

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

Publications [career citation metrics: 234 citations, h-index= 8, i10-index= 8]

14. Henson, M.W., Lanclos, V.C., Pitre, D.M., Weckhorst, J.L., Lucchesi, A.M., Cheng, C., Temperton, B. and Thrash, C., 2020. Expanding the diversity of bacterioplankton isolates and modeling isolation efficacy with large scale dilution-to-extinction cultivation. Submitted to AEM. *bioRxiv*. <https://doi.org/10.1101/2020.04.17.046896>
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. 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 <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*. doi:10.1038/s41396-018-0092-2. bioRxiv. doi: <http://dx.doi.org/10.1101/093567>
 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), pp.e01231-16.
 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). 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*. doi: 10.3389/fmicb.2016.00284 <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*, 1-10. 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 Environmental Microbiology*. January 2013 vol. 79 no. 1 196-204.

Grants and Awards

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| 2018 | Graduate Student Association Travel Award, <i>Louisiana State University</i> |
| 2018 | McDaniel Travel Award, <i>Louisiana State University</i> \$1000 |
| 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, \$2500 |
| 2015 - 2016 | LEEC Research Grant, "Assessment of wetlands on the Louisiana coast using baseline microbial community structure and developing microbial indices", <i>LA Department of Wildlife & Fisheries</i> , \$1138 |
| 2014 - 2016 | BioGrads Travel Grant, <i>Louisiana State University</i> |
| 2014 | Runner-up for Best Graduate Student Poster, <i>Louisiana State University BioGrad Symposium</i> |
| 2013 | Biology Department Graduate Student Travel Grant, <i>Central Michigan University</i> |
| 2013 | College of Science and Technology Graduate Student Travel Grant, <i>Central Michigan University</i> |
| 2012 | College of Graduate Studies Graduate Student Travel Grant, <i>Central Michigan University</i> |
| 2013 | Best Graduate Student Poster, <i>Michigan Branch of the American Society of Microbiology Spring Meeting</i> |

Invited talks

- Michael W. Henson**, J. Cameron Thrash. Fresh and Salty: Cultivating Bacteria from the Coast of Louisiana. American Society of Microbiology General Meeting. June 2017.
- Michael W. Henson**, Hanssen, J., Spooner, G., Fleming, P., Pukonen, M., J. Cameron 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

National Science Foundation DEB
Environmental Microbiology and Environmental Microbiology Reports

Oral Presentations and Posters

- Mark Swanson, Anang Achmadi, Heru Handika, Syahfitri Anita, **Michael W. Henson**, Jonathon A. Nations, Kevin C. Rowe, J. Cameron Thrash, Jacob 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.
- Michael W. Henson**, V. Celeste Lanclos, J. Cameron 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.
- Michael W. Henson**, V. Celeste Lanclos, J. Cameron 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. Cameron Thrash, **Michael W. Henson**, V. Celeste Lanclos. Functional insights into coastal bacterioplankton gleaned from high throughput cultivation. Gordon Research Conference. June 2018. Florence, Italy. Poster.
- Michael W. Henson**, V. Celeste Lanclos, J. Cameron Thrash. Cultivation, genomics, and characterization of the first isolate from the freshwater SAR11 clade LD12. Ocean Sciences Meeting. February 2018, Portland, OR. Poster.
- V. Celeste Lanclos, **Michael W. Henson**, J. Cameron Thrash. The Ecology, Physiology, and Genomic Analysis of Novel SAR11 Isolates. Ocean Sciences Meeting. February 2018. Portland, OR. Poster.
- Michael W. Henson**, J. Cameron Thrash. Fresh and Salty: Cultivating Bacteria from the Coast of Louisiana. University of Exeter. December 2017. Talk.
- Emily Nall, **Michael W. Henson**, V. Celeste Lanclos, J. Cameron 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. Celeste Lanclos, **Michael 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.
- Michael W. Henson**, J. Cameron 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.
- Michael W. Henson**, David M. Pitre, Jessica Lee Weckhorst, Emily Nall, V. Celeste Lanclos, Austen T. Webber, J. Cameron Thrash. Towards Defining the Ecological Niches of Novel Coastal Gulf of Mexico Bacterial Isolate. Ocean Sciences Meeting. February 2016, New Orleans, LA. Poster.
- Michael W. Henson**, David M. Pitre, Jessica Lee Weckhorst, J. Cameron 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.
- Michael W. Henson**, David M. Pitre, Jessica Lee Weckhorst, J. Cameron Thrash. Surveying the Northern Gulf of Mexico microbial community through cultivation-dependent and –independent techniques. Southeastern Biogeochemical Symposium. March 2015, Atlanta, GA. Poster.
- Henson, M.W.**, Kourtev, P., Santo Domingo, J.W., Learman, D.R. 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.
- Deric R. Learman, Pamela M. Brannock, William D. Orsi, Colleen M. Hansel, **Michael W. Henson**, Andrew R. Mahon, and Kenneth M. Halanych. Microbial community and functional diversity of Antarctic benthic sediments. American Society for Microbiology General Meeting. May 2014, Boston, MA. Poster.
- Henson, M.W.**, Wogolo, E., Young, N., Kourtev, P., Santo Domingo, J.W., Learman, D.R. 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**

Henson, M. 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.

Ryu, H., **Henson, M.**, Elk, M., Glassmeyer, S., and Santo Domingo, J. 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

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 Pelican, Gulf of Mexico, 4 days August 19th-August-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://lsusciencelblog.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)