquium by the Center of Ecological Research and Forest Applications (CREAF), Barcelona, Spain
- Levia, D.F.** 2015. “Why are forests important in our changing world?” Sponsored Colloquium by the Institute of Geography, Friedrich Schiller University Jena, Jena, Germany
- Levia, D.F.** 2015. “Research activities of the University of Delaware Ecohydrology Group.” Sponsored Colloquium by the Institute for Environmental Science, University of Koblenz-Landau, Landau, Germany
- Levia, D.F.** 2015. “Effects of forests on water and biogeochemical cycles.” Environmental Science Seminar Series, Thompson Rivers University, Kamloops, British Columbia, Canada
- Levia, D.F.** 2015. “Why are forests important in our changing world?” Department of Geography Colloquium Series, University of Georgia, Athens, Georgia, USA
- Levia, D.F.** 2015. “Forest-water interactions.” Interdisciplinary Science Learning Laboratories Lecture Series, Earth. Equity. Environment. Spring 2015, University of Delaware, Newark, Delaware, USA
- Levia, D.F.** 2014. “Water and forests: differential effects of climate and canopy structure.” Sponsored Colloquium by the Graduate School of Agriculture, Kyoto University, Kyoto, Japan
- Levia, D.F.** 2014. “Trees as multi-faceted modulators of biosphere-atmosphere interactions.” Sponsored Colloquium by the Forestry and Forest Products Research Institute (FFPRI), Tsukuba, Japan
- Levia, D.F.** 2014. “Trees as multi-faceted modulators of biosphere-atmosphere interactions.” Sponsored Colloquium by the Hydrospheric Atmospheric Research Center, Nagoya University, Nagoya, Japan

- Levia, D.F.** 2014. “The interplay between canopy structure and climate: its influence on the hydrology and biogeochemistry of temperate forests.” Department of Geography, Texas A & M University, College Station, Texas, USA
- Michalzik, B., **Levia, D.F.**, Bischoff, S., Nätke, K. 2014. “Aphid infestation affecting the biogeochemistry of European beech saplings.” Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Nanko, K., Hudson, S.A., **Levia, D.F.**, Hashimoto, S., Miura, S. and Kaneko, S. 2014. “Which factors determine soil organic carbon stock and throughfall drop size? Introduction of a recent multifactorial analysis, boosted regression trees (BRT).” Hydrospheric Atmospheric Research Center, Nagoya University, Nagoya, Japan
- Levia, D.F.** 2013. “Germany: a Humboldt Fellow’s insights into its science and culture.” Sponsored Guest Speaker at the Delta Phi Alpha, National German Honor Society, Delaware Saengerbund and Library Association, Newark, Delaware, USA
- Levia, D.F.** 2013. “Variability of throughfall and stemflow fluxes: some reflections of a Humboldt Fellow.” Department of Geology & Geography, Georgia Southern University, Statesboro, Georgia, USA
- Levia, D.F.** and Michalzik, B. 2013. “Differential stemflow yield from European beech saplings: the role and respective importance of individual canopy structure metrics.” European Geosciences Union Annual Meeting, Vienna, Austria
- Van Stan, J., Siegert, C., **Levia, D.** and Scheick, C. 2013. “Differential stemflow generation due to crown structural interactions with wind-driven rainfall.” European Geosciences Union Annual Meeting, Vienna, Austria
- Levia, D.F.** 2012. “Precipitation partitioning and the corresponding differences in subcanopy fluxes of water and solutes between throughfall and stemflow: implications for forestry and agriculture.” Sponsored Colloquium by the Leibniz Institute for Agricultural Engineering Potsdam-Bornim, Potsdam, Germany
- Levia, D.F.** 2012. “Throughfall and stemflow: ecohydrological importance of deciduous forest canopies.” Sponsored Colloquium by the Institute of Hydrology, University of Freiburg, Freiburg, Germany
- Levia, D.F.** 2012. “Throughfall and stemflow: ecohydrological importance of deciduous forest canopies.” Jointly Co-sponsored Colloquium by the Institutes of Geography and Forestry and Forest Ecology, University of Göttingen, Göttingen, Germany
- Levia, D.F.** 2012. “The role of heterogeneous mixed deciduous forest canopies on altering water and solute fluxes to the forest floor.” Sponsored Colloquium by the Institute of Ecology, Friedrich Schiller University Jena, Jena, Germany

- Levia, D.F.** 2012. "The role of heterogeneous mixed deciduous forest canopies on altering water and solute fluxes to the forest floor." Sponsored Colloquium by the Institute of Geography, Friedrich Schiller University Jena, Jena, Germany
- Levia, D.F.** and Michalzik, B. 2012. "A pilot study to investigate the effects of the woolly beech aphid on the hydrology and biogeochemistry of European beech forests." Humboldt Networking Meeting, Kiel, Germany
- Inamdar, S.P., Mitchell, M.J., **Levia, D.F.**, Scott, D. and Bais, H.P. 2011. "Hydrologic and biogeochemical controls on nitrogen exports from catchments: contrasting responses and models for two forested sites." American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Levia, D.F.** 2011. "Does tree species matter in the hydrology and biogeochemistry of a temperate deciduous forested watershed?" College of Earth and Environmental Science, Lanzhou University, Lanzhou, China
- Levia, D.F.** 2011. "The science of the water cycle and water conservation issues: an introduction." College of Earth and Environmental Science, Lanzhou University, Lanzhou, China
- Levia, D.F.** 2011. "What happens in a forest when it rains, and why is it important?" Science Café, Delaware EPSCoR, Newark, Delaware, USA
- Levia, D.F.** 2010. "Ecohydrological processes in temperate broadleaved deciduous forests." Department of Ecology and Evolutionary Biology, University of Pennsylvania, Philadelphia, Pennsylvania, USA
- Levia, D.F.** 2010. "Ecohydrology of forested catchments: a conspectus of past, present, and future research activities." Department of Geography, University of Alabama, Tuscaloosa, Alabama, USA
- Levia, D.F.** 2009. "Ecohydrology and biogeochemistry: synthesis of past research and future directions." College of Resources Science and Technology, Beijing Normal University, Beijing, China
- Levia, D.F.** 2009. "A synopsis of research activities of UD's Ecohydrology Group: past, present, and future." Department of Geography, University of Delaware, Newark, Delaware, USA
- Levia, D.F.** 2008. "Biometeorology of a beech-yellow poplar forest in northeastern Maryland in relation to stemflow inputs." Northern Delaware/Philadelphia Area Local Chapter, American Meteorological Society
- Levia, D.F.** and Mage, S.M. 2008. "The stemflow hydrology of a beech-yellow poplar forest in northeastern Maryland: implications for hydrogeology." Presented at the First International Hydrogeology Conference, Pennsylvania State University, State College, Pennsylvania, USA

- Klingaman, N.P., **Levia, D.F.** and Frost, E.E. 2006. "A comparison of several canopy interception models for a leafless mixed deciduous forest stand in the eastern United States." Tropical Research Group Colloquia, University of Reading, Reading, United Kingdom
- Levia, D.F.** 2004. "Biosphere-climate interactions in a southern New England broadleaved deciduous forest." Geography Colloquium Series, Ball State University, Muncie, Indiana, USA
- Levia, D.F.** 2003. "Forest biometeorology." Colloquium Series, Department of Geology, University of Delaware, Newark, Delaware, USA
- Levia, D.F.** 2001. "Winter stemflow leachate dynamics from deciduous canopy trees in relation to precipitation event characteristics." Colloquium Series, Southern Illinois University Ecology Consortium, Carbondale, Illinois, USA
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## SYMPOSIUM PRESENTATIONS

- Levia, D.F.**, Katul, G.G., Meydani, A., Nanko, K., Yuan, C., Zhang, Y., Llorens, P., Keshavarz, B. and Bruen, M. 2025. "Welding bark ecology and stemflow hydrodynamics for smarter, bark-contemplative green infrastructure." Presented at the American Geophysical Union Annual Fall Meeting, New Orleans, LA, USA
- Nanko, K., **Levia, D.F.**, Iida, S., Shinohara, Y. and Sakai, N. 2025. "Raindrop dynamics in forest canopies: machine learning and rain simulation insights into canopy drip and splash throughfall." Presented at Droplets 2025, the 6<sup>th</sup> International Conference on Droplets, University of Liège, Liège, Wallonia, Belgium
- Nanko, K., **Levia, D.F.**, Iida, S., Shinohara, Y. and Sakai, N. 2025. "Throughfall partitioning under varying canopy conditions: insights from machine learning and rainfall simulations." Presented at the US-Japan Joint Seminar for Catchment Hydrology, Biogeochemistry, and Sediment Dynamics, University of Tsukuba, Tsukuba, Ibaraki, Japan
- Iida, S., Nanko, K., **Levia, D.F.**, Shimizu, T., Iwagami, S., Oda, T., Miyazawa, Y., Kagawa, A., Kubota, T., Momiyama, H. and Yokoo, Y. 2025. "Evaluation of canopy interception dynamics by multiple measurement methods in a Japanese cedar stand." Presented at the 136<sup>th</sup> Annual Meeting of the Japanese Forest Society, Hokkaido University, Sapporo, Japan
- Chittakone, S., O'Halloran, R.C., **Levia, D.F.** and Chin, Yu-Ping. 2025. "Stemflow-groundwater interactions in Mid-Atlantic ghost forests." Presented at the American Chemical Society Fall Meeting, Washington DC, USA
- Iida, S., Noguchi, S., Araki, M., Abe, T., **Levia, D.F.**, Nitta, K., Wada, S., Tamura, H., Narita, Y. and Kaneko, T. 2025. "How does transpiration of a Japanese cedar stand change after thinning?" Presented at the Annual Meeting of the Japanese Association of Hydrological Sciences, Hosei University, Chiyoda, Tokyo, Japan

- Meydani, A., **Levia, D.F.**, Wang, S. and Berququist, R. 2025. "Climate extremes contribute to shifts in schistosomiasis transmission risk." Presented at the American Geophysical Union Annual Fall Meeting, New Orleans, LA, USA
- O'Halloran, R.C., Chittakone, S., Kim, R., Boyer, E.W., Michael, H.A., Chin, Yu-Ping and **Levia, D.F.** 2025. "Disrupted pathways: stemflow loss and groundwater biogeochemistry in ghost forests." Presented at the American Geophysical Union Annual Fall Meeting, New Orleans, LA, USA
- O'Halloran, R.C., Shapiro, A.J., Gupta, Y., Guerard, J.J., Siple, D., Sadula, S., Epps, III, T.H., Vlachos, D.G. and **Levia, D.F.** 2025. "Stemflow dissolved organic matter shows promise as a proxy for lignin composition and phenolic monomer yield in tree biomass." Presented at the American Chemical Society Spring Meeting, San Diego, California, USA
- Iida, S., Shimizu, T., Tamai, K., Kabeya, N., Shimizu, A., Araki, M., Ohnuki, Y., Toriyama, J. Ito, E., Kubota, T., Kenzo, T., Chann, S. and **Levia, D.F.** 2025. "Long-term trend of transpiration in a dry deciduous forest in Cambodia." Presented at the Annual Meeting of the Japan Society of Hydrology and Water Resources, Akita Arts Theatre Milhas, Akita City, Akita, Japan
- Levia, D.F.**, O'Halloran, R.C., Otsuka, Y., Chang, J.L., Kaiser, K., Nanko, K., Iida, S., Shapiro, A.J., Gupta, Y., Sadula, S., Vlachos, D.G. and Epps, III, T.H. 2024. "Stemflow neutral sugar concentrations and the physiological ecology of trees: new data and a new perspective." Presented at the American Geophysical Union Annual Fall Meeting, Washington, DC, USA
- Nanko, K. and **Levia, D.F.** 2024. "Various types of drop size distributions of rainfall measured with a self-designed laser disdrometer." Presented at the 9<sup>th</sup> Global Energy and Water Exchanges (GEWEX) Open Science Conference, Hokkaido, Japan
- Meydani, A., **Levia, D.F.** and Bergquist, R. 2024. "Impact of hydrological extremes on intermediate snail hosts of schistosomiasis." Presented at the American Geophysical Union Annual Fall Meeting, Washington, DC, USA
- O'Halloran, R.C., **Levia, D.F.**, Guerard, J.J. and Chin, Yu-Ping. 2024. "Stemflow dissolved organic matter in mixed temperate forests: temporal and interspecific variation of optical indices and development of a stemflow-specific PARAFAC model." Presented at the Gordon Research Conference on Environmental Sciences: Water, Holderness, New Hampshire, USA
- Chittakone, S., O'Halloran, R.C., **Levia, D.F.** and Chin, Yu-Ping. 2024. "Analyzing stemflow lignin concentrations across morbidity classes to understand environmental changes on coastal forest health." Presented at the American Geophysical Union Annual Fall Meeting, Washington, DC, USA
- Kim, R., O'Halloran, R.C., **Levia, D.F.** and Chin, Yu-Ping. 2024. "Unraveling the impact of wildfire smoke on canopy-derived dissolved organic matter and dissolved black carbon dynamics." Presented at the American Geophysical Union Annual Fall Meeting, Washington, DC, USA

- Yuan, C., Guo, L., **Levia, D.F.**, Rietkerk, M., Fu, B. and Gao, G. 2024. "Quantity versus efficiency: contrasting self-organized xerophytic shrubs lead to different rain harvest strategies." Presented at the American Geophysical Union Annual Fall Meeting, Washington, DC, USA
- Iida, S., Nanko, K., **Levia, D.F.**, Shimizu, T., Iwagami, S., Oda, T., Miyazawa, Y., Kagawa, K., Kubota, T., Momiyama, H. and Yokoo, Y. 2024. "Canopy interception dynamics during rainfall events revealed by multi-sensor data." Presented at the American Geophysical Union Annual Fall Meeting, Washington, DC, USA
- Iida, S., Araki, M., Abe, T., Noguchi, S., **Levia, D.F.**, Nitta, K., Wada, S., Tamura, H., Narita, Y. and Kaneko, T. 2024. "Sap flow dynamics and transpiration in a Japanese cedar forest: effects of thinning." Presented at the Annual Meeting of the Japanese Society of Hydrology and Water Resources, Shibaura Institute of Technology, Tokyo, Japan
- O'Halloran, R.C., Chin, Yu-Ping and **Levia, D.F.** 2024. "Uncovering the redox chemistry of stemflow." Presented at the American Geophysical Union Annual Fall Meeting, Washington, DC, USA [**OSPA Winner, Hydrology Section**]
- Teh, D., Nakai, T. and **Levia, D.F.** 2024. "Measurements of detailed spatiotemporal variability in bark pH of a Japanese cedar tree bole in Xitou, Taiwan." Presented at the American Geophysical Union Annual Fall Meeting, Washington, DC, USA
- Zhang, Y., Yuan, C., Ning, C. and **Levia, D.F.** 2024. "Hydrological and chemical alterations of rainfall partitioning by vegetation in China." Presented at the American Geophysical Union Annual Fall Meeting, Washington, DC, USA
- Zhang, Y., Yuan, C., Chen, N. and **Levia, D.F.** 2024. "Rainfall partitioning by vegetation in China." Presented at the European Geosciences Union Annual Meeting, Vienna, Austria
- Rezaei, P.A.Z., Meydani, A., Khodaei, H., Tajrishy, M. and **Levia, D.F.** 2024. "A Decision Support System for Optimizing Water Consumption between Agriculture and Environment: An Integrated Water Resources Management Approach in the Urmia Lake Basin, Iran." Presented at the American Geophysical Union Annual Fall Meeting, Washington, DC, USA
- Iida, S., Shimizu, T., Tamai, K., Kabeya, N., Shimizu, A., Ito, E., Ohnuki, Y., Chann, S. and **Levia, D.F.** 2024. "Effects of El-Niño-induced extreme drought on water use in a dry evergreen forest." Presented at the 135<sup>th</sup> Annual Meeting of the Japanese Forest Society, Tokyo University of Agriculture, Tokyo, Japan
- Iida, S., Shimizu, T., Tamai, K., Kabeya, N., Shimizu, A., Araki, M., Ohnuki, Y., Toriyama, J., Kubota, T., Kenzo, T., Yamanaka, T., Chann, S. and **Levia, D.F.** 2024. "Effect of soil drought on transpiration in a dry deciduous forest in Cambodia." Presented at the Annual Meeting of the Japanese Association of Hydrological Sciences, University of Yamanashi, Yamanashi, Kofu, Japan

- Iida, S., Shimizu, T., Tamai, K., Kabeya, N., Shimizu, A., Araki, A., Ohnuki, Y., Ito, E., Toriyama, J., Kenzo, T., Kubota, T., Yamanka, T., Chann, S. and **Levia, D.F.** 2024. "Leaf phenology of overstory trees governs evapotranspiration in a dry deciduous forest in Cambodia." Presented at the Japan Geoscience Union (JpGU) Annual Meeting, Chiba, Japan
- Levia, D.F.**, Chang, J.L. and Epps, III, T.H. 2023. "The concentration of neutral sugars in stemflow with respect to tree species and canopy phenophase." Presented at the European Geosciences Union Annual Meeting, Vienna, Austria
- O'Halloran, R.C., **Levia, D.F.**, Guerard, J.J. and Chin, Yu-Ping. 2023. "Temporal changes in deciduous and coniferous stemflow dissolved organic matter composition." Presented at the European Geosciences Union Annual Meeting, Vienna, Austria
- Yuan, C., Guo, L., **Levia, D.F.**, Rietkerk, M., Fu, B. and Gao, G. 2023. "Quantity vs. efficiency: differing patterns of self-organized xerophytic shrubs lead to distinct rain harvesting strategies." Virtual presentation at the European Geosciences Union Annual Meeting **[Highlighted presentation]**
- Nanko, K., Keim, R.F., Hudson, S.A., Ebato, M. and **Levia, D.F.** 2023. "Rainwater canopy flowpaths estimated by raindrop measurements." Virtual presentation at the European Geosciences Union Annual Meeting
- Nanko, K., Keim, R.F., Hudson, S.A. and **Levia, D.F.** 2023. "Estimation of rainwater canopy flowpaths using raindrop data." The Japanese Forest Society Congress, Virtual presentation at the 134<sup>th</sup> Annual Japanese Forest Society Meeting
- Iida, S., Shimizu, T., Tamai, K., Kabeya, N., Shimizu, A., Ito, E., Ohnuki, Y., Chann, S. and **Levia, D.F.** 2023. "Effect of groundwater depletion caused by severe drought on transpiration activity in a dry evergreen forest." Presented at the Japan Geoscience Union (JpGU) Annual Meeting, Chiba, Japan
- Iida, S., Ohnuki, Y., Araki, M., Toriyama, J., Shimizu, T., Tamai, K., Kabeya, N., Shimizu, A., Ito, E., Kubota, T., Yamanaka, T., Kenzo, T., Chann, S. and **Levia, D.F.** 2023. "Dry season transpiration activity in a dry deciduous forest in Cambodia in relation to water source." Presentation at the Joint Meeting of Japan Society of Hydrology and Water Resources and Japanese Association of Hydrological Sciences, Nagasaki, Japan
- Nanko, K., Keim, R.F., Hudson, S.A. and **Levia, D.F.** 2022. "Estimation of canopy water flow paths utilizing differences in raindrop particle size distribution inside and outside the forest." Presentation at the Joint Meeting of Japan Society of Hydrology and Water Resources and Japanese Association of Hydrological Sciences, Kyoto, Japan
- Iida, S., Shimizu, T., Tamai, K., Kabeya, N., Shimizu, A., Ito, E., Ohnuki, Y., Chann, S. and **Levia, D.F.** 2022. "Effects of rainfall regime and leaf phenology on sap flux densities in a dry evergreen forest in Cambodia." Presentation at the Joint Meeting of Japan Society of Hydrology and Water Resources and Japanese Association of Hydrological Sciences, Kyoto, Japan

- Nanko, K., **Levia, D.F.** and Seitz, S. 2021. "Sustaining the soil: management strategies of forest-water interactions to protect forest soils." Virtual presentation at the 6<sup>th</sup> International Association for Hydro-Environment Engineering and Research (IAHR) Europe Congress, Warsaw, Poland
- Nanko, K., Tanaka, N., Leuchner, M. and **Levia, D.F.** 2021. "Variability of throughfall erosivity among crown positions in a teak plantation based on raindrop measurements and throughfall partitioning." Virtual presentation at the European Geosciences Union Annual Meeting
- Näthe, K., Tischer, A., **Levia, D.F.** and Michalzik, B. 2021. "A sequence of biotic and abiotic stressors and its effect on DOC and DN fluxes in throughfall and stemflow, and the surface pH of *Q. rubra* saplings in a greenhouse experiment." Virtual presentation at the Ecological Society of Germany, Austria, and Switzerland (GfÖ) Annual Meeting, Braunschweig, Germany
- Iida, S., Shimizu, T., Tamai, K., Kabeya, N., Shimizu, A., Ito, E., Ohnuki, Y., Chann, S. and **Levia, D.F.** 2021. "Contribution of understory vegetation to evapotranspiration in a tropical dry forest, Cambodia." Virtual presentation at the Japan Geoscience Union (JpGU) Annual Meeting
- Iida, S., Shimizu, T., Tamai, K., Kabeya, N., Shimizu, A., Ito, E., Ohnuki, Y., Chann, S. and **Levia, D.F.** 2021. "Evapotranspirational balance is underestimated by the sap flow technique in a tropical dry deciduous forest in Cambodia." Virtual presentation at the Joint Meeting of Japan Society of Hydrology and Water Resources and Japanese Association of Hydrological Sciences
- Levia, D.F.**, Creed, I.F., Hannah, D.M., Nanko, K., Boyer, E.W., Carlyle-Moses, D.E., van de Giesen, N., Grasso, D., Guswa, A.J., Hudson, J.E., Hudson, S.A., Iida, S., Jackson, R.B., Katul, G.G., Kumagai, T., Llorens, P., Lopes Ribeiro, F., Pataki, D.E., Peters, C.A., Sanchez Carretero, D., Selker, J.S., Tetzlaff, D., Zalewski, M. and Bruen, M. 2020. "Planetary resilience jeopardized by homogenization of the terrestrial water cycle." Virtual presentation at the American Geophysical Union Annual Fall Meeting
- Tucker, A.M., **Levia, D.F.**, Katul, G.G., Nanko, K. and Rossi, L.F. 2020. "A network model for stemflow solute transport." Virtual presentation at the American Geophysical Union Annual Fall Meeting
- Mrad, A., Katul, G.G., **Levia, D.F.**, Guswa, A.J., Boyer, E.W., Bruen, M., Carlyle-Moses, D.E., Coyte, R., Creed, I.F., van de Giesen, N., Grasso, D., Hannah, D.M., Hudson, J.E., Humphrey, V., Iida, S., Jackson, R.B., Kumagai, T., Llorens, P., Michalzik, B., Nanko, K., Peters, C.A., Selker, J.S., Tetzlaff, D., Zalewski, M. and Scanlon, B. 2020. "Peak grain forecasts in the U.S. High Plains amid withering waters." Virtual presentation at the American Geophysical Union Annual Fall Meeting
- Epps, III, T.H., Vlachos, D.G., **Levia, D.F.**, Wu, C., Kunjapur, A. and Korley, L. 2020. "GCR Mini-Symposium." Panelist, NSF-sponsored GCR Virtual Symposium, University of Delaware, Newark, Delaware, USA

- Saidin, Z.H., Onda, Y., Kato, H., Hudson, J.E., Nanko, K. and **Levia, D.F.** 2020. "Vertical variation in branchflow and stemflow cycling of radiocesium between coniferous and deciduous forests in Japan." Virtual presentation at the American Geophysical Union Annual Fall Meeting
- Iida, S. Shimizu, T., Shinohara, Y., Kumagai, T., Carlyle-Moses, D.E. and **Levia, D.F.** 2020. "Dynamic calibration of tipping-bucket rain gauges and flow meters for precise measurements of rainfall partitioning." Presented at the Japan Geoscience Union (JpGU) Annual Meeting, Chiba, Japan
- Saidin, Z.H., Onda, Y., Kato, H., Hudson, J.E., Nanko, K. and **Levia, D.F.** 2020. "Vertical variation in the depositional flux and biomass inventory of radiocesium through stemflow partitioning between tree canopy and trunk." Presented at the Japan Geoscience Union Annual Meeting, Chiba, Japan
- Carlyle-Moses, D.E., Llorens, P., Latron, J., Nathe, K., Nanko, K., Chang, J.L., Iida, S. and **Levia, D.F.** 2020. "Investigating stemflow infiltration areas and infiltration funneling ratios for American beech trees." Virtual presentation at the American Geophysical Union Annual Fall Meeting
- Llorens, P., Latron, J., Carlyle-Moses, D.E., Nathe, K., Chang, J.L., Nanko, K., Iida, S. and **Levia, D.F.** 2020. "Stemflow infiltration areas into forest soils around American beech trees." Abstract available (but not presented due to COVID-19 pandemic) during the virtual European Geosciences Union Annual Meeting
- Levia, D.F.**, Guswa, A.J., Tetzlaff, D., Selker, J.S., Carlyle-Moses, D.E., Boyer, E.W., Bruen, M., Cayuela, C., Creed, I.F., van de Giesen, N., Grasso, D., Hannah, D.M., Hudson, J.E., Hudson, S.A., Iida, S., Jackson, R.B., Katul, G.G., Kumagai, T., Llorens, P., Lopes Ribeiro, F., Michalzik, B., Nanko, K., Oster, C., Pataki, D.E., Peters, C.A., Rinaldo, A., Sanchez Carretero, D., Trifunovic, B. and Zalewski, M. 2019. "Ecohydrology in the 21<sup>st</sup> century: a convergence of opportunities for global sustainability and social justice and equity." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Nanko, K., **Levia, D.F.**, Iida, S., Sun, X., Shinohara, Y. and Sakai, N. 2019. "Effects of tree species, leaf states, and rainfall intensity on throughfall generation and throughfall partitioning by use of a large-scale rainfall simulator." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Levia, D.F.**, Campellone, S. and Montalto, F. 2019. "Sub-millimeter surface morphology of *Gleditsia triacanthos* L. (honeylocust) associated with foliar and bark interception storage capacities." Presented at the European Geosciences Union Annual Meeting, Vienna, Austria
- Dowtin, A.L. and **Levia, D.F.** 2019. "Exploring new linkages between spatial variability in metropolitan land use and nutrient cycling in the urban forest." Presented at the American Association of Geographers Annual Meeting, Washington, DC, USA

- Imamura, N., **Levia, D.F.**, Nanko, K., Tanaka, N. and Ohte, N. 2019. "Geographic factors explain the variability of atmospheric deposition of sulfur and nitrogen onto coniferous forests." Presented at the 60<sup>th</sup> Annual Meeting of the Japan Society for Atmospheric Environment, Tokyo University of Agriculture and Technology- Fuchu Campus, Tokyo, Japan
- Pinos, J., Latron, J., Cayuela, C., Nanko, K., **Levia, D.F.** and Llorens, P. 2019. "Can drop characteristics explain differences in isotopic composition between open rainfall and throughfall?" Presented at the European Geosciences Union Annual Meeting, Vienna, Austria
- Saidin, Z.H., Onda, Y., Kato, H., Kurihara, M., Nanko, K. and **Levia, D.F.** 2019. "Vertical variation in the transport and fate of radiocesium through the canopy via branchflow and stemflow." Presented at the European Geosciences Union Annual Meeting, Vienna, Austria
- Saidin, Z.H., Onda, Y., Kato, H., Kurihara, M., Nanko, K. and **Levia, D.F.** 2019. "Spatial variability of radiocesium deposition through the tree canopy via branchflow and stemflow." Presented at the Japan Geoscience Union Annual Meeting, Chiba, Japan
- Iida, S., Shimizu, T., Tamai, K., Kabeya, N., Shimizu, A., Ito, E., Ohnuki, Y., Chann, S. and **Levia, D.F.** 2019. "Contribution of understory vegetation to evapotranspiration processes in a lowland deciduous forest in Cambodia." Presented at the Japanese Society of Hydrology and Water Resources Annual Meeting, Chiba Institute of Technology, Chiba, Japan
- Iida, S., Carlyle-Moses, D.E., Germer, S., Llorens, P., Michalzik, B., Nanko, K., Tischer, A. and **Levia, D.F.** 2019. "Quantifying stemflow to better express its ecohydrological significance." Presented at the Japan Geoscience Union (JpGU) Annual Meeting, Chiba, Japan
- Iida, S., Carlyle-Moses, D.E., Germer, S., Llorens, P., Michalzik, B., Nanko, K., Tischer, A. and **Levia, D.F.** 2019. "Metrics to express the ecohydrological significance of stemflow." Presented at the 2019 Annual Meeting of the Japan Association of Hydrological Sciences, University of Tsukuba, Tsukuba, Japan [*Proc. Jpn. Hydrol. Sci. Assoc.* 34, 26-27]
- Levia, D.F.**, Iida, S., Nanko, K., Sun, X., Shimizu, T., Tamai, K. and Shinohara, Y. 2018. "The importance of gauge calibration in quantifying canopy interception loss." Presented at the American Geophysical Union Annual Fall Meeting, Washington, DC, USA
- Dowtin, A.L. and **Levia, D.F.** 2018. "Flux-based enrichment ratios for stemflow used to characterize and quantify spatial distribution of subcanopy solute fluxes within urban forest fragments." Presented at the American Geophysical Union Annual Fall Meeting, Washington, DC, USA
- Hudson, J.E., **Levia, D.F.**, Franca, A., Yoshimura, K., Biddle, J. and Gottel, N. 2018. "Examining the reciprocal effects of stemflow and corticular bacterial communities and their differences within urban and rural forests." Presented at the American Geophysical Union Annual Fall Meeting, Washington, DC, USA

- Shimizu, T., Iida, S., Kabeya, N., **Levia, D.F.**, Tamai, K., Chann, S. and Shimizu, A. 2018. "Changing evapotranspiration in a natural Cambodian tropical seasonal forest under the effect of a strong El Niño." Presented at the American Geophysical Union Annual Fall Meeting, Washington, DC, USA
- Nanko, K., Tanaka, N., Leuchner, M. and **Levia, D.F.** 2018. "Effect of throughfall type on drop size distribution and soil erosion potential in a teak plantation in northern Thailand." Presented at the American Geophysical Union Annual Fall Meeting, Washington, DC, USA
- Hudson, S.A., Llorens, P., Siegert, C.M., Downton, A.L., Van Stan, J.T. and **Levia, D.F.** 2018. "Stemflow infiltration and soil water potential dynamics on a forested hillslope in the Mid-Atlantic, USA." Presented at the American Geophysical Union Annual Fall Meeting, Washington, DC, USA
- Carlyle-Moses, D.E., Iida, S., Germer, S., Llorens, P., Michalzik, B., Nanko, K., Tischer, A. and **Levia, D.F.** 2018. "Righting a wrong: expressing stemflow commensurate with its ecohydrological importance." Presented at the American Geophysical Union Annual Fall Meeting, Washington, DC, USA
- Iida, S., Shimizu, T., Tamai, K., Kabeya, N., Shimizu, A., Ito, E., Ohnuki, Y., Chann, S. and **Levia, D.F.** 2018. "The importance of understory vegetation to evapotranspirational losses from a Cambodian deciduous forest." Presented at the American Geophysical Union Annual Fall Meeting, Washington, DC, USA
- Levia, D.F.**, Iida, S., Nanko, K., Sun, X., Shinohara, Y. and Sakai, N. 2018. "Disentangling the relative influence of canopy structure on stemflow: insights from a large-scale rainfall simulator and Bayesian statistics." Presented at the European Geosciences Union Annual Meeting, Vienna, Austria
- Nanko, K., **Levia, D.F.**, Iida, S., Sun, X., Shinohara, Y. and Sakai, N. 2018. "Importance of the canopy wet-up phase for throughfall drop generation revealed by use of a large-scale rainfall simulator." Presented at the European Geosciences Union Annual Meeting, Vienna, Austria
- Iida, S., **Levia, D.F.**, Nanko, K., Sun, X., Shinohara, Y. and Sakai, N. 2018. "Stemflow and canopy structure: revelations from the NIED large-scale rainfall simulator." Presented at the Japan Geoscience Union (JpGU) Annual Meeting, Chiba, Japan
- Iida, S., **Levia, D.F.**, Nanko, K., Sun, X., Shimizu, T., Tamai, K. and Shinohara, Y. 2018. "Effects of measurement errors among three tipping-bucket rain gauges on the evaluation of interception loss." Presented at the Japanese Society of Hydrology and Water Resources Annual Meeting, Mie University, Tsu, Japan
- Shimizu, T., Kobayashi, M., Iida, S. and **Levia, D.F.** 2018. "Application of practical and general calibration processes to large tipping-bucket flow meters." Presented at the 2018 Annual Meeting of the Japanese Association of Hydrological Sciences, Research Institute for Humanity and Nature, Kyoto, Japan

- Tucker, A.M., Rossi, L.F., Nanko, K. and **Levia, D.F.** 2018. "A network model for solute fluxes in stemflow." Presented at the Graduate Student Symposium, Department of Mathematical Sciences, University of Delaware, Newark, Delaware, USA
- Singla, B., Latron, J., Nanko, K., **Levia, D.F.**, Molina, A.J., Cayuela, C., Oromí, M. and Llorens, P. 2018. "Preliminary insights into the relationship between throughfall drop size and isotopic composition." Presented at the European Geosciences Union Annual Mtg, Vienna, Austria
- Singla, B., Pinos, J.A., Latron, J., Nanko, K., **Levia, D.F.**, Molina, A.J., Cayuela, C., Oromí, M., Gallart, F. and Llorens, P. 2018. "Relationship between throughfall drop size and isotopic composition: Preliminary insights from an ongoing experiment in Mediterranean conditions (Vallcebre, North-Eastern Spain)." Presented at the 17<sup>th</sup> Biennial Conference ERB 2018 (Euro-Mediterranean Network of Experimental and Representative Basins), Innovative Monitoring Techniques and Modelling Approaches for Analyzing Hydrological Processes in Small Basins, Technische Universität Darmstadt, Darmstadt, Germany
- Llorens, P., Cayuela, C., Sánchez-Costa, E., Molina, A.J., Gallart, F., **Levia, D.F.** and Latron, J. 2018. "Spatio-temporal variability of stable isotopes ( $^{18}\text{O}$  and  $^2\text{H}$ ) in soil and xylem waters under Mediterranean conditions." Presented at the European Geosciences Union Annual Meeting, Vienna, Austria
- Llorens, P., Molina, A.J., Cayuela, C., Sánchez-Costa, E., Gallart, F., **Levia, D.F.** and Latron, J. 2018. "Variación espacio-temporal de los isotopos estables de agua en el suelo y en el xilema. Estimación del patrón de extracción de agua del suelo en pinares en una pequeña cuenca de montaña." Presented at the XIV Simposio Internacional Hispano-Portugues de Relaciones Hidricas en las Plantas, Madrid, Spain
- Levia, D.F.**, Imamura, N., Toriyama, J., Kobayashi, M. and Nanko, K. 2017. "Spatial heterogeneity of radiocesium in the soil of a broadleaved deciduous forest: the marked role of stemflow." Presented at the European Geosciences Union Annual Meeting, Vienna, Austria
- Levia, D.F.**, Iida, S., Nanko, K., Sun, X., Shinohara, Y. and Sakai, N. 2017. "Use of a large-scale rainfall simulator reveals novel insights into stemflow generation." Presented at the American Geophysical Union Annual Fall Meeting, New Orleans, Louisiana, USA
- Dowtin, A.L. and **Levia, D.F.** 2017. "Flux-based enrichment ratios of stemflow found to vary significantly within urban fragments and along an urban-to-rural gradient." Presented at the American Geophysical Union Annual Fall Meeting, New Orleans, Louisiana, USA
- Dowtin, A.L. and **Levia, D.F.** 2017. "Hydrologic fluxes from mixed deciduous urban forest fragments in Wilmington, Delaware." Presented at the American Association of Geographers Annual Meeting, Boston, Massachusetts, USA
- Katsuyama, M., **Levia, D.F.** and Tani, M. 2017. "A worldwide groundwater isoscape: history of the water cycle stored in bottled water." Presented at the American Geophysical Union Annual Fall Meeting, New Orleans, Louisiana, USA

- Wheeler, K.I., **Levia, D.F.** and Hudson, J.E. 2017. "Using parallel factor analysis modeling (PARAFAC) and self-organizing maps to track senescence-induced patterns in leaf litter leachate." Presented at the American Geophysical Union Annual Fall Meeting, New Orleans, Louisiana, USA [**OSPA Winner, Biogeosciences Section**]
- Cayuela, C., **Levia, D.F.**, Sánchez-Costa, E., Latron, J. and Llorens, P. 2017. "Particulate matter fluxes in throughfall and stemflow under oak and pine stands." Presented at the European Geosciences Union Annual Meeting, Vienna, Austria
- Nanko, K., **Levia, D.F.**, Iida, S., Sun, X., Shinohara, Y. and Sakai, N. 2017. "Temporal sequencing of throughfall generation as revealed by use of a large-scale rainfall simulator." Presented at the American Geophysical Union Annual Fall Meeting, New Orleans, Louisiana, USA
- Iida, S., **Levia, D.F.**, Nanko, K., Sun, X., Shinohara, Y. and Sakai, N. 2017. "Effects of rainfall intensity and tree species in stemflow production as revealed by a rainfall simulation experience." Presented at the 128<sup>th</sup> Annual Meeting of the Japanese Forest Society, Kagoshima University, Kagoshima, Japan
- Hudson, J.E., **Levia, D.F.**, Wheeler, K.I., Winters, C., Vaughan, M., Chace, J. and Sleeper, R. 2017. "American beech leaf-litter leachate chemistry: effects of geography and phenophase." Presented at the American Geophysical Union Annual Fall Meeting, New Orleans, Louisiana, USA
- Michalzik, B., Bischoff, S., **Levia, D.F.**, Schwarz, M., Escher, P., Wilcke, W., Thieme, L., Kerber, K., Kaupenjohann, M. and Siemens, J. 2017. "Effects of silvicultural management intensity on fluxes of dissolved and particulate organic matter in 27 forest sites of the Biodiversity Exploratories." Presented at the European Geosciences Union Annual Meeting, Vienna, Austria
- Iida, S., Shimizu, T., Araki, M., Tamai, K., Kabeya, N., Shimizu, A. and **Levia, D.F.** 2017. "Evaluation of rainfall storage capacity in a mature forest of Japanese cedar." Presented at the 2017 Annual Meeting of the Japanese Association of Hydrological Sciences, Komazawa University, Tokyo, Japan
- Seybold, E.C., Gold, A., Inamdar, S., Pradhanang, S., Bowden, W.B., Vaughan, M., Addy, K., Shanley, J., Vermilyea, A., Sleeper, R., **Levia, D.**, Adair, C., Wemple, B. and Schroth, A.W. 2017. "Effects of land use on the timing and magnitude of dissolved organic carbon and nitrate fluxes: a regional analysis of high-frequency sensor measurements from forested, agricultural, and urban watersheds." Presented at the American Geophysical Union Annual Fall Meeting, New Orleans, Louisiana, USA
- Levia, D.F.**, Hudson, S.A., Llorens, P. and Nanko, K. 2016. "Disdrometers: a useful tool to measure throughfall drop size distributions." Presented at the Irish National Hydrology Conference 2016, Athlone, Co. Roscommon, Ireland
- Levia, D.F.**, Köhler, S., Jungkunst, H.F. and Gerold, G. 2016. "Mapping bark pH to better understand the cortisphere." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA

- Wheeler, K.I., **Levia, D.F.** and Vargas, R. 2016. "Changes in autumnal leaf reflectance measurements of deciduous trees in relation to nitrogen resorption efficiencies." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Bischoff, S., **Levia, D.F.**, Nieschulze, J., Schulz, F. and Michalzik, B. 2016. "Long-term persistence of throughfall yield assessed by small footprint LiDAR data." Presented at the European Geosciences Union Annual Meeting, Vienna, Austria
- Iida, S., **Levia, D.F.**, Shimizu, A., Shimizu, T., Tamai, K., Nobuhiro, T., Kabeya, N., Noguchi, S., Sawano, S., and Araki, M. 2016. "Rainfall interception at the intrastorm scale: insights from a mature coniferous forest." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Rosier, C., **Levia, D.F.**, Van Stan, J.T., Aufdenkampe, A.K. and Kan, J. 2016. "Seasonal dynamics of the soil microbial community structure within the proximal area of tree boles: possible influence of stemflow." Presented at the Third Annual University of Delaware Microbial Systems Symposium, Newark, Delaware, USA
- Dowtin, A.L., White, H.W. and **Levia, D.F.** 2016. "Synergistic approaches to environmental research, planning, and implementation: how urban trees united the community, university, and city government in Wilmington, Delaware." Presented at the Annual Conference of the Association for Environmental Studies and Sciences, American University, Washington, DC, USA
- Näthe, K., Michalzik, B., **Levia, D.F.** and Steffens, M. 2016. "Ground-fire effects on the composition of dissolved and total organic matter in forest floor and soil solutions from Scots pine forests in Germany: new insights from solid state  $^{13}\text{C}$  NMR analysis." Presented at the European Geosciences Union Annual Meeting, Vienna, Austria
- Hudson, J.E., Wheeler, K.I., **Levia, D.F.**, Winters, C., Inamdar, S.P., Vaughan, M. and Chace, J. 2016. "Leaf leachate chemistry: regional variation across three watersheds in the northeastern United States." Presented at Successes, Challenges, and Opportunities of Multi-State Collaborations Annual NEWRnet Meeting, Narragansett, Rhode Island, USA
- Iida, S., Nanko, K., Shinohara, Y., Sun, X. and **Levia, D.F.** 2016. "Dynamic calibration of tipping-bucket rain gages." Presented at the 2016 Annual Meeting of the Japanese Association of Hydrological Sciences, Hosei University, Tokyo, Japan
- Karwan, D.L., Pizzuto, J.E., Aalto, R., Marquard, J., Aufdenkampe, A.K., Harpold, A., Benthem, A., Skalak, K., **Levia, D.F.** and Siegert, C.M. 2016. "Short-term fallout radionuclide ratios and mass balance identify new suspended sediments of channel origin and importance of catchment flowpath." Presented at the European Geosciences Union Annual Meeting, Vienna, Austria
- Levia, D.F.** 2015. "Planning and implementing an honors degree in environmental science curricula: a case study from the University of Delaware, USA." Presented at the European Geosciences Union Annual Meeting, Vienna, Austria

- Levia, D.F.** and Germer, S. 2015. “A review of stemflow in forests and shrublands.” Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Levia, D.F.**, Michalzik, B., Bischoff, S., Näthe, K., Gruselle, M.C., Legates, D.R. and Richter, S. 2015. “Particulate matter in terrestrial solutions: insights from a European beech forest in Germany.” Presented at the European Geosciences Union Annual Meeting, Vienna, Austria
- Dowtin, A.L. and **Levia, D.F.** 2015. “Employing a dense monitoring network to quantify and characterize spatial variability of hydrologic and solute flux in urban forest fragments.” Presented at UrbanRain15:10th International Conference on Precipitation in Urban Areas, Pontresina, Switzerland
- Dowtin, A.L. and **Levia, D.F.** 2015. “Assessing the hydrological ecosystem services of metropolitan Wilmington, Delaware’s urban forest: initial findings from *in situ* observations.” Presented at the 2015 Annual Meeting of the Association of American Geographers, Chicago, Illinois, USA
- Hudson, S.A., **Levia, D.F.** and Nanko, K. 2015. “Examining the role of meteorological conditions on throughfall drop sizes.” Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Shinohara, Y., **Levia, D.F.**, Komatsu, H., Nogata, M. and Otsuki, K. 2015. “Application of three canopy interception models in a Japanese cedar (*Cryptomeria japonica* D. Don) forest before and after intensive thinning.” Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Michalzik, B., **Levia, D.F.**, Bischoff, S. and Näthe, K. 2015. “Aphid infestation affecting the biogeochemistry of European beech saplings.” Presented at the Annual Meeting of the German Soil Science Society (Deutsche Bodenkundliche Gesellschaft), Munich, Germany
- Siegert, C., **Levia, D.**, Dowtin, A., Hudson, S. and Linhoss, A. 2015. “Using sensitivity analysis and fine-scale field measurements to understand how canopy interception models function.” Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Hudson, J.E., **Levia, D.F.**, Hudson, S.A., Bais, H. and Legates, D.R. 2015. “Phenoseasonal variability of subcanopy PAR and the effects of photointensity and photoperiod on the physiological ecology of *Lindera benzoin*.” Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Tanaka, N., **Levia, D.F.**, Igarashi, Y., Yoshifuji, N., Tanaka, K., Tantasirin, C., Nanko, K., Suzuki, M. and Kumagai, T. 2015. “Factors governing stemflow production from plantation grown teak trees in Thailand.” Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA

- Nanko, K., Hudson, S.A. and **Levia, D.F.** 2015. “Differences in throughfall drop generation processes in the presence and absence of foliage.” Presented at the 2015 Annual Conference of Japan Society of Hydrology and Water Resources, Tokyo, Japan
- Wheeler, K.I., Hudson, J.E., **Levia, D.F.**, Winters, C., Inamdar, S.P., Vaughan, M. and Chace, J. 2015. “Leaf leachate chemistry: regional variation across three watersheds in the northeastern United States.” Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA [**OSPA Winner, Hydrology Section**]
- Iida, S., Shimizu, T., Tamai, K., Kabeya, N., Shimizu, A., Nobuhiro, T. and **Levia, D.F.** 2015. “Dynamics of intensity of rainfall interception in a stand of mature Japanese cedar.” Presented at the 2015 Annual Meeting of the Japanese Association of Hydrological Sciences, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan
- Karwan, D., Pizzuto, J., Aalto, R., Marquard, J., Aufdenkampe, A., Benthem, A., Skalak, K., **Levia, D.**, and Siegert, C. 2015. “Short-term fallout radionuclide ratios and mass balance identify new suspended sediments of channel origin.” Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Vaughan, M., Schroth, A., Bowden, W., Shanley, J., Vermilyea, A., Sleeper, R., Gold, A., Pradhanang, S., Addy, K., Inamdar, S., **Levia, D.F.**, Rowland, R. and Winters, C. 2015. “Regional *in-situ* optical water quality sensor network quantifies influence of land use and seasonality on storm event nitrate and dissolved organic carbon loading.” Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Inamdar, S., Vaughan, M., Rowland, R., Winters, C., Addy, K., Schroth, A., Gold, A., Bowden, W., Vermilyea, A., Parr, T., Andres, S. and **Levia, D.F.** 2015. “‘Hot moments’ of carbon and nitrogen in streams: key insights from *in-situ*, high frequency optical sensors from the North East Water Resources Network (NEWRnet).” Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Levia, D.F.** and Shiklomanov, A.N. 2014. “Stemflow acid neutralization capacity in a broadleaved deciduous forest: the role of edge effects.” Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Michalzik, B. and **Levia, D.F.** 2014. “Aphid infestation affecting the nutrient dynamics of European beech saplings.” Presented at the Ecological Society of Germany, Austria, and Switzerland (GfÖ) Annual Meeting, Hildesheim, Germany
- Dowtin, A.L. and **Levia, D.F.** 2014. “Quantifying the hydrological ecosystem services of Wilmington, Delaware’s urban forest: a field-based approach.” Presented at the 2014 American Water Resources Association (AWRA) Annual Water Resources Conference, Tysons Corner, Virginia, USA
- Uber, M., **Levia, D.F.**, Zimmermann, B. and Zimmermann, A. 2014. “The influence of tree morphology on stemflow generation in a tropical lowland rainforest.” Presented at the European Geosciences Union Annual Meeting, Vienna, Austria

- Rosier, C.L., **Levia, D.F.**, Van Stan, J.T. and Kan, J. 2014. "Seasonal dynamics of soil microbial community structure in the proximal area of tree boles: possible influence of stemflow." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Siegert, C.M., **Levia, D.F.**, Leathers, D.J., Van Stan, J.T. and Mitchell, M.J. 2014. "Identifying patterns of forest hydrologic and biogeochemical fluxes using weather map classification in a Mid-Atlantic deciduous forest." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Tanaka, N., **Levia, D.F.**, Igarashi, Y., Nanko, K., Yoshifuji, N., Tanaka, K., Tantasirin, C., Suzuki, M. and Kumagai, T. 2014. "Throughfall under a teak plantation in Thailand: a multifactorial analysis on the effects of canopy phenology and meteorological conditions." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Hudson, S.A., Nanko, K. and **Levia, D.F.** 2014. "Throughfall drop size distribution in relation to leaf canopy state." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Olsoy, P.J., Mitchell, J.J., Glenn, N.F., **Levia, D.F.** and Clark, P.E. 2014. "Estimation of big sagebrush leaf area index with terrestrial laser scanning." Presented at the Society of Ecological Restoration Regional Conference: Collaborative Restoration 2014, Redmond, Oregon, USA
- Gold, A. J., Schroth, A.W., Inamdar, S.P., Addy, K., Bowden, W.B., Andres, S., **Levia, D.F.**, Vermilyea, A., Leathers, D.J., Garfield, M., Chace, J., Jerram, A., Vaughan, M. and Shanley, J.B. 2014. "North East Water Resources Network (NEWRnet): a real-time water quality sensor network to study impacts of climate variability for Delaware, Rhode Island and Vermont." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Levia, D.F.** 2013. "A successful programmatic structure and strategies to attract and educate students in earth and environmental sciences: an example from the University of Delaware, USA." Presented at the European Geosciences Union Annual Meeting, Vienna, Austria
- Levia, D.F.**, Michalzik, B., Bischoff, S., Nätke, K., Gruselle, M.C-. and Richter, S. 2013. "Geometric configurations of particulate matter in forest ecosystems: measurement and cross-scale modeling." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Frost, E.E. and **Levia, D.F.** 2013. "Boron stemflow chemistry in relation to species and season in a temperate deciduous forest." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA

- Siegert, C.M., **Levia, D.F.**, Leathers, D.J. and Zhang, F. 2013. "Synoptic climatological approaches to assessing subcanopy hydrologic and nutrient fluxes in a temperate deciduous forest." Presented at the Northeastern Ecosystem Research Cooperative (NERC), Saratoga Springs, New York, USA
- Karwan, D.L., **Levia, D.F.**, Siegert, C., Pizzuto, J. and Aufdenkampe, A. 2013. "Beryllium-7 (<sup>7</sup>Be) wet deposition variation with storm synoptic classification and canopy presence in the mid-Atlantic USA." Presented at Soil to Sea Geomorphology-2013 Meeting, Baltimore, Maryland, USA
- Friesen, J., Van Stan, J., Martin, K., Jarvis, M., Lundquist, J. and **Levia D.** 2013. "Evaluation of an instrumental method to reduce error in canopy water storage estimates via mechanical displacement." Presented at the European Geosciences Union Annual Meeting, Vienna, Austria
- Levia, D.F.** and Michalzik, B. 2012. "Alterations in the nitrogen dynamics of European beech trees infested by the woolly beech aphid." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Siegert, C.M., **Levia, D.F.** and Leathers, D.J. 2012. "Synoptic climatological approaches to assessing subcanopy hydrologic and nutrient fluxes in a temperate deciduous forest." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Karwan, D.L., **Levia, D.F.**, Siegert, C.M. and Pizzuto, J.E. 2012. "Beryllium-7 wet deposition in open precipitation and canopy throughfall." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Van Stan, J.T., Martin, K., Friesen, J., Jarvis, M.T., Lundquist, J.D. and **Levia, D.F.** 2012. "Instrumental method to reduce error in canopy water storage estimates via mechanical displacement." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Rosier, C.L., Aufdenkampe, A., Kan, J., **Levia, D.** and Van Stan, J. 2012. "Assessing the effects of canopy-derived nutrient fluxes on key soil ecosystem services." Presented at White Clay Wild and Scenic Watershed Summit, Stroud Water Research Center, Avondale, Pennsylvania, USA
- Frost, E.E. and **Levia, D.F.** 2012. "Hydrologic response of stemflow inputs to varying levels of tree mortality in a broadleaved deciduous forest." Presented at the 108th Annual Meeting of the Association of American Geographers, New York, New York, USA
- Siegert, C.M., **Levia, D.F.** and Leathers, D.J. 2012. "Using synoptic climatology to forecast forest subcanopy hydrologic flux." Presented at the 108th Annual Meeting of the Association of American Geographers, New York, New York, USA

- Van Stan, J.T., Siegert, C.M., **Levia, D.F.** and Scheick, C.E. 2012. "Effects of directional wind-driven rainfall on the spatial variability and magnitude of stemflow inputs to forest soils from co-dominant species of differing crown characteristics." Presented at the 108th Annual Meeting of the Association of American Geographers, New York, New York, USA
- Levia, D.F.**, Van Stan, J.T., Inamdar, S.P., Mitchell, M.J., Scheick, C.E. and McHale, P.J. 2011. "Aluminum solute chemistry in stemflow in relation to season and tree species in a mid-Atlantic broadleaved deciduous forest." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Frost, E.E. and **Levia, D.F.** 2011. "Hydrological and biogeochemical variation of stemflow from live, stressed, and dead codominant deciduous canopy trees." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Van Stan, J.T., **Levia, D.F.**, Inamdar, S.P., Mitchell, M.J. and Leopri-Bui, M.D. 2011. "The effects of season and storm characteristics on throughfall solute washoff and leaching dynamics from a temperate broadleaved deciduous canopy." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Inamdar, S.P., Singh, S., Dhillon, G., Mitchell, M.J., **Levia, D.F.**, Scott, D. and Bais, H.P. 2011. "Seasonal patterns of stream water DOM composition- hydrologic and biogeochemical controls." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Inamdar, S.P., Singh, S., **Levia, D.F.**, Scott, D., Mitchell, M.J. and Bais, H. 2011. "Dissolved organic matter responses for extreme storm events: an indicator of things to come? Presented at the 2011 Gordon Research Conference on Catchment Science: Interactions of Hydrology, Biology, and Geochemistry, Lewiston, Maine, USA
- Van Stan, J.T., **Levia, D.F.**, Jarvis, M.T. and Friesen, J. 2011. "Reducing error associated with compression derived measurements of whole-tree rainfall interception within the Christina River Basin Critical Zone Observatory." Presented at the 2011 National CZO All-Hands Meeting, Tucson, Arizona, USA
- Inamdar, S.P., Singh, S., **Levia, D.F.** and Mitchell, M.J. 2011. "Fluorescence characteristics and sources of dissolved organic matter for stream water during storm events and baseflow." Presented at the 2011 National CZO All-Hands Meeting, Tucson, Arizona, USA
- Yoo, K., Aufdenkampe, A., Inamdar, S., **Levia, D.**, Michael, H. and Imhoff, P. 2011. "Short-term and long-term weathering and soil production: responses to land use changes." Presented at the 2011 National CZO All-Hands Meeting, Tucson, Arizona, USA
- Hicks, S., Aufdenkampe, A., Lazareva, O., Montgomery, D., Kaplan, L., Newbold, D., **Levia, D.** and Sparks, D. 2011. "A wireless environmental sensor network based on open-source electronics for the Christina River Basin CZO." Presented at the 2011 National CZO All-Hands Meeting, Tucson, Arizona, USA

- Sparks, D.L., Aufdenkampe, A., Lazareva, O., Hicks, S., Montgomery, D., Arscott, D., Kaplan, L., Newbold, D. and **Levia, D.** 2011. "Christina River Basin Critical Zone Observatory (CRB-CZO): Wireless Environmental Sensor Network." Presented at University of Delaware on the Hill (March 8), Washington, DC, USA
- Levia, D.F.**, Van Stan, J.T., Siegert, C.M., Inamdar, S.P., Mitchell, M.J., Mage, S.M. and McHale, P.J. 2010. "Atmospheric deposition and corresponding variability of throughfall and stemflow chemistry across temporal scales in a mid-Atlantic broadleaved deciduous forest." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Levia, D.F.**, Van Stan, J.T., Siegert, C.M., Inamdar, S.P., Mitchell, M.J., Mage, S.M. and McHale, P.J. 2010. "Stemflow: a hydrological control on the input of canopy derived fluxes to forest soils." Presented at the 2010 Latsis Symposium on Ecohydrology, Lausanne, Switzerland
- Siegert, C. M. and **Levia, D.F.** 2010. "Microclimatological and physiological controls of stomatal conductance and transpiration of co-occurring seedlings with varying shade tolerance." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Van Stan, J.T., **Levia, D.F.**, Inamdar, S.P., Mitchell, M.J. and Mage, S.M. 2010. "Temporal variability of stemflow dissolved organic carbon (DOC) concentrations and quality from morphologically contrasting deciduous canopies." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Van Stan, J.T., Stotts, S.N., **Levia, D.F.**, Pizzuto, J.E. and Sparks, D.L. 2010. "Christina River Basin Critical Zone Observatory: preliminary results from the vegetation survey for validation of airborne LiDAR imagery." Presented at the 3rd National CZO Meeting, Boulder, Colorado, USA
- Inamdar, S.P., Singh, S., Dutta, S., Mitchell, M.J., **Levia, D.F.**, Scott, D. and Bais, H. 2010. Storm-event patterns and sources of dissolved organic matter (DOM) for stream runoff in a forested, mid-Atlantic watershed. Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Singh, S., Inamdar, S.P., Finger, N., Mitchell, M.J., **Levia, D.F.**, Scott, D. and Bais, H. 2010. "Quality of dissolved organic matter (DOM) in watershed compartments for a forested mid-Atlantic watershed." Presented at the American Geophysical Union Annual Fall Meeting, San Francisco, California, USA
- Aufdenkampe, A.K., Hicks, S., Montgomery, D.S., Arscott, D.B., Kaplan, L.A., Newbold, J.D., **Levia, D.F.** and Leathers, D.J. 2010. "Advanced sensor network for real-time observations of hydrological and biogeochemical processes in the Christina River Basin CZO." Presented at the 3rd National CZO Meeting, Boulder, Colorado, USA
- Hellström, R.A., Higgins, A., Ferris, D., Mark, B. and **Levia, D.** 2010. "Impacts of complex terrain on evapotranspiration within a tropical alpine valley in the Peruvian Andes." Presented at the 67th Annual Eastern Snow Conference, Hancock, Massachusetts, USA

- Levia, D.F.**, Van Stan, J.T., Mage, S.M. and Hauske, P.W. 2009. "Spatio-temporal variability of stemflow volume in a beech-yellow poplar forest in relation to tree species and size." Presented at the American Geophysical Union Joint Assembly, Meeting of the Americas, Toronto, Ontario, Canada
- Van Stan, J.T., Jarvis, M.T. and **Levia, D.F.** 2009. "An automated instrument for measurement of bark microrelief." Presented at the American Geophysical Union Joint Assembly, Meeting of the Americas, Toronto, Ontario, Canada [**OSPA Winner, Hydrology Section**]
- Siegert, C.M. and **Levia, D.F.** 2009. "An investigation into the transpiration and stomatal conductance rates of three co-occurring seedling species of varying shade tolerance." Presented at the 105th Annual Meeting of the Association of American Geographers, Las Vegas, Nevada, USA
- Frost, E.E., **Levia, D.F.** and Willmott, C.J. 2008. "Variability of throughfall inputs in a southern Illinois broadleaved deciduous forest." Presented at the 104th Annual Meeting of the Association of American Geographers, Boston, Massachusetts, USA
- Levia, D.F.** and Quiring, S.M. 2007. "Assessment of student learning in a hybrid PBL capstone seminar." Presented at the 103rd Annual Meeting of the Association of American Geographers, San Francisco, California, USA
- Levia, D.F.** 2006. "Base cation solute enrichment of winter throughfall flux in a deciduous forest in relation to meteorological conditions." Presented at the 63rd Annual Eastern Snow Conference, Newark, Delaware, USA
- Levia, D.F.** 2006. "Intraspecific variation of base cation solute enrichment of winter throughfall flux in a deciduous forest." Presented at the 102nd Annual Meeting of the Association of American Geographers, Chicago, Illinois, USA
- Underwood, S.J. and **Levia, D.F.** 2006. "Solar radiation attenuation during fog episodes in the Central Valley of California." Presented at the 69th Annual Meeting of the Association of Pacific Coast Geographers, Eugene, Oregon, USA
- Levia, D.F.** 2005. "Geography in higher education: trends and issues." Panelist at the 101st Annual Meeting of the Association of American Geographers, Denver, Colorado, USA
- Levia, D.F.** and Underwood, S.J. 2005. "Hydrological research and the status of physical geography journals: increasing the impact of physical geography in the academy." Presented at the 101st Annual Meeting of the Association of American Geographers, Denver, Colorado, USA
- Levia, D.F.** and Frost, E.E. 2004. "Assessment of climatic suitability for the expansion of *Solenopsis invicta* Buren in Oklahoma using three general circulation models." Presented at the 100th Annual Meeting of the Association of American Geographers, Philadelphia, Pennsylvania, USA

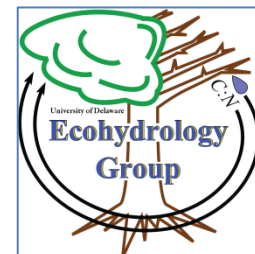
- Levia, D.F.** 2003. "Differential winter stemflow generation under contrasting storm conditions in a southern New England broadleaved deciduous forest." Presented at the 60th Annual Eastern Snow Conference, Sherbrooke, Quebec, Canada
- Levia, D.F.** 2003. "Employing field experimentation methods during winter: an example of nitrate sequestration by corticolous macrolichens during winter precipitation events." Presented at the 99th Annual Meeting of the Association of American Geographers, New Orleans, Louisiana, USA
- Kidane-Miriam, T. and **Levia, D.F.** 2003. "Political ecology of land degradation in Ethiopia." Presented at the 99th Annual Meeting of the Association of American Geographers, New Orleans, Louisiana, USA
- Levia, D.F.** and Herwitz, S.R. 2002. "Winter chemical leaching from deciduous tree branches as a function of branch inclination angle in central Massachusetts." Presented at the 59th Annual Eastern Snow Conference, Stowe, Vermont, USA
- Levia, D.F.** 2002. "Detecting farmland prone to residential development in small towns." Presented at the 98th Annual Meeting of the Association of American Geographers, Los Angeles, California, USA
- Levia, D.F.** 2001. "Influence of global change and species composition of a broadleaved deciduous forest on biogeochemical cycling." Presented at the 97th Annual Meeting of the Association of American Geographers, New York, New York, USA
- Levia, D.F.** 2000 "Winter stemflow leachate dynamics from deciduous canopy trees in relation to precipitation event characteristics." Presented at the 57th Annual Eastern Snow Conference, Syracuse, New York, USA
- Ault, H. K., Herwitz, S.R. and **Levia, D.F.** 2000. "Modeling the geometry of leafless canopy trees for the determination of total woody surface area and its influence on leachate chemistry." Presented at the 9th International Conference on Geometry and Graphics, Johannesburg, South Africa
- Levia, D.F.** and Herwitz, S.R. 1999. "Nutrient cycling in deciduous forests during dormancy: implications of global change and increased frequency of mixed precipitation events." Presented at Annual Meeting of the New England-Saint Lawrence Valley Geographical Society, Farmington, Maine, USA
- Levia, D.F.** 1998. "Farmland conversion and residential development in north central Massachusetts." Presented at the 94th Annual Meeting of the Association of American Geographers, Boston, Massachusetts, USA

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## UD ECOHYDROLOGY GROUP

### Current members:

Delphis F. Levia (PI)



Sahar Khodaei (M.S. student)  
Amirreza Meydani (Ph.D. student)

**Former and affiliate members:**

Carles Cayuela (Visiting Scholar, Spain)	Kerstin Nätthe (Postdoctoral Fellow, Germany)
Jeffrey L. Chang (M.S.)	Kazuki Nanko (Visiting Fellow, Japan)
Asia L. Dowtin (Ph.D.)	Robyn C. O'Halloran (M.S., Ph.D.)
Ethan E. Frost (M.S., Ph.D.)	Andrew S. Price (B.S.)
John C. Fry (M.S.)	Alexander C. Remar (M.S.)
Janice E. Hudson (M.S., Ph.D.)	Nathaly Rodriguez (B.S.)
Sean A. Hudson (M.S., Ph.D.)	Carl L. Rosier (Postdoctoral researcher)
Katherine T. Junghenn (B.S.)	William J. Ryan, III (M.S.)
Diana L. Karwan (Postdoctoral researcher)	Carrie E. Scheick (B.S.)
Patrick W. Kelley-Hauske (Non-degree)	Ilana N. Schnauffer (B.S.)
Michelle D. Lepori-Bui (B.S.)	Alexey N. Shiklomanov (B.S.)
Pilar Llorens (Visiting Fellow, Spain)	Courtney M. Siegert (M.S., Ph.D.)
Alyssa N. Lutgen (B.S.)	John T. Van Stan, II (M.S., Ph.D.)
Susanna M. Mage (B.S.)	Kathryn I. Wheeler (B.S.)
	Fen Zhang (Visiting Scholar, China)

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**GRADUATE TEACHING EXPERIENCE**

**Graduate students:**

**Chair:**

Sahar Khodaei (M.S. student)- throughfall partitioning  
Amirreza Meydani (Ph.D. student)- water and disease

**Serve as committee member or external committee member or external examiner (\*):**

Alison J. Shapiro (Ph.D. student, Chemical Engineering, University of Delaware)  
Brandon Makar (M.Sc. student, Thompson Rivers University, BC, Canada)\*

**Postdoctoral researchers completed:**

Diana L. Karwan (Associate Professor, University of Minnesota)  
Kerstin Nätthe (Postdoctoral Fellow, Friedrich Schiller University Jena, Germany)  
Carl L. Rosier (Postdoctoral researcher, Oklahoma State University)

**Graduate students completed:**

**Served as committee chair:**

Robyn C. O'Halloran (Ph.D., 2025)  
Employment: Delaware Technical Community College, Instructor  
Thesis: *Demystifying water and carbon cycling of ghost forests: harbingers of coastal change in a warming world*

Robyn C. O'Halloran (M.S., 2023)

Employment: University of Delaware, Research Assistant

Thesis: *Temporal dynamics in optical properties of tree-derived dissolved organic matter among four co-occurring tree species*

Jeffrey L. Chang (M.S., 2022)

Employment: Environmental engineer, Brown and Caldwell

Thesis: *Neutral sugar composition of stemflow among four co-occurring tree species in northeastern Maryland, USA*

Sean A. Hudson (Ph.D., 2019)

Employment: Senior GIS analyst, Fischer Group

Dissertation: *Soil water potential response to double funneling of precipitation on a forested, mid-Atlantic hillslope*

Janice E. Hudson (Ph.D., 2019)

Employment: Visiting Assistant Professor, Miami University

Dissertation: *Tree-mediated water-nutrient fluxes from the microbial to regional scale: insights from mixed deciduous forests in the northeastern United States*

Asia L. Dowtin (Ph.D., 2018)

Employment: Associate Professor, Michigan State University

Dissertation: *An investigation into the effects of forest fragment structure and spatial context on rainfall redistribution and solute flux within a city and along an urban to rural gradient*

Kerstin Nätke (Dr. rer. nat., 2018), Co-Chair, Friedrich Schiller University Jena

Employment: Researcher, Albert Ludwig University of Freiburg

Dissertation: *Effects of low-intensity prescribed surface fires on the cycling of organic matter and elements in coniferous forests in Germany*

Sean A. Hudson (M.S., 2016)

Thesis: *The effects of meteorological conditions on throughfall drop size distribution under a broadleaved deciduous forest canopy in northeastern Maryland*

Janice E. Hudson (M.S., 2015)

Thesis: *Understory variability of photosynthetically active radiation in a mid-Atlantic deciduous forest and its effects on *Lindera benzoin* L. Blume (northern spicebush)*

Courtney M. Siegert (Ph.D., 2013)

Employment: Professor, Mississippi State University

Dissertation: *Synoptic climatological approaches to assessing subcanopy hydrologic and nutrient fluxes in eastern deciduous forests*

Alexander C. Remar (M.S., 2013)

Employment: Lettis Consultants International, Earth science consultant

Thesis: *Multivariate geospatial detection and quantification of ecological thresholds corresponding to dispersion of Castor canadensis Kuhl. (North American Beaver) in central Massachusetts*

John T. Van Stan, II (Ph.D., 2012)

Employment: Associate Professor, Cleveland State University

Dissertation: *Controls and dynamics of canopy-derived dissolved organic matter from co-dominant broadleaved deciduous canopies to the soil of a temperate catchment in the northeastern United States*

Ethan E. Frost (Ph.D., 2011)

Employment: Assistant Professor, Millersville University

Dissertation: *Hydrological and biogeochemical variation of stemflow from live, stressed, and dead Fagus grandifolia Ehrh. [American beech] and Liriodendron tulipifera L. [yellow poplar] trees in a mid-Atlantic broadleaved deciduous forest*

William J. Ryan, III (M.S., 2011)

Employment: The Academy of Natural Sciences, Senior Ecologist

Thesis: *Variation in stemflow volume and chemistry in black birch (Betula lenta L.) in relation to tree size and associated bark textural changes*

John C. Fry (M.S., 2010)

Employment: Marine Information Resources Corporation, Geospatial analyst

Thesis: *Analysis of floristic diversity of Ailanthus altissima Mill. Swingle (tree of heaven) and co-occurring native tree species in northeastern Maryland*

Courtney M. Siegert (M.S., 2009)

Thesis: *An investigation of transpiration of three co-occurring seedling species of varying shade tolerances*

John T. Van Stan, II (M.S., 2008)

Thesis: *Inter- and intraspecific variation of stemflow production from Fagus grandifolia and Liriodendron tulipifera: effects of bark microrelief and meteorological conditions*

Ethan E. Frost (M.S., 2006)

Thesis: *Throughfall variability in a southern Illinois broadleaved deciduous forest*

Emily D. Yates (M.S., 2003)

Employment: Chicago Botanical Garden, Co-Coordinator for Millennium Seed Bank Project, Chicago, IL

Thesis: *Recruitment of three non-native invasive plants into a fragmented forest of southern Illinois*

**Served as a committee member or external examiner/committee member (\*):**

Manan Sarupria (Ph.D., 2025, Geography, University of Delaware)

Kevin R. Brinson (Ph.D., 2023, Climatology, University of Delaware)  
Robert M. O’Dea (Ph.D., 2023, Chemical Engineering, University of Delaware)  
Alma D. Vázquez-Lule (Ph.D., 2021, Plant & Soil Sciences, University of Delaware)  
Tyler Sharretts (M.S., 2021, Geography, University of Delaware)  
Jessica I. Czarnecki (M.S., 2020, Chemical Oceanography, University of Delaware)  
Mohammad Abdul Qadir Khan (M.S., 2020, Data Science, University of Delaware)  
Chelsea G. Leiper (Ph.D., 2018, Geography, University of Delaware)  
Sabatino V. Campellone (Ph.D., 2018, Environmental Engineering, Drexel University)\*  
Richard (Doug) D. Rowland (M.S., 2016, Water Science & Policy, University of Delaware)  
Julie T. Schooling (M.Sc., 2014, Geography, Thompson Rivers University, BC, Canada)\*  
Aleksandra Muzylo (Ph.D., 2011, Hydrology, IDAEA-CSIC, Barcelona, Spain)\*  
Melanie A. Schimek (M.S., 2011, Geography, University of Delaware)  
Nina Finger (M.S., 2010, Geology, University of Delaware)  
Chad E. Lishman (M.Sc., 2015, Geography, Thompson Rivers University, BC, Canada)\*  
Adam J. McKee (M.Sc., 2010, Geography, Thompson Rivers University, BC, Canada)\*  
Mark N. Demitroff (M.S., 2007, Geography, University of Delaware)  
Christopher A. Miehle (M.S., 2003, Geography, Southern Illinois University, Carbondale)  
Vincent G. McGowan (M.S., 2001, Geography, Southern Illinois University, Carbondale)

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**ADVISEE AWARDS  
& HONORS (while at UD)  
(listed alphabetically)**

Anna N. Bevan, Undergraduate advisee  
Delaware Water Resources Center Research Internship (2009)

William C. Bollinger, III, Undergraduate advisee  
Southern Illinois University Undergraduate Research Prize (2003)

Asia L. Downtin, Ph.D. advisee  
NSF DDRI grant (Co-PI, 2015)  
AWRA Richard A. Herbert Memorial Scholarship (2014)  
Bill & Melinda Gates Foundation Millennium Scholars Award (2015)  
2015 AWRA Outstanding Student Chapter Award (2015)  
University Dissertation Fellowship (2015-2016)  
College Block Fellowship (2016-2017)  
University Scholar Award (2013-2014, 2014-2015)  
Graduate Scholar Award (2012-2013)  
University of Delaware Mather Research Grant (2013-2016)  
AAG, Graduate Student, Professional Development Award (2018)

Ethan E. Frost, M.S./Ph.D. advisee  
University Graduate Fellowship (2007-2008)  
University Dissertation Fellowship (2008-2009)  
Geography Research Award (2009)

Janice E. Hudson, M.S./Ph.D. advisee  
University Dissertation Fellowship (2018-2019)  
Geography Research Award (2018)  
Geography Teaching Assistantship Award (2018)  
College Block Fellowship (2017-2018)

University of Delaware Mather Research Grant (2013)  
AGU Outstanding Student Paper Award (Hydrology) (2015)  
AGU Outstanding Student Paper Award (Biogeosciences) (2017)

Sean A. Hudson, M.S./Ph.D. advisee  
University of Delaware Mather Research Grant (2014)  
Geography Research Award (2016)

Katherine T. Junghenn, Undergraduate advisee  
Graduate School: University of Maryland, College Park  
Delaware Water Resources Center Research Internship (2013)  
Outstanding Environmental Science Major (2015)

Lydia A. Leclair, Undergraduate advisee  
Graduate School: University of California, Santa Barbara  
Delaware Water Resources Center Research Internship (2005-2006)

Michelle D. Lepori-Bui, Undergraduate advisee  
Delaware Water Resources Center Research Internship (2010)

Alyssa N. Lutgen, Undergraduate advisee  
Graduate School: University of Delaware  
Delaware Water Resources Center Research Internship (2015)

Susanna M. Mage, Undergraduate advisee  
Graduate School: Brown University  
UDRF-REU, Undergraduate Research Scholar (2008-2009)

Gregory D. Marchesiello, Undergraduate advisee  
NSF EPSCoR Science & Engineering Research Scholar (2007)

Amirreza Meydani, Ph.D. advisee  
NSF DDRI grant (Co-PI, 2025)

Robyn C. O'Halloran, Ph.D. advisee  
Environmental Chemistry Graduate Student Award (2025)  
American Chemical Society  
AGU Outstanding Student Paper Award (Hydrology) (2024)

Alexander C. Remar, M.S. advisee  
University of Delaware Mather Research Grant (2012)

Carrie E. Scheick, Undergraduate advisee  
Delaware Water Resources Center Research Internship (2011)

Ilana N. Schnauffer, Undergraduate advisee  
Willis Award (2017)  
Delaware Water Resources Center Research Internship (2016)

Alexey N. Shiklomanov, Undergraduate advisee  
Graduate School: Boston University  
Delaware Water Resources Center Research Internship (2013)  
Outstanding Environmental Science Major (2014)

Courtney M. Siegert, M.S./Ph.D. advisee  
NSF DDRI grant (Co-PI, 2012)  
University Dissertation Fellowship (2012-2013)  
University of Delaware Mather Research Grant (2012)  
College Dissertation Fellowship (2011-2012)  
Geography Research Award (2013)

John T. Van Stan II, M.S./Ph.D. advisee  
AGU Outstanding Student Paper Award (Hydrology) (2009)  
NSF DDRI grant (Co-PI, 2010)  
Geography Research Award (2010)  
University Graduate Fellowship (2010-2011)  
University Dissertation Fellowship (2011-2012)

Kathryn I. Wheeler, Undergraduate advisee  
Graduate School: Boston University  
US NSF Graduate Research Fellowship (2017)  
AAUP, UD Chapter, Outstanding Senior Student Award (2017)  
DENIN Environmental Scholar (2014)  
NEWRnet Summer Scholar (2015)  
NOAA Hollings Scholarship (2015)  
AGU Outstanding Student Paper Award (Hydrology) (2015)  
AGU Outstanding Student Paper Award (Biogeosciences) (2017)

Emily D. Yates, Master's advisee  
Arey Award for Outstanding Master's Thesis (2004)

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## COURSES TAUGHT (UNDERGRADUATE & GRADUATE)

### **Prior to University of Delaware:**

*Biosphere-Atmosphere Interactions*

*Earth's Biophysical Environments* (traditional & web)

*Environmental Impact Analysis*

*Forest Hydrology Field Methods*

### **At University of Delaware:**

**Fall 2003:** ENSC 425- *Environmental Field Methods* (Enrollment: 10)

**Spring 2004:** GEOG 652- *Seminar: Ecological Climatology* (Enrollment: 4)

**Fall 2004:** GEOG 235- *Conservation of Natural Resources* (Enrollment: 67), GEOG 451/651-  
*Microclimatology* (Enrollment: 8)

**Spring 2005:** ENSC 450- *Proseminar in Environmental Science* (Enrollment: 17)

**Spring 2006:** ENSC 450- *Proseminar in Environmental Science* (Enrollment: 18)

**Fall 2006:** GEOG 235- *Conservation of Natural Resources* (Enrollment: 40), GEOG 451/651- *Microclimatology* (Enrollment: 11)  
**Spring 2007:** ENSC 450- *Proseminar in Environmental Science* (Enrollment: 14)  
**Fall 2007:** ENSC 425- *Environmental Field Methods* (Enrollment: 10), GEOG 631- *Watershed Ecology* (Enrollment: 7)  
**Spring 2008:** ENSC 450- *Proseminar in Environmental Science* (Enrollment: 11)  
**Fall 2008:** GEOG 235- *Conservation of Natural Resources* (Enrollment: 39), GEOG 451/651- *Microclimatology* (Enrollment: 7)  
**Spring 2009:** GEOG 342- *Bioclimatology* (Enrollment: 8)  
**Fall 2009:** ENSC 425- *Environmental Field Methods* (Enrollment: 11), GEOG 431/631- *Watershed Ecology* (Enrollment: 10)  
**Winter 2010:** GEOG 235- *Conservation of Natural Resources* (Enrollment: 15)  
**Spring 2010:** GEOG 342- *Bioclimatology* (Enrollment: 4)  
**Spring 2011:** ENSC 450- *Proseminar in Environmental Science* (Enrollment: 13), GEOG 235- *Conservation of Natural Resources* (Enrollment: 12, Honors section)  
**Fall 2011:** ENSC 425- *Environmental Field Methods* (Enrollment: 12)  
**Fall 2012:** GEOG 451/651- *Microclimatology* (Enrollment: 12)  
**Spring 2013:** ENSC 450- *Proseminar in Environmental Science* (Enrollment: 30)  
**Fall 2013:** GEOG 342- *Bioclimatology* (Enrollment: 15)  
**Spring 2014:** ENSC 450- *Proseminar in Environmental Science* (Enrollment: 25)  
**Fall 2014:** ENSC 425- *Environmental Field Methods* (Enrollment: 10)  
**Spring 2015:** ENSC 450- *Proseminar in Environmental Science* (Enrollment: 26)  
**Fall 2015:** GEOG 600- *Prelude to Geography* (Enrollment: 8)  
**Winter 2016 (in Dominica):** GEOG 235- *Conservation of Natural Resources* (Enrollment: 18)  
**Fall 2016:** GEOG 600- *Prelude to Geography* (Enrollment: 6)  
**Fall 2017:** GEOG 600- *Prelude to Geography* (Enrollment: 7)  
**Summer 2018:** ENSC 425- *Environmental Field Methods* (Enrollment: 9)  
**Fall 2018:** GEOG 600- *Prelude to Geography* (Enrollment: 8)  
**Summer 2019:** ENSC 425- *Environmental Field Methods* (Enrollment: 9)  
**Fall 2019:** GEOG 600- *Prelude to Geography* (Enrollment: 6)  
**Spring 2021:** ENSC 450- *Proseminar in Environmental Science* (Enrollment: 21), GEOG 478- *GIScience & Environmental Data Analytics Colloquium* (Enrollment: 7)  
**Fall 2021:** GEOG 235- *Conservation of Natural Resources* (Enrollment: 40)  
**Spring 2022:** ENSC 450- *Proseminar in Environmental Science* (Enrollment: 19)  
**Spring 2023:** ENSC 450- *Proseminar in Environmental Science* (Enrollment: 18)  
**Fall 2023:** GEOG 320- *Water and Society* (Enrollment: 21)  
**Spring 2024:** GEOG 652- *Seminar in Climatology* (Enrollment: 6)  
**Fall 2024:** ENSC 425- *Environmental Field Methods* (Enrollment: 12); GEOG 320- *Water and Society* (Enrollment: 25)  
**Spring 2025:** GEOG 431- *Watershed Hydroecology* (Enrollment: 4)  
**Fall 2025:** GEOG 600- *Prelude to Geography* (Enrollment: 7); GEOG 320- *Water and Society* (Enrollment: 9)

**Undergraduate Student Directed Research Advisees:**

Daniel R. Page (1999-2000)

William C. Bollinger, III (2002-2003)

Michael J. Mihalik (2003-2004)

Noel Wubbena (2003-2004)

Ethan E. Frost (2000-2002)

Robert A. Hrabik (2002-2003)

Mark P. Neimeister (2003-2004)

Nicholas P. Klingaman (2004-2005)

Lydia A. Leclair (2005-2006)	Gregory D. Marchesiello (2007-2008)
Susanna M. Mage (2008-2010)	Anna N. Bevan (2009-2010)
Michelle D. Lepori-Bui (2010-2012)	Carrie E. Scheick (2010-2012)
Andrew S. Price (2011-2012)	Katherine T. Junghenn (2012-2015)
Alexey N. Shiklomanov (2011-2014)	Grace Relf (2012-2014)
Paul J. Leininger (2014)	Nathaly Rodriguez (2013-2014)
Alyssa N. Lutgen (2015-2017)	Kathryn I. Wheeler (2014-2017)
Ilana N. Schnauffer (2015-2017)	Dillon Siple (2023-2024)
Puja Jani (2024)	Caira R. Flanagan (2024)
Priya C. Thamburaj (2025)	Samantha Chittakone (2024-2026)
Ryan M. Kim (2024-2026)	

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## **SPECIALIZED TRAINING**

2015 AAG Department Leadership Workshop  
AAG Healthy Departments Initiative  
University of Connecticut, Storrs (2015)

Blue & Gold Academic Leadership Program (UD)  
Advanced training for university administrators  
Certificate of Completion (2012)

Introductory Problem Based Learning (PBL) Workshop  
Certified PBL Fellow (June 2005)  
Institute for Transforming Undergraduate Education (ITUE)  
University of Delaware

Advanced PBL Workshop, "Taking PBL to the Next Level"  
Winter 2006 Faculty Institute  
University of Delaware

Advanced PBL Workshop, "Refining and Publishing PBL Problems"  
Winter 2006 Faculty Institute  
University of Delaware

Assessment Workshop  
Winter 2008 Faculty Institute  
University of Delaware

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## **PROFESSIONAL AND UNIVERSITY SERVICE**

### **Professional service**

#### **Editorial duties** (AE = Associate Editor):

Series Editor, Ecological Studies- Analysis and Synthesis (Springer Nature) (2013- pr)  
AE (Ecology, biometeorology), *Hydrological Processes* (Wiley) (2019- pr)  
AE (Plant-Soil Interactions), *Journal of Plant Nutrition and Soil Science* (Wiley) (2016-2021)

**Journal manuscript, book publisher, and proposal reviewer:**

**Journal manuscript reviewer for:**

*Advances in Water Resources* (2)      *Hydrological Sciences Journal* (5)  
*African Journal of Agricultural Research* (2)      *Hydrology and Earth System Sciences* (2)  
*Agricultural and Food Science*      *ISME Journal*  
*Agricultural and Forest Meteorology* (23)      *Journal of Arid Environments*  
*Agriculture and Human Values*      *Journal of Environmental Informatics*  
*Annals of Forest Science* (2)      *Journal of Environmental Quality* (2)  
*Atmospheric Environment*      *Journal of Geography in Higher Education*  
*Biogeochemistry* (6) [**Outstanding Reviewer**]      *J Geophys Res- Atmospheres*  
*Bioscience* (2)      *J Geophys Res- Biogeosciences* (5)  
*BMC Ecology* (2)      *Journal of Hydrology* (32)  
*Canadian Journal of Forest Research* (4)      *Journal of Vegetation Science*  
*Catena* (3)      *Journal of Visualized Experiments (JoVE)*  
*Climate Research*      *Land Degradation and Development*  
*Earth Surface Processes and Landforms* (4)      *Nature Communications*  
*Ecohydrology* (12)      *Optical Engineering*  
*Ecohydrology & Hydrobiology* (7)      *Physical Geography*  
*Ecosphere*      *Plant and Soil* (2)  
*Environmental Engineering Science*      *Proc of the Royal Society B: Biol Sci* (2)  
*Environmental Management*      *Professional Geographer* (2)  
*Environmental Monitoring and Assessment* (3)      *Publications in Climatology*  
*European Journal of Forest Research* (2)      *Science of the Total Environment* (5)  
*Forest Ecology and Management* (6)      *Sensors* (2)  
*Forests* (2)      *Silva Fennica*  
*Functional Ecology* (2)      *Tree Physiology*  
*Geoderma* (3)      *Urban Forestry and Urban Greening* (2)  
*Global and Planetary Change*      *Water International*  
*Global Ecology and Biogeography* (2)      *Water Research* (2)  
*HardwareX*      *Water Resources Research* (5)  
*Hydrological Processes* (37)      *WIRES-Water*  
*Hydrological Research Letters* (Japan)

**Agency manuscript reviewer for:**

US Environmental Protection Agency (US EPA)

**Book/Encyclopedia reviewer for:**

Elsevier B.V.  
Encyclopedia of Water: Science, Technology, and Society (Wiley)  
Rowman & Littlefield Publishers, Inc.

**Proposal panelist for:**

US National Science Foundation (7)

**Proposal reviewer for:**

Belmont Forum Grants Operations, Call for Mountains as Sentinels for Change  
European Research Council (ERC)  
National Science Foundation, Hydrologic Sciences Program (8)

National Science Foundation, Ecosystem Science Cluster  
National Science Foundation, Geography and Spatial Sciences Program (5)  
Natural Environment Research Council (NERC), United Kingdom  
University of Delaware Research Foundation (UDRF)  
U.S. Civilian Research & Development Foundation

**Quacquarelli Symonds (QS) Annual Survey of Worldwide University Academic Rankings:**

-Participated as an invited academic expert: 2

**External reviewer for promotion and/or tenure (number of cases): 11**

**External departmental reviews: 1**

**Professional consulting activities (selected):**

-Consultant to New York City's DEP, role of urban trees in stormwater management schema  
-Expert witness, hydrologic consultant on NJ flooding case, examined role of riparian vegetation on flood mitigation via evapotranspirational losses

**American Geophysical Union:**

Regularly serves as a judge for the Outstanding Student Paper Award (OSPA) competition

Session Co-Convener (with Andres Sanchez, Bhavna Arora, Elizabeth Boyer, Salvatore Calabrese, Jon Chorover, Adrian Harpold, Tirthankar Roy, and Jeffrey Munroe); Session title: *Advancing Critical Zone Science Across Sites, Scales, and Disturbance Scales and Disturbances* [2025]

Session Co-Convener (with Matthias Sprenger, John Van Stan, and Till Volkmann); Session title: *Methods and Process Interpretations in the Soil-Plant-Atmosphere Continuum* [2016]

Session Co-Convener (with Darryl Carlyle-Moses, John Van Stan, and Courtney Siegert); Session title: *Precipitation-Vegetation Interactions: Advances in Interception Loss, Throughfall, and Stemflow Research* [2015]

Session Co-Convener (with John Van Stan and Darryl Carlyle-Moses); Session title: *Precipitation Partitioning by Vegetation: Methods, Measurement, and Modeling of Hydrologic and Biogeochemical Dimensions* [2014]

Session Co-Convener (with Richard Keim, Rodrigo Vargas, Sara Rauscher); Session title: *Bridging Scales in Soil-Plant-Atmosphere Interactions I & II* [2013]

Session Co-Convener (with Richard Keim and Darryl Carlyle-Moses); Session title: *Interactions of Precipitation with Forest Canopies across Spatial and Temporal Scales: Measurements and Modeling* [2012]

**Association of American Geographers:**

Member, Publications Committee (2008-2011)

Chair, Cryosphere Specialty Group (2007-2009)

Member, Board of Directors, Cryosphere Specialty Group (2005- 2007)

**Eastern Snow Conference:**

Member, Research Committee (2007- 2009)

Local Arrangements Coordinator, 2006 Joint ESC/AAG CrSG Meeting, Newark, DE

**Davos Atmosphere and Cryosphere Assembly 2013 (DACA-2013):**

Session Co-Convener (with Peter Bebi [SLF, Davos, Switzerland] & Michele Freppaz [University of Turin, Italy]); Session title: *Forest-snow interactions*

Session Co-Chair (with Peter Bebi [SLF, Davos, Switzerland] & Michele Freppaz [University of Turin, Italy]); Session title: *Forest-snow interactions*

**Outreach activities:**

Senior Rangers Program, Fair Hill Natural Resources Management Area, Elkton, MD

**Duties:** introduce GCR NSF related research on stemflow to Senior Rangers

MADE CLEAR Climate Change Science Education Advisor

**Duties:** train informal educators about climate change science

Consulting expert, *The News Journal*

**Duties:** supply journalists with topical expertise for newspaper articles

Climatologist, Fair Hill Nature Center, Elkton, MD (2004- 2012)

**Duties:** maintain meteorological station on-site, Weather station presentation program

Member, Board of Directors, Fair Hill Nature Center, Elkton, MD (2004- 2007)

**Duties:** oversee operations, participate in fundraising & educational programs (k-12, adult)

Judge, State (Delaware) Geography Bee (2005-2006, 2010, 2014, 2017)

**Duties:** render a decision concerning the validity of a response when queries arose

Presenter, 2005 Water Festival at Bellevue State Park, DE

**Duties:** present information on field instrumentation to junior high students

Member, Conservation Commission, New Braintree, MA (1993-1996)

**Duties:** field site evaluation, wetlands delineation, administration of Wetlands Protection Act

**University service**

**University of Delaware**

**University posts:**

Assessment Faculty Fellow (2006- 2010)

Alpha of Delaware Chapter, Phi Beta Kappa, President (2009- 2010)

Alpha of Delaware Chapter, Phi Beta Kappa, Transcript Review Team (2006-2011)

Chair, Search Committee, Dept. of Earth Sciences Chair (2019-2020)

Chair, Search Committee, Dept. of Plant & Soil Sciences Chair (2015-2016)

Co-Chair, Distinguished Professorship Energy & Environment Search Committee (2015-16)

Committee on Undergraduate Records and Certification (2009- 2014)

Director of Environmental Science and Environmental Studies Programs (2010-2015)

Dissertation Fellowship Selection Committee, Graduate College (2021, 2024)

Implementation Committee, Delaware Will Shine Strategic Planning Initiative (2015- 2016)  
Member, Entrepreneurship Certificate Program Committee (2016-2017)  
Middle States Accreditation Committee, Standard VII: Governance, Leadership and Administration (2019-2021)  
“Models for the New American Research University” Working Group (2014-2015)  
Program Committee, Water Science & Policy Graduate Program (2012- present)  
Search Committee, Vice Provost for Faculty Affairs (2024)  
Undergraduate Tuition Budgeting Subcommittee (2018)  
University Assessment Scholar (2010-2011)  
University Library Committee (2012- 2014)  
Working Group for Water Science & Policy Graduate Program (2010-2012)

**College posts:**

Assistant to the Dean Search Committee (2018)  
Chair, CEOE Promotion & Tenure Committee (2020)  
College Cluster Hire Search Committee (2011)  
College DEOS Search Committee (2013)  
College Diversity, Equity, and Inclusion Committee (2015- 2020)  
College Promotion & Tenure Committee (2021)  
College Safety Committee (2012- 2017)  
College of Arts & Sciences Faculty Senate (2003-2004, 2007-2009)

**Departmental posts:**

Associate Chair (2010- 2012)  
Chair, Department of Geography & Spatial Sciences (2015- 2020)  
Coordinator for Physical Geography (2009- 2012)  
Delaware Valley Geographical Association, Council Member (2003-2007)  
DOUG Faculty Co-Advisor (2006-2007)  
Environmental Science Advisor (2004- 2017)  
Environmental Studies Advisor (2009- 2017)  
Founding Director, GIScience and Environmental Data Analytics Program (2020-2023)  
Undergraduate Career Advisor (2005-2008)

**Departmental committees:**

Academic Council, Interim Chair (Spring 2006)  
Academic Council, Member (2009- 2012, 2025-pr)  
Chair, BS Program Committee for GIScience & Environmental Data Analytics (2017-2018)  
Chair, Departmental Academic Program Review Committee (2021-2022)  
Chair, Promotion & Tenure Committee (2023-2024)  
Chair, Search Committee, Departmental Chair & Professor position (2025-2026)  
Chair, Search Committee, Urban climatologist position (2023-2024)  
In-rank Post-Tenure Faculty Review Committee, Chair (2025)  
Fourth Year Faculty Review Committee (2015, 2022, 2023)  
Graduate Program Committee, Member (2009)  
Ph.D. in Geography Committee, Member (2005-2007)  
Promotion and Tenure Policy Document Revision Committee (2023-2024)  
Promotion and Tenure Committee, Member (2009-2010, 2024-2025)  
Revision of Geography BA Major Committee, Member (2015-2016)

Second Year Faculty Review Committee (2012, 2015, 2021, 2023, 2025)  
Search Committee, Climatologist position (2023)  
Search Committee, Human geographer position (2014)  
Search Committee, Human geographer position (2013)  
Search Committee, Human geographer position (2011)  
Social Events Planning Committee, Member (2003- 2005)  
Strategic Planning Committee, Member (2024)

### **Southern Illinois University, Carbondale**

#### **Departmental posts:**

Undergraduate Program Director (2001- 2003)  
Undergraduate Advisor for Environmental Planning specialization (2001- 2003)  
Preparer of Geography Undergraduate Assessment Report (2001- 2003)

#### **Departmental committees:**

Chair, GIScience Faculty Search Committee (Spring 2003)  
Natural Resources Faculty Search Committee (Spring 2002)  
Merit Pay Committee (Spring 2002)

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### **PROFESSIONAL AFFILIATIONS**

American Association for the Advancement of Science (AAAS)  
American Geophysical Union (AGU)  
Delta Phi Alpha- National German Honor Society ( $\Delta\Phi\Lambda$ )  
European Geosciences Union (EGU)  
International Association of Hydrological Sciences (IAHS)  
JSPS-US Alumni Association, Capitol Region Chapter (JSPS-US AA)  
Maryland State Beekeepers Association (MSBA)  
Phi Beta Kappa, Alpha Chapter of Delaware ( $\Phi\beta\kappa$ )  
University of Delaware, Delaware Environmental Institute (DENIN)  
University of Delaware, Data Science Institute (DSI)