BRENDAN HARMON

Baton Rouge
baharmon@lsu.edu
1 919 622 8414
baharmon.github.io
github.com/baharmon
0000-0002-6218-9318

Assistant Professor of Landscape Architecture

LSU | College of Art + Design

ABOUT

I am interested in dynamic landscapes, in modeling how landscapes evolve and designing catalysts for change. My teaching focuses on how scientific modeling can play a generative role in the creative design process. My research explores creative applications for emerging technologies like tangibles and robotics.

RESEARCH INTERESTS

Geospatial Modeling erosion modeling ▪ landscape evolution ▪ computational ecology ▪ lidar & drone analytics ▪ geovisualization

Digital Design generative design ▪ creative coding ▪ digital fabrication ▪ ecological robotics ▪ human-computer interaction ▪ tangible interfaces

EDUCATION

2013 – 2017 **PhD in Design** — **North Carolina State University**
Co-major in Forestry and Environmental Science

2010 – 2012 **Master's of Philosophy in Geography** — **University of Oxford**
Focus in Biodiversity, Conservation, and Management

2005 – 2008 **Master's of Landscape Architecture** — **Harvard Graduate School of Design**

2001 – 2005 **Bachelor's of Art** — **Sewanee: the University of the South**
Major in Art History

TEACHING AND RESEARCH

2017 – present **Assistant Professor** — **Louisiana State University**
Landscape Architecture

2017 **Postdoctoral Fellow** — **North Carolina State University**
Geospatial Analytics

2013 – 2017 **Instructor** — **North Carolina State University**
Landscape Architecture

2007 – 2008 **3D Teaching Assistant** — **Harvard Graduate School of Design**

PROFESSIONAL PRACTICE

2008 – 2009 **Landscape Designer** — **EDAW|AECOM Guangzhou**

BOOKS

Petrasova, Anna, **Brendan Harmon**, Vaclav Petras, Payam Tabrizian, and Helena Mitasova (2018). *Tangible Modeling with Open Source GIS*. 2nd ed. Springer International Publishing. ISBN: 9783319893020. URL: https://doi.org/10.1007/978-3-319-89303-7.

Petrasova, Anna, **Brendan Harmon**, Vaclav Petras, and Helena Mitasova (2015). *Tangible Modeling with Open Source GIS*. 1st ed. Springer. ISBN: 9783319257754. URL: https://doi.org/10.1007/978-3-319-25775-4.

PAPERS

Harmon, Brendan and Nicholas Serrano (in press). "Point Cloud Aesthetics". In: *Journal of Digital Landscape Architecture*.

Harmon, Brendan, Hye Yeon Nam, Hunter Gilbert, and Nasrin Iravani (2022). "Living Typography: Robotically Printing a Living Typeface". In: *CHI Conference on Human Factors in Computing Systems Extended Abstracts*. New Orleans, LA, USA: ACM. URL: https://doi.org/10.1145/3491101.3519894.

Sedghikhanshir, Alireza, Yimin Zhu, Yan Chen, and **Brendan Harmon** (2022). "Exploring the Impact of Green Walls on Occupant Thermal State in Immersive Virtual Environment". In: *Sustainability* 14.3. ISSN: 2071-1050. URL: https://doi.org/10.3390/su14031840.

Harmon, Brendan, Hye Yeon Nam, and Michael Pasquier (2021). "Shifting Datum: A Critical Inquiry into Coastal Change". In: *Creativity and Cognition*. C&C '21. New York, NY, USA: Association for Computing Machinery. ISBN: 9781450383769. URL: https://doi.org/10.1145/3450741.3466849.

Smith, Devin F, Steven T Goldsmith, **Brendan Harmon**, Russell S Harmon, and Jorge A Espinosa (2020). "Physical controls and ENSO event influence on weathering in the Panama Canal Watershed". In: *Scientific Reports* 10.1, p. 10861. ISSN: 2045-2322. URL: https://doi.org/10.1038/s41598-020-67797-7.

Harmon, Brendan, Helena Mitasova, Anna Petrasova, and Vaclav Petras (2019). "r.sim.terrain 1.0: a landscape evolution model with dynamic hydrology". In: *Geoscientific Model Development* 12.7, pp. 2837–2854. URL: https://doi.org/10.5194/gmd-12-2837-2019.

Harmon, Brendan, Anna Petrasova, Vaclav Petras, Helena Mitasova, and Ross Meentemeyer (2018). "Tangible topographic modeling for landscape architects". In: *International Journal of Architectural Computing*. URL: https://doi.org/10.1177/1478077117749959.

Millar, Garrett C, Payam Tabrizian, Anna Petrasova, Vaclav Petras, **Brendan Harmon**, and Ross K Meentemeyer (2018). "Tangible Landscape : A Hands-on Method for Teaching Terrain Analysis". In: *CHI '18 Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*. URL: https://doi.org/10.1145/3173574.3173954.

Smith, Devin F., **Brendan Harmon**, Jorge Espinosa, Steven T. Goldsmith, and Russell S. Harmon (2017). "Evaluation of Climatic and Physical Controls and the Influence of ENSO Events on Long-Term Weathering and CO2 Consumption across the Panama Canal Watershed". Seattle, Washington. URL: https://doi.org/10.1130/abs/2017AM-298750.

Tabrizian, Payam, **Brendan Harmon**, Anna Petrasova, Helena Mitasova, and Ross K Meentemeyer (2017). "Tangible Immersion for Ecological Design". In: *ACADIA 17: Proceedings of the 37th Annual Conference of the Association for Computer Aided Design in Architecture*. Cambridge, MA, pp. 600–609. ISBN: 978-0-692-96506-1. URL: http://papers.cumincad.org/cgi-bin/works/Show&_id=caadria2010_044/Show?acadia17_600.

Tonini, Francesco, Douglas Shoemaker, Anna Petrasova, **Brendan Harmon**, Vaclav Petras, Richard Cobb, Helena Mitasova, and Ross Meentemeyer (2017). "Tangible geospatial modeling for collaborative solutions to invasive species management". In: *Environmental Modelling and Software* 92. ISSN: 13648152. URL: https://doi.org/10.1016/j.envsoft.2017.02.020.

Harmon, Russell S, Gerhard Wörner, Steven T Goldsmith, **Brendan Harmon**, Christopher B Gardner, W Berry Lyons, Fred L Ogden, Michael J Pribil, David T Long, Zoltán Kern, and István Fórizs (2016). "Linking silicate weathering to riverine geochemistry – A case study from a mountainous tropical setting in west-central Panama". In: *Geological Society of America Bulletin*. ISSN: 0016-7606. URL: https://doi.org/10.1130/B31388.1.

Harmon, Brendan (2016). "Embodied Spatial Thinking in Tangible Computing". In: *TEI '16: Proceedings of the Tenth International Conference on Tangible, Embedded, and Embodied Interaction*. Eindhoven, Netherlands: ACM Press. ISBN: 978-1-4503-3582-9. URL: https://doi.org/10.1145/2839462.2854103.

Harmon, Brendan, Anna Petrasova, Vaclav Petras, Helena Mitasova, and Ross K Meentemeyer (2016d). "Tangible Landscape: cognitively grasping the flow of water". In: *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*. Prague: International Society of Photogrammetry and Remote Sensing. URL: https://doi.org/10.5194/isprs-archives-XLI-B2-647-2016.

Petrasova, Anna, Vaclav Petras, Derek Van Berkel, **Brendan Harmon**, Helena Mitasova, and Ross K Meentemeyer (2016). "Open source approach to urban growth simulation". In: *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*. Prague: International Society of Photogrammetry and Remote Sensing. URL: https://doi.org/10.5194/isprs-archives-XLI-B7-953-2016.

Tabrizian, Payam, Anna Petrasova, **Brendan Harmon**, Vaclav Petras, Helena Mitasova, and Ross K Meentemeyer (2016). "Immersive Tangible Geospatial Modeling". In: *Proceedings of the 24th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*. SIGSPATIAL'16. New York, NY, USA: ACM.

Goldsmith, Steven T, W Berry Lyons, Russell S Harmon, **Brendan Harmon**, Anne E Carey, and Gregg T McElwee (2015). "Organic carbon concentrations and transport in small mountain rivers, Panama". In: *Applied Geochemistry* 63, pp. 540–549. ISSN: 08832927. URL: https://doi.org/10.1016/j.apgeochem.2015.04.014.

Goldsmith, Steven T, Russell S Harmon, W Berry Lyons, **Brendan A Harmon**, Fred L Ogden, and Christopher B Gardner (2015). "Evaluation of controls on silicate weathering in tropical mountainous rivers: Insights from the Isthmus of Panama". In: *Geology* 43.7, pp. 563–566. ISSN: 0091-7613. URL: https://doi.org/10.1130/G36082.1.

Petras, Vaclav, Anna Petrasova, **Brendan Harmon**, Ross Meentemeyer, and Helena Mitasova (2015). "Integrating Free and Open Source Solutions into Geospatial Science Education". In: *ISPRS International Journal of Geo-Information* 4.2, pp. 942–956. ISSN: 2220-9964. URL: https://doi.org/10.3390/ijgi4020942.

Petrasova, Anna, **Brendan Harmon**, Vaclav Petras, and Helena Mitasova (2014). "GIS-based environmental modeling with tangible interaction and dynamic visualization". In: *Proceedings of the 7th International Congress on Environmental Modelling and Software*. Ed. by D.P. Ames and N. Quinn. URL: http://www.iemss.org/sites/iemss2014/papers/iemss2014_submission_131.pdf.

Harmon, Brendan and Heather Viles (May 2013). "Beyond geomorphosites: trade-offs, optimization, and networking in heritage landscapes". In: *Environment Systems and Decisions* 33.2, pp. 272–285. ISSN: 2194-5403. URL: https://doi.org/10.1007/s10669-013-9448-3.

Tateosian, Laura, Helena Mitasova, **Brendan Harmon**, Brent Fogleman, Katherine Weaver, and Russell S Harmon (2010). "TanGeoMS: tangible geospatial modeling system." In: *IEEE transactions on visualization and computer graphics* 16.6, pp. 1605–12. ISSN: 1077-2626. URL: https://doi.org/10.1109/TVCG.2010.202.

CHAPTERS

Harmon, Brendan, Anna Petrasova, Vaclav Petras, and Helena Mitasova (2016). "Computational Landscape Architecture: Procedural, Tangible, and Open Landscapes". In: *Innovations in Landscape Architecture*. Ed. by Jonathan R Anderson and Daniel Ortega. Routledge.

Harmon, Brendan, William D Goran, and Russell S Harmon (2014). "Sustainable Cities and Military Installations in the Twenty-First Century: Towards Sustainable Military Installations and Adaptable Cities". In: *Sustainable Cities and Military Installations*. Ed. by Igor Linkov. NATO Science for Peace and Security Series C: Environmental Security. Dordrecht: Springer Netherlands. Chap. 2, pp. 21–47. ISBN: 978-94-007-7160-4. URL: https://doi.org/10.1007/978-94-007-7161-1.

SELECT PRESENTATIONS

Harmon, Brendan and Nicholas Serrano (2022). "The Complexities and Aesthetic Potential of Point Clouds as a Medium for Landscape Architecture". Council of Educators in Landscape Architecture 2022 Conference Proceedings. Santa Ana Pueblo, New Mexico.

Dempsey, Kara, Devin F Smith, **Brendan A Harmon**, Russell S Harmon, Jorge A Espinosa, and Steven T Goldsmith (2021). "Physical and climatic controls on nitrogen export across the Panama Canal Watershed". Geological Society of America Abstracts with Programs. Portland, Oregon.

Harmon, Brendan (2021). "Multispectral Drone Data Analytics: Estimating the Carbon Stock of a Designed Meadow Through Time Series Analysis". Council of Educators in Landscape Architecture 2021 Conference Proceedings.

Serrano, Nicholas and **Brendan Harmon** (2021). "Digitizing Rosedown Plantation: Documentation Technologies for Landscape Ensembles". Southeast Chapter of the Society of Architectural Historians 2021 Annual Conference. Natchez, Mississippi.

Wright, Andrew, Tanvi Shah, and **Brendan Harmon** (2021). "Democratizing GIS: Open Source Tools for Everyday Mapping and Analysis". 2021 ASLA Conference on Landscape Architecture. Nashville, Tennessee.

Harmon, Brendan, Hye Yeon Nam, Sophie Lott, and Therese Potter (2020). "Complete Street Participatory Design Toolkit". Council of Educators in Landscape Architecture 2020 Conference Proceedings. Louisville, Kentucky. URL: https://thecela.org/wp-content/uploads/2020-CELA-Conf-Proceedings_V2.pdf.

Nam, Hye Yeon, Iyleah Hernandez, and **Brendan Harmon** (2020). "Unmasked". Adjunct Publication of the 33rd Annual ACM Symposium on User Interface Software and Technology. Virtual Event, USA. URL: https://doi.org/10.1145/3379350.3416137.

Harmon, Brendan, Anna Petrasova, Payam Tabrizian, Vaclav Petras, and Helena Mitasova (2017). "Tangibly smart: an interactive watershed in your hands". World Bank Watershed Days. Washington, D.C. URL: https://ncsu-geoforall-lab.github.io/tangible-landscape-talk/worldbank2017.html.

Smith, Devin F., **Brendan Harmon**, Jorge Espinosa, Steven T. Goldsmith, and Russell S. Harmon (2017). "Evaluation of Climatic and Physical Controls and the Influence of ENSO Events on Long-Term Weathering and CO2 Consumption across the Panama Canal Watershed". Seattle, Washington. URL: https://doi.org/10.1130/abs/2017AM-298750.

Harmon, Brendan, Anna Petrasova, and Vaclav Petras (2016). "Serious Gaming with Tangible Landscape". NCSU Coffee & Viz. Raleigh, NC. URL: http://ncsu-geoforall-lab.github.io/coffee-and-viz/hunt.html#/9.

Harmon, Brendan, Anna Petrasova, Vaclav Petras, Helena Mitasova, and Ross K Meentemeyer (2016a). "Creative spatial thinking with Tangible Landscape". American Association of Geographers Annual Meeting 2016. San Francisco, CA. URL: http://baharmon.github.io/aag-2016/.

– (2016b). "Tangible geographies". Royal Geographical Society Annual International Conference 2016. London.

– (2016c). "Tangible interaction for GIS". FOSS4G NA 2016. Raleigh, NC. URL: http://baharmon.github.io/foss4g-na-2016/.

Petrasova, Anna, Vaclav Petras, **Brendan Harmon**, and Helena Mitasova (2016). "Using GRASS GIS through Python and tangible interfaces". FOSS4G NA 2016. Raleigh, NC. URL: https://grasswiki.osgeo.org/wiki/Using_GRASS_GIS_through_Python_and_tangible_interfaces_(workshop_at_FOSS4G_NA_2016).

Mitasova, Helena, Anna Petrasova, Vaclav Petras, and **Brendan Harmon** (2015b). "Dynamic Landscapes in Open Source GIS". NCSU Coffee & Viz. Raleigh, NC. URL: https://geospatial.ncsu.edu/osgeorel/publications/coffeeandviz/#/.

Harmon, Brendan, Helena Mitasova, and Anna Petrasova (2014). "Tangible geospatial modeling for landscape architects". 2014 Geodesign Summit. Redlands, California. URL: http://video.esri.com/watch/3170/tangible-geospatial-modeling-for-landscape-architects.

Petrasova, Anna, **Brendan Harmon**, and Helena Mitasova (2014). "GIS-based modeling with tangible interaction." FOSS4G 2014. URL: https://vimeo.com/106854721.

REPORTS

Harmon, Brendan, Josh Black, Peihong Han, Chadd Hippensteel, Xiaoman Ji, Sophie Lott, Murong Xu, and Yue Zhang (2019). *Spring Up! Denham Springs Masterplan*. Tech. rep. Baton Rouge: Coastal Sustainability Studio, Louisiana State University.

Harmon, Brendan, Hayden Hammons, Taylor Jacobson, Nguyet Nguyen, Elizabeth Peterson, Tanvi Shah, Xi Stich, and Andrew Wright (2019). *The Hungry River: Designing a Future for the Amite River's Former Sand and Gravel Mines*. Tech. rep. Baton Rouge: Coastal Sustainability Studio, Louisiana State University. URL: https://doi.org/10.13140/RG.2.2.20859.87845.

Levine, Jay, Christopher Eads, Karl Wegmann, Helena Mitasova, Nathan Lyons, **Brendan Harmon**, Chanelle McCarther, Samantha Peart, Nicholas Oberle, and Mike Walter (2018). *Freshwater Bivalve Survey for Endangered Species Branch Fort Bragg, NC*. Tech. rep. US Army Corps of Engineers. URL: https://doi.org/10.13140/RG.2.2.17512.11521.

Meentemeyer, Ross K., Francesco Tonini, Douglas Shoemaker, Richard C. Cobb, **Brendan Harmon**, Vaclav Petras, Anna Petrasova, and Helena Mitasova (2017). *Collaboratively managing sudden oak death using tangible geospatial modeling*. Tech. rep. Department of Agriculture, Forest Service, Pacific Southwest Research Station. URL: https://www.fs.usda.gov/treesearch/pubs/53992.

SOFTWARE

Harmon, Brendan. r.sim.terrain v.1.1.0. 2019. url: https://github.com/baharmon/landscape_evolution.

EXHIBITIONS

Nam, Hye Yeon and **Brendan Harmon**. Contingent Dreams. 404 International Festival of Art & Technology. October 2021. url: https://youtu.be/z6zmj4uzvTg.

Nam, Hye Yeon and **Brendan Harmon**. Shifting Datum. Baton Rouge Gallery. May 2019. url: https://www.batonrougegallery.org/nam-may2019.

GRANTS

Serrano, Nicholas and **Brendan Harmon**. Rosedown Plantation 3D Scan and Documentation. Historic Preservation Fund Grant. National Park Service. 2020-2021. $39,903.

Nam, Hye Yeon, Corina Barbalata, **Brendan Harmon**, Hunter Gilbert, and Marcio de Queiroz. Robots in Nature: Creative Environmental Applications for Robotics. Collaborative Seminar Grant. LSU Center for Collaborative Knowledge. 2020-2021. $3,500.

Serrano, Nicholas, **Brendan Harmon**, Christopher Cox, Amy Luther, and Kory Konsoer. Tangibly Teaching Terrain with Mixed Reality Terrain Models. Collaborative Seminar Grant. LSU Center for Collaborative Knowledge. 2020-2021. $3,500.

Harmon, Brendan, Hye Yeon Nam, Corina Barbalata, Hunter Gilbert, and Marcio de Queiroz. Ecological Robotics. LSU Student Technology Fee. Louisiana State University. 2019-2020. $77,000.

Harmon, Brendan, Hye Yeon Nam, Marcio de Queiroz, Hunter Gilbert, and Tracy Quirk. Robots in Nature: Human-Robot-Environment Interaction for Advanced Ecosystem Services. LSU Faculty Research Grant. Louisiana State University. 2019-2021. $72,500.

Berkowitz, Zak et al. Navigate, Fabricate, Simulate. LSU Student Technology Fee. Louisiana State University. 2018-2019. $120,000.

Birch, Traci, Kris Palagi, and **Brendan Harmon**. Improving Quality of Life in the Amite River Watershed through Strategic Community-level Green Infrastructure Planning. Lamar Family Foundation. 2018-2019. $100,000.

Harmon, Brendan, Dynamic Landscape Evolution. LSU Council on Research Summer Stipend. Louisiana State University. 2018. $5,000.

Berkowitz, Zak et al. The Mixed Reality Garage: Labs for the Future of Art and Design. LSU Student Technology Fee. Louisiana State University. 2017-2018. $116,559.

de Queiroz, Marcio, Hunter Gilbert, Jason Crow, Derick Ostrenko, **Brendan Harmon**, and Hye Yeon Nam. LSU Robotics = Engineering + Art + Design. LSU Student Technology Fee. Louisiana State University. 2017-2018. $83,325.

Carney, Jeff et al. Inland from the Coast: A multi-scalar approach to regional climate change responses. Gulf Research Program. National Academy of Science and Robert Wood Johnson Foundation. 2017-2020. $2,936,000. Award: 2000008299. url: `https://css.lsu.edu/project/inland-from-the-coast/`

COURSES

LA 2101	Representation III	S 2018-2022
LA 4008	Adv. Topics Studio	F 2019-2021
LA 4201	Landscape Planning	F 2019-2021
LA 7102	Media II	S 2018-2022
LA 7032	Media III	S 2017-2022
LA 7055	GIS for Designers	F 2019-2021
LA 7031	Water Systems Studio	F 2017-2018
LA 7051	Adv. Topics Studio I	F 2019-2021
LA 7061	Adv. Topics Studio II	S 2018-2019
LA 7504	Ecological Robotics	S 2019
DART 7003	Digital Humanities	F 2018