MICHAEL W. HENSON
University of Chicago
Chicago, Illinois 60637
Cell: (419) 346-9196
Email: hensonmw@gmail.com
Website: Michaelwhenson.com

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Education

Louisiana State University; Ph.D., Microbiology, May 2019
Dissertation Title: High-throughput cultivation of bacterioplankton from the Gulf of Mexico and genomics of the first cultured LD12 representative
Advisor: Dr. J Cameron Thrash

Central Michigan University; M.S., Biology, 2014
Thesis Title: Strain-level genomic and physiological variation in four *Microbacterium spp*. chromate reducers.
Advisor: Dr. Deric Learman

Miami University; B.A., Microbiology, 2011

Appointments

2020-	Postdoctoral Researcher, *University of Chicago*, Dr. Maureen Coleman
2019 - 2020	Postdoctoral Researcher, *University of Southern California*, Dr. J. Cameron Thrash
2014 - 2019	Graduate Research Assistant, *Louisiana State University*, Dr. J. Cameron Thrash
2017	Graduate Teaching Assistant, *Louisiana State University*, BIOL1207R: Introduction to Biology, mCURE Laboratory.
2012 - 2014	Graduate Research Assistant, *Central Michigan University*, Dr. Deric Learman
2012	Graduate Teaching Assistant, *Central Michigan University*, BIO326: Molecular Genetics Laboratory.
2011 - 2012	Student Contractor, *U.S. Environmental Protection Agency*, Supervisor: Dr. Jorge Santo-Domingo
2010	Intern, *U.S. Environmental Protection Agency*, Supervisor: Dr. Jorge Santo-Domingo

Grants and Awards

2020	Theodore Roosevelt Memorial Fund, "Cryptic diversity and ecosystem stability in the Great Lakes" *American Natural History Museum*, **$1,600**
2020	Simons Foundation Postdoctoral Fellowship in Marine Microbiology, "Testing the role of fine-scale diversity for local adaptation and population stability in *Synechococcus*", *Simons Foundation*, **$261,000**
2018	Graduate Student Association Travel Award, *Louisiana State University*
2018	McDaniel Travel Award, *Louisiana State University* **$1,000**
2017 - 2018	Lerner Gray Grant, "Examining the functional differences of two important SAR11 subclades and its insights on how salinity changes may alter global biogeochemical cycles" *American Natural History Museum*, **$2,500**
2015 - 2016	*LEEC* Research Grant, "Assessment of wetlands on the Louisiana coast using baseline microbial community structure and developing microbial indices", *LA Department of Wildlife & Fisheries*, **$1,138**
2014 - 2016	BioGrads Travel Grant, *Louisiana State University*
2014	Runner-up for Best Graduate Student Poster, *Louisiana State University* BioGrad Symposium
2013	Biology Department Graduate Student Travel Grant, *Central Michigan University*
2013	College of Science and Technology Graduate Student Travel Grant, *Central Michigan University*
2012	College of Graduate Studies Graduate Student Travel Grant, *Central Michigan University*
2013	Best Graduate Student Poster, *Michigan Branch of the American Society of Microbiology* Spring Meeting

Publications [career citation metrics: 340 citations, h-index= 8, i10-index= 7]

17. Savoie E.R., Lanclos, V.C., **Henson, M.W.**, Cheng, C., Getz, E.W., Barnes, S.J., LaRowe, D.E., Rappé M.S., and Thrash, J.C. 2021. Ecophysiology of the cosmopolitan OM252 bacterioplankton (Gammaproteobacteria). In Review- *mSystems*. *bioRxiv*. doi: https://doi.org/10.1101/2021.03.09.434695.
16. Feng, X., Chu, X., Qian, Y., **Henson, M.W.**, Lanclos, V.C., Qin, F., Zhao, Y., Thrash, J.C. and Luo, H., 2021. Mechanisms Driving Genome Reduction of a Novel Roseobacter Lineage Showing Vitamin B12 Auxotrophy. Accepted - *ISME* Journal. *bioRxiv*. doi: https://doi.org/10.1101/2021.01.15.426902.
15. Lucchesi A.M., **Henson M.W.**, Temperton B, Thrash J.C. 2020. Complete genome sequence of *Marinobacterium* sp. strain LSUCC0821, isolated from the coastal Gulf of Mexico. *Microbiology Resource Announcements* 9, e01035-20. https://doi.org/10.1128/MRA.01035-20.
14. **Henson, M.W.**, Lanclos, V.C., Pitre, D.M., Weckhorst, J.L., Lucchesi, A.M., Cheng, C., Temperton, B. and Thrash, J.C., 2020. Expanding the diversity of bacterioplankton isolates and modeling isolation efficacy with large scale dilution-to-extinction cultivation. *Applied and Environmental Microbiology* 86, e00943-20. doi: https://doi.org/10.1128/AEM.00943-20.
13. **Henson, M.W.**, Guidry, M.E., Carnes, M.K., Thrash, J.C. (2020). Draft genome sequence of the novel coastal bacterium LSUCC0115 from the MWH-UniPo clade, Order *Burkholderiales*, Class *Betaproteobacteria*. *Microbiology Resource Announcements* 9(2), e01492-19. doi: https://doi.org/10.1128/MRA.01492-19
12. Lanclos, V.C., **Henson, M.W.**, Dorion, C., Thrash, J.C. (2019). Draft genome of strain LSUCC0057, a member of the SAR92 clade of Gammaproteobacteria. *Microbiology Resource Announcements* 8(25), e00599-19. doi: https://doi.org/10.1128/genomeA.01231-16
11. Coelho, J.T., **Henson, M.W.**, Thrash, J.C. (2019). Draft genome sequence of strain LSUCC0112, a Gulf of Mexico representative of the Oligotrophic Marine *Gammaproteobacteria*. *Microbiology resource announcements*, *8*(27), e00521-19. doi: https://doi.org/10.1128/MRA.00521-19
10. Learman, D.R., Ahmand, Z., Brookshier, A., **Henson, M.W.**, Hewitt, V., Lis, A., Morrison, C., Robinson, A., Todaro, E., Wologo, E., Wynne, S., Alm, E.W., Kourtev, P.S., Santo Domingo, J.W. (2019). Comparative genomics of 16 *Microbacterium* spp. that tolerate multiple heavy metals and antibiotics. *PeerJ* 6, e6258. doi: https://doi.org/10.7717/peerj.6258
9. Craine, J., **M. W. Henson**, J. C. Thrash, J. Hanssen, G. Spooner, P. Fleming, M. Pukonen, F. Stahr, S. Spaulding, and N. Fierer. (2018). Environmental DNA reveals the structure of phytoplankton assemblages along a 2900-km transect in the Mississippi River. bioRxiv. doi: https://doi.org/10.1101/261727
8. **Henson M.W.**, Hanssen J, Spooner G, Flemming P, Pukonen M, Stahr F, Thrash, J.C. (2018). Microbial regime changes and indicators of eutrophication on the Mississippi River identified via a human-powered 2900 km transect. *Limnology and Oceanography*, *63*(5), 1837-1855. doi: https://doi.org/10.1002/lno.10811
7. **Henson, M.W.**, Lanclos, V.C., Faircloth, B.C., Thrash, J.C. (2018). Cultivation and genomics of the first freshwater SAR11 (LD12) isolate. *ISME* Journal, 12**,** 1846–1860. doi: https://doi.org/10.1038/s41396-018-0092-2
6. Lanclos, V.C., **Henson, M.W.**, Pitre, D.M. and Thrash, J.C. (2016). Draft genome sequence of strain LSUCC0135, an early diverging member of the order Methylophilales in the phylum Betaproteobacteria. *Genome announcements*, 4(6), e01231-16. doi: https://doi.org/10.1128/genomeA.01231-16.
5. **Henson, M.W.**, Pitre, D.M., Weckhorst, J.L., Lanclos, V.C., Webber, A.T., Thrash, J.C. (2016). Artificial seawater media facilitates cultivating members of the microbial majority from the Gulf of Mexico. *mSphere* 1(2), e00028-16. doi: https://doi.org/10.1128/mSphere.00028-16. ***Editor's pick*
4. Learman, D.R., **Henson, M.W.**, Thrash, J.C., Temperton, B., Brannock, P., Mahon, A., Halanych, K.H. (2016). Biogeochemical and microbial variation across 5500 km of Antarctic surface sediment implicates organic matter as a driver of benthic community structure. *Frontiers in Microbiology*: Aquatic Microbiology, 7(284). doi: https://doi.org/10.3389/fmicb.2016.00284
3. Ni, C., Horton, D. J., Rui, J., **Henson, M.W.**, Jiang, Y., Huang, X., & Learman, D. R. (2016). High concentrations of bioavailable heavy metals impact freshwater sediment microbial communities. *Annals of Microbiology*, 66**,** 1003–1012. doi: https://doi.org/10.1007/s13213-015-1189-8

2. **Henson M.W.**, Santo Domingo J.W., Kourtev P.S., Jensen R.V., Dunn J.A., Learman D.R. (2015) Metabolic and genomic analysis elucidates strain-level variation in *Microbacterium* spp. isolated from chromate contaminated sediment. *PeerJ* 3, e1395 https://dx.doi.org/10.7717/peerj.1395

1. Ryu, H., **Henson, M.**, Elk, M., Toledo-Hernandez, C., Griffith, J., Blackwood, D., Noble, R., Gourmelon, M., Glassmeyer, S., and Santo Domingo, J. (2013). Development of quantitative PCR assays targeting 16S rRNA gene of Enterococcus spp. and their application to the identification of Enterococcus species in environmental samples. *Applied and Environmental Microbiology* 79(1), 196-204; doi**:** https://doi.org/10.1128/AEM.02802-12

Invited talks

M.W. Henson, J.C. Thrash. Fresh and Salty: Cultivating Bacteria from the Coast of Louisiana. American Society of Microbiology General Meeting. June 2017.

M.W. Henson, J. Hanssen, G. Spooner.,P. Fleming, M. Pukonen, J.C. Thrash. From Big Boats to Row Boats: Utilizing Human Powered Row Boats to Sample the Mississippi River. LSU Computational Biology Seminar Series. April 2016.

***Ad Hoc* Reviewer**

Frontiers in Microbiology
Applied and Environmental Microbiology (AEM)
National Science Foundation DEB
Environmental Microbiology and Environmental Microbiology Reports
Federation of European Microbiological Societies (FEMS)
PeerJ
Microbiome

Oral Presentations and Posters

M. Swanson, A. Achmadi, H. Handika, S. Anita, **M.W. Henson**, J.A. Nations, K.C. Rowe, J.C. Thrash, J.A. Esselstyn. Host taxonomic and dietary signal in microbial communities varies across the gastrointestinal tract in wild rodents. Evolution 2019 Meeting. Providence, Rhode Island. Oral.

M.W. Henson, V.C. Lanclos, J.C. Thrash. Large Scale High-Throughput Cultivation Insights into the Culturability and Ecosystem Functions of Important Coastal Bacterioplankton. American Society of Microbiology Microbe 2019 Meeting. June 2019. San Francisco, CA. Oral and Poster.

M.W. Henson, V.C. Lanclos, J.C. Thrash. Evidence for stochasticity in high-throughput dilution-to-extinction cultivation of bacterioplankton. International Society of Microbial Ecology Meeting. August 2018. Leipzig, Germany. Poster.

J.C. Thrash, **M.W. Henson**, V.C. Lanclos. Functional insights into coastal bacterioplankton gleaned from high throughput cultivation. Gordon Research Conference. June 2018. Florence, Italy. Poster.

M.W. Henson, V.C. Lanclos, J.C. Thrash. Cultivation, genomics, and characterization of the first isolate from the freshwater SAR11 clade LD12. Ocean Sciences Meeting. February 2018, Portland, OR. Poster.

V.C. Lanclos, **M.W. Henson**, J.C. Thrash. The Ecology, Physiology, and Genomic Analysis of Novel SAR11 Isolates. Ocean Sciences Meeting. February 2018. Portland, OR. Poster.

M.W. Henson, J.C. Thrash. Fresh and Salty: Cultivating Bacteria from the Coast of Louisiana. University of Exeter. December 2017. Talk.

E. Nall, **M.W. Henson**, V. C. Lanclos, J.C. Thrash. Metabolic and Physiological Flexibility in a Coastal Isolate from the OM252 Clade of Gammaproteobacteria. American Society of Microbiology General Meeting. June 2017. Poster.

V. C. Lanclos, **M.W. Henson**, J. Cameron Thrash. The Cultivation and Ecology of Novel SAR11 Taxa From Coastal Louisiana Waters. American Society of Microbiology General Meeting. June 2017. Poster.

M.W. Henson, J.C. Thrash. Understanding microbial communities on the Louisiana coast and identifying potential indicators species that relate to environmental eutrophication. Louisiana Education and Environmental Symposium. February 2016. Baton Rouge, LA. Poster.

M.W. Henson, D.M. Pitre, J.L. Weckhorst, E. Nall, V.C. Lanclos, A.T. Webber, J.C. Thrash. Towards Defining the Ecological Niches of Novel Coastal Gulf of Mexico Bacterial Isolate. Ocean Sciences Meeting. February 2016, New Orleans, LA. Poster.

M.W. Henson, D.M. Pitre, J.L. Weckhorst, J.C. Thrash. Surveying the Northern Gulf of Mexico microbial community through cultivation-dependent and –independent techniques. American Society for Microbiology General Meeting. March 2015, New Orleans, LA. Poster.

M.W. Henson, D.M. Pitre, J.L. Weckhorst, J.C. Thrash. Surveying the Northern Gulf of Mexico microbial community through cultivation-dependent and –independent techniques. Southeastern Biogeochemical Symposium. March 2015, Atlanta, GA. Poster.

M.W. Henson, P. Kourtev, J.W. Santo Domingo, D.R. Learman. Connecting Function and Ecology: Defining Bacterial Cr (VI) Pathways In the Environment and Laboratory. American Society for Microbiology General Meeting. May 2014, Boston, MA. Poster.

D.R. Learman, P.M. Brannock, W.D. Orsi, C.M. Hansel, **M.W. Henson**, A.R. Mahon, and K.M. Halanych. Microbial community and functional diversity of Antarctic benthic sediments. American Society for Microbiology General Meeting. May 2014, Boston, MA. Poster.

M.W. Henson, E. Wogolo, N. Young, P. Kourtev, J.W. Santo Domingo, D.R. Learman. Connecting Function and Ecology: Defining Bacterial Cr (VI) Pathways In the Environment and Laboratory. Michigan Branch of American Society for Microbiology Spring Meeting, April, 2013, Big Rapids, MI. Poster. ***Best Graduate student Poster award*

M.W. Henson. Linking function and ecology: defining bacterial Cr(VI) reduction pathways in the environment. 1st Annual Institute of Great Lakes Research Student Symposium. Winter 2013, Mount Pleasant, MI. Student Speaker.

H. Ryu, **M.W. Henson**, M. Elk, S. Glassmeyer, J.W. Santo Domingo. Development and evaluation of 16S rRNA gene targeting Enterococcus genus- and species-specific assays. American Society for Microbiology General Meeting. June, 2012, San Francisco, CA. Poster.

Synergistic Activities

2020	PostDoc Representative. Department of Geophysical Sciences Equity, Diversity, and Inclusion Committee, *University of Chicago*
2018	Social Chair. LSU BioGrads Student Organization*, Louisiana State University*
2014 - 2017	Student Committee Member, Department of Biological Sciences Graduate Student Recruitment Weekend*, Louisiana State University*
2016	Graduate Mentor, BIOS - Biology Intensive Orientation for Students*, Louisiana State University*
2015 - 2016	Social Chair. LSU BioGrads Student Organization*, Louisiana State University*
2013	Student Delegate, Inauguration of the "Sino-U.S. Joint Lake, Watershed, and Wetland studies" between *Central Michigan University* and *Jiangxi Normal University*

Professional Workshops

Microbial Oceanography: Genomes to Biomes. *University of Hawai'i at Mānoa* (2015)
Hosted by the CMORE and SOEST of UHM, this was a month long intensive course exploring the dynamic and fundamental role marine microbes play in shaping ocean ecology and global biogeochemistry.

Next Generation Sequencing Workshop. Kellogg Biological Station, MI (2013)
Computational thinking and large-scale data analysis on UNIX platforms focusing on mapping, assembly, and analysis of short-read data for resequencing, whole genome, and RNAseq.

JGI Microbial Genomics and Metagenomics Workshop. Walnut Creek, CA (2013)
Hands-on tutorials, including tutorials for the following tools: IMG, IMG/M, IMG-ER,IMG-EDU, VISTA, GREENGENES, and ARB.

Mothur and HPCC workshop. *Michigan State University* East Lansing, MI (2013)
Hosted by the MSU Institute for Cyber Enabled Research & Microbiology and Molecular Genetics Department. Hands-on tutorials with Mothur and using the HPCC.

Frontiers in Metagenomics. *University of Missouri* Columbia, Missouri (2012)

Sea Time 82 days

Oceanographic Cruises

RV Kilo Moana, Station Aloha, Hawaii, 7 days June 10th-17th 2015
RV Pelican, Gulf of Mexico, 8 days, July 28th-August 4th 2015

*RV Pelic*an, Gulf of Mexico, 4 days August 19th-Augst-23rd 2015
RV Pelican, Gulf of Mexico, 11 days July 23rd-Aug 3rd 2016
RV Oceanus, Eastern Tropical Northern, Pacific, 21 Days, May 4th-22nd 2017
RV Atlantis, Eastern Pacific Rise, Pacific, 31 days, March 24th-April 25th*
*HOV Alvin cruise

Press
Scientists craft an artificial Seawater concoction at *Phys.org* (https://phys.org/news/2016-06-scientists-craft-artificial-seawater-concoction.html)
Artificial Seawater Revolutionizes Ocean Research in *Environmental-watch* Blog (http://www.environmental-watch.com/2016/06/15/artificial-seawater-revolutionizes-ocean-research/)
The Microbes of the Mississippi River - A Rowing Adventure for Science in *The Pursuit* Blog (http://lsuscienceblog.squarespace.com/blog/2016/11/29/the-microbes-of-the-mississippi-river-a-rowing-adventure-for-science)
LSU scientist teams with rowboat team to research Mississippi River water in *The Advocate* Newspaper (http://www.theadvocate.com/baton_rouge/entertainment_life/article_b7d86caa-b673-11e6-9b3d-e3d431615c66.html)