Brendan Harmon

baharmon@lsu.edu | 919.622.8414
http://baharmon.github.io/

EDUCATION

NORTH CAROLINA STATE UNIVERSITY | PhD in Design
2013 - 2017
Raleigh, NC

Co-major: Forestry and Environmental Science

UNIVERSITY OF OXFORD | MPhil in Geography
2010 - 2012
Oxford, UK

Focus: Biodiversity, Conservation, and Management

HARVARD GRADUATE SCHOOL OF DESIGN | MLA
2005 - 2008
Cambridge, MA

SEWANEE: THE UNIVERSITY OF THE SOUTH | BA
2001 - 2005
Sewanee, TN

Major: Art History

TEACHING AND RESEARCH

LOUISIANA STATE UNIVERSITY | Assistant Professor
2017 - present
Baton Rouge, LA

ROBERT REICH SCHOOL OF LANDSCAPE ARCHITECTURE

NORTH CAROLINA STATE UNIVERSITY | Postdoctoral Fellow
2017
Raleigh, NC

CENTER FOR GEOSPATIAL ANALYTICS

NORTH CAROLINA STATE UNIVERSITY | Instructor
2013 - 2015
Raleigh, NC

DEPARTMENT OF LANDSCAPE ARCHITECTURE

HARVARD GRADUATE SCHOOL OF DESIGN | 3D Teaching Assistant
2007 - 2008
Cambridge, MA

FABRICATION LAB | Rapid Prototyping Group

PROFESSIONAL PRACTICE

EDAW|AECOM | Landscape Designer
2008 - 2009
Guangzhou

MEMBERSHIP

LSU COASTAL SUSTAINABILITY STUDIO | Member

2017 - present
Baton Rouge, LA

RESEARCH INTERESTS

GEOSPATIAL MODELING

erosion modeling • landscape evolution • computational ecology • lidar & drone analytics • geovisualization

DIGITAL DESIGN

generative design • digital fabrication • ecological robotics • human-computer interaction • tangible interfaces

SKILLS

PROGRAMMING

Python • HTML/CSS/JS • LaTeX

GIS

GRASS GIS • QGIS • ArcGIS

REMOTE SENSING

lidar • UAS/drones

DIGITAL DESIGN

Rhino • Grasshopper • Thea Render • Lumion • CAD/CAM • Adobe CC • etc.

DIGITAL FABRICATION

CNC machining • 3D printing • robotics

LINKS

Website: http://baharmon.github.io/
GitHub: https://github.com/baharmon
ResearchGate: https://www.researchgate.net/profile/Brendan_Harmon2/
ORCID: https://orcid.org/0000-0002-6218-9318
Sketchfab: https://sketchfab.com/lsu-landscape-architecture

PUBLICATIONS

BOOKS

Petrasova, Anna, **Brendan A Harmon**, Vaclav Petras, Payam Tabrizian, and Helena Mitasova (2018). *Tangible Modeling with Open Source GIS*. 2nd ed. Springer International Publishing.

Petrasova, Anna, **Brendan A Harmon**, Vaclav Petras, and Helena Mitasova (2015). *Tangible Modeling with Open Source GIS*. 1st ed. Springer. isbn: 978-3-319-25775-4.

PAPERS

Smith, Devin F, Steven T Goldsmith, **Brendan A 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 A, 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://www.geosci-model-dev.net/12/2837/2019/`.

Harmon, Brendan A, Anna Petrasova, Vaclav Petras, Helena Mitasova, and Ross Meentemeyer (2018). "Tangible topographic modeling for landscape architects". In: *International Journal of Architectural Computing*.

Millar, Garrett C, Payam Tabrizian, Anna Petrasova, Vaclav Petras, **Brendan A 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*.

Smith, Devin F., **Brendan A 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". In: *Geological Society of America Abstracts with Programs*. Vol. 49. 6. Seattle, Washington.

Tabrizian, Payam, **Brendan A 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 A 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.

Harmon, Russell S, Gerhard Wörner, Steven T Goldsmith, **Brendan A 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: `http://dx.doi.org/10.1130/B31388.1`.

Harmon, Brendan A (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: `http://dx.doi.org/10.1145/2839462.2854103`.

Harmon, Brendan A, 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: http://dx.doi.org/10.5194/isprs-archives-XLI-B2-647-2016.

Petrasova, Anna, Vaclav Petras, Derek Van Berkel, **Brendan A 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: http://dx.doi.org/10.5194/isprs-archives-XLI-B7-953-2016.

Tabrizian, Payam, Anna Petrasova, **Brendan A 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 A 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: http://dx.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: http://dx.doi.org/10.1130/G36082.1.

Petras, Vaclav, Anna Petrasova, **Brendan A 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: http://dx.doi.org/10.3390/ijgi4020942.

Petrasova, Anna, **Brendan A 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 A 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: http://dx.doi.org/10.1007/s10669-013-9448-3.

Tateosian, Laura, Helena Mitasova, **Brendan A 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: http://dx.doi.org/10.1109/TVCG.2010.202.

BOOK CHAPTERS

Harmon, Brendan A, 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 A, 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: http://dx.doi.org/10.1007/978-94-007-7161-1.

SELECT PRESENTATIONS

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

Nam, Hye Yeon, Iyleah Hernandez, and Brendan A 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 A, 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.

Harmon, Brendan A, 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 A, 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. url: https://baharmon.github.io/rgs-2016/.

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

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

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

REPORTS

Harmon, Brendan A, 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 A, 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: http://dx.doi.org/10.13140/RG.2.2.20859.87845.

Levine, Jay, Christopher Eads, Karl Wegmann, Helena Mitasova, Nathan Lyons, **Brendan A 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: `http://dx.doi.org/10.13140/RG.2.2.17512.11521`.

Meentemeyer, Ross K., Francesco Tonini, Douglas Shoemaker, Richard C. Cobb, **Brendan A 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`.

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/`

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. Shifting Datum. Baton Rouge Gallery. May 2019.
url: `https://www.batonrougegallery.org/nam-may2019`.

COURSES

LA 2101 Representation III
LA 7102 Grad Representation II
LA 7032 Grad Representation III
LA 4201 & **LA 7055** GIS for Designers
LA 7504 Ecological Robotics
LA 7031 Water Systems Studio
LA 7051 Option Studio
LA 7061 Advanced Topics Studio
DART 7003 Digital Culture Seminar