

# Jonathan Warnock, PhD

Associate Professor, Dept. of Geography, Geology, Environment and Planning,  
Indiana University of Pennsylvania

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## Education

Northern Illinois University

- *Doctor of Philosophy in Geology* – May, 2013

University of Illinois, Chicago

- *Master of Science in Geology* – August, 2008

Northern Illinois University

- *Bachelor of Science in Geology* – August, 2006
- *Bachelor of Science in Biology* – August, 2006

Note: names in **bold type**  
indicate a student  
coauthor.

## Research

- Climate and environmental change through the Holocene of the Baltic Sea
- Global change in marine systems: nutrient cycles over glacial/interglacial timescales
- Interactions of sedimentology and taphonomy in diatoms and dinosaurs
- Environmental change and vertebrate taphonomic processes of the Jurassic Morrison Formation
- Refining estimates of original primary productivity of the Southern Ocean
- Ocean/Ice/Biosphere interactions in Plio/Pleistocene Antarctica
- Coastal processes and global change in Antarctica

## Teaching

- Upper level
  - Sedimentology; Stratigraphy; Paleontology
- Lower level Majors'
  - Historical Geology
- Liberal Studies
  - Oceans and Atmospheres; Geology of Climate Change; Dynamic Earth

## Publication History

Armbrecht, L., Weber, M., Raymo, M., Peck, V., Williams, T., Warnock, J., Kato, Y., Hernández-Almeida, I., Hoem, F., Reilly, B., Hemming, S., Bailey, I., Martos, Y., Gutjahr, M., Percuoco, V., Allen, C., Brachfeld, S., Cardillo, F., Du, Z., Fauth, G., Fogwill, C., Garcia, M., Glüder, A., Guitard, M., Hwang, J.-H., Iizuka, M., Kenlee, B., O'Connell, S., Pérez, L., Ronge, T., Seki, O., Tauxe, L., Tripathi, S., and Zheng, X. 2022. Ancient marine sediment DNA reveals diatom transition in Antarctica. *Nature Communications*. doi: 10.1038/s41467-022-33494-4

Warnock, J.P., Reilly, B.T., Raymo, M.E., Weber, M.E., Peck, V., Williams, T., Armbrecht, L., Bailey, I., Brachfeld, S., Du, Z., Fauth, G., García, M.M., Glüder, A., Guitard, M., Gutjahr, M., Hemming, S., Hernández-Almeida, I., Hoem, F., Hwang, J.-H., Iizuka, M., Kato, Y., Lee, B., Martos, Y.M.,

- O'Connell, S., Pérez, L.F., Ronge, T.A., Seki, O., Tauxe, L., Tripathi, S., Zheng, X., Stoner, J., and Scherer, R.P. 2022. *Paleoceanography and Paleoclimatology*. doi: 10.1029/2021PA004394.
- Bailey, I., Hemming, S., Reilly, B., Rollinson, G., Williams, T., Weber, M., Raymo, M., Peck, V., Ronge, T., Brachfeld, S., O'Connell, S., Tauxe, L., Warnock, J., Armbrrecht, L., Cardillo, F., Du, Z., Fauth, G., Garcia, M., Glüder, M., Guitard, M., Gutjahr, M., Hernández-Almeida, I., Hoem, F., Hwang, J.-H., Iizuka, M., Kenlee, B., Martos, Y., Perez, L., Seki, O., Tripathi, S., and Zheng, X. 2022. Episodes of early Pleistocene West Antarctic Ice Sheet retreat recorded by Iceberg Alley sediments. *Paleoceanography and Paleoclimatology*. doi: 10.1029/2022PA004433
- Peterson, J.E., Warnock, J.P., Coenen, J.J., **Bills, C.A., and Denoto, M.E.** 2022. A review of charophytes of the Cleveland-Lloyd Dinosaur Quarry at Jurassic National Monument in the Upper Morrison Formation, Emery County, Utah, USA. *Geology of the Intermountain West*.
- Weber, M.E., Bailey, I., Hemming, S.R., Martos, Y.M., Reilly, B.T., Ronge, T.A., Brachfeld, S., Williams, T., Raymo, M., Belt, S.T., Smik, L., Vogel, H., Peck, V., Armbrrecht, L., Cage, A., Cardillo, F.G., Du, Z., Fauth, G., Fogwill, C.J., Garcia, M., Garnsworth, M., Glüder, A., Guitard, M., Gutjahr, M., Hernández-Almeida, I., Hoem, F.S., Hwang, J.-H., Iizuka, M., Kato, Y., Kenlee, B., O'Connell, S., Pérez, L.F., Seki, O., Stevens, L., Tauxe, L., Tripathi, S., Warnock, J., and Zheng, X. 2022. Antiphased dust deposition and productivity in the Antarctic Zone over 1.5 million years. *Nature Communications*. Doi 10.1038/s41467-022-29642-5.
- Weber, M.E., Raymo, M.E., Peck, V.L., Williams, T., and the Expedition 382 Scientists. 2021. *Iceberg Alley and Subantarctic Ice and Ocean Dynamics*. Proceedings of the International Ocean Discovery Program, 382: College Station, TX (International Ocean Discovery Program). <https://doi.org/10.14379/iodp.proc.382.2021>
- Reilly, B.T., Tauxe, L., Brachfeld, S., Raymo, M., Bailey, I., Hemming, S., Weber, M.E., Williams, T., García, M., Guitard, M., Martos, Y.M., Pérez, L.G., Zheng, X., Armbrrecht, L., Cardillo, F.G., Du, Z., Fauth, G., Glueder, A., Gutjahr, M., Hernández-Almeida, I., Home, F.S., Hwang, J.-H., Iizuka, M., Kato, Y., Kenlee, B., O'Connell, S., Peck, V., Ronge, T.A., Seki, O., Tripathi, S., and Warnock, J. 2021. New Magnetostratigraphic Insights from Iceberg Alley on the Rhythms of Antarctic Climate During the Plio-Pleistocene. *Paleoceanography and Paleoclimatology*. doi: 10.1029/2020PA003994.
- Pérez, L.F., Martos, Y.M., García, M., Weber, M.E., Raymo, M.E., Williams, T., Bohoyo, F., Armbrrecht, L., Bailey, I., Brachfeld, S., Glüder, A., Guitard, M., Gutjahr, M., Hemming, S., Hernández-Almeida, I., Home, F.S., Kato, Y., O'Connell, S., Peck, V.L., Reilly, B., Ronge, T.A., Tauxe, L., Warnock, J., Zheng, X. and the IODP Expedition 382 Scientists. 2021. Miocene to present oceanographic variability in the Scotia Sea and Antarctic ice sheets dynamics: Insight from revised seismic-stratigraphy following IODP Expedition 382. *Earth and Planetary Science Letters*. 553, 116657.
- Warnock, J.P., & **Krueger, R.E.** 2020. A record of diatom preservation from the AND-1B drillcore: The significance of taphofacies on diatom preservation. *Marine Micropaleontology*. 158, 1-7.
- Warnock, J., Andrén, E., Juggins, S., Lewis, J., Ryves, D.B., Andrén, T., & Weckström, K. 2019. A high-resolution diatom-based Middle and Late Holocene environmental history of the Little Belt region, Baltic Sea. *Boreas*. 49 (1), 1-16.

- Warnock, J.P., Peterson, J.E., Clawson, S.R., Matthews, N.A., Breithaupt, B.H. 2018. Close-range photogrammetry of the Cleveland-Lloyd Dinosaur Quarry, Upper Jurassic, Emery County, Utah. *Geology of the Intermountain West*. Vol. 5, 271-285.
- Jansen, J., Hill, N.A., Dunstan, P.K., McKinlay, J., Sumner, M.D., Post, A.L., Eléaume, Armand, L.K., Warnock, J.P., Galton-Fenzi, B.K., and Johnson, C.R. 2018. Abundance and richness of key Antarctic seafloor fauna correlates with modelled food availability. *Nature: Ecology & Evolution*. Vol. 2, 71-80. doi: 10.1038/s41559-017-0392-3
- Foster, J.R., Hunt-Foster, R.K., Gorman II, M.A., Trujillo, K.C., Suarez, C.A., McHugh, J.B., Peterson, J.E., Warnock, J.P., and Schoenstein, H.E. 2018. Paleontology, Taphonomy, and Sedimentology of the Mygatt-Moore Quarry, a Large Dinosaur Bonebed in the Morrison Formation, Western Colorado – Implications for the Upper Jurassic Dinosaur Preservation Modes. *Geology of the Intermountain West*, 5 23-93.
- Kotthoff, U., Groeneveld, J., Ash, J.L., Fanget, A.-S., Krupinski, N.Q., Peyron, O., Stepanova, A., Warnock, J., Van Helmond, N.A.G.M., Passey, B.H., Clausen, O.R., Bennike, O., Andrén, E., Granaszewski, W., Andrén, T., Filipsson, H.L., Seidenkrantz, M.-S., Slomp, C.P., and Bauersachs, T. 2017. Reconstructing Holocene temperature and salinity variations in the western Baltic Sea region: a multi-proxy comparison from the Little Belt (IODP Expedition 347, Site M0059). *Biogeosciences*, 14 (23), 5607-5632. doi: 10.5194/bg-14-5607-2017
- Warnock, J.P., Bauersachs, T., Kotthoff, U., Brandt, H.-T. and Andrén, E. 2017. Holocene environmental history of the Ångermanälven Estuary, northern Baltic Sea. *Boreas*. doi: 10.1111/bor.12281
- Peterson, J.E., Warnock, J.P., Eberhart, S.L., Clawson, S.R. and Noto, C.R. 2017. New data towards the development of a comprehensive taphonomic framework for the Late Jurassic Cleveland-Lloyd Dinosaur Quarry, Central Utah. *PeerJ*. 5:e3368; doi: 10.7717/peerj3368.
- Peterson, J.E., Lenczewski, M.E., Clawson, S.R. and Warnock, J.P. 2017. Role of sediment size and biostratigraphy on the development of biofilms in recent avian vertebrate remains. *Frontiers in Earth Science*. 5:30. doi: 10.3389/feart.2017.00030
- Warnock, J.P. and Scherer, R.P. 2016. Increased diatom dissolution in Prydz Bay, East Antarctica linked to inception of the Prydz Bay gyre. *Diatom Research*. DOI: 10.1080/0269249X.2016.1182075
- Andrén, T., Jørgensen, B.B., Cotterill, C., Green, S., and the Expedition 347 scientific party. (2015). IODP expedition 347: Baltic Sea Basin paleoenvironment and biosphere. *Scientific Drilling*. 20, 1-12.
- Warnock, J.P., R.P. Scherer and M.A. Konfirst. (2015) "A record of Pleistocene diatom preservation in the Amundsen Sea, West Antarctica with possible implications on silica leakage." *Marine Micropaleontology*. 117, 40-45
- Warnock, J.P. and R.P. Scherer. (2015) "Diatom species abundance and morphologically-based dissolution proxies in coastal Southern Ocean assemblages." *Continental Shelf Research*. 102, 1-8

Dugan, H.A., P.T. Doran, B. Wagner, F. Kenig, C.H. Fritsen, S. Arcone, E. Kuhn, N.E. Ostrom, J. Warnock, and A.E. Murray. (2015) "27m of lake ice on and Antarctic lake reveals past hydrologic variability." The Cryosphere.9, 439-450

Warnock, J. and R. Scherer (2014) "A revised method for determining the absolute abundance of diatoms and other silt-sized sedimentary particles." Journal of Paleolimnology. DOI 10.1007/s10933-014-9808-0

Andr n, T., J rgensen, B.B., Cotterill, C., Green, S., and the Expedition 347 Scientists. Proceedings of the International Ocean Drilling Program. Volume 347.

Expedition Scientists (2014) International Ocean Drilling Program Expedition 347, "Baltic Sea Paleoenvironment" Initial Report.

Warnock, J. and P. Doran (2013) "Distribution of siliceous-walled algae in Taylor Valley, Antarctica lakes." International Journal of Geoscience, 4, 688-699.

Warnock, J., R. Scherer, and P. Loubere (2007) "A Quantitative Assessment of diatom dissolution and late quaternary primary productivity in the Eastern Equatorial Pacific" Deep Sea Research II, Vol. 54, 772-783.

Warnock, J (2013) "Diatom dissolution in the Southern Ocean: Experimental diatom taphonomy with application to Pliocene to Holocene Antarctic sediments." Doctoral Dissertation, Northern Illinois University, DeKalb. 235pp.

Warnock, J (2008) "Provenance of organic matter in Taylor Valley, Antarctica lakes: Scanning Electron Microscopy of sediment." Master's Thesis, University of Illinois, Chicago. 65pp.

### **Selected Presentations**

Warnock, J. (2021, 12/13-17) *A diatom-based record of the mid-Pleistocene transition from the Scotia Sea, IODP Expedition 382* [Conference presentation]. AGU Fall Meeting 2021. New Orleans, Louisiana.

**Strittmatter, G.**, and Warnock, J. (2021, 12/13-17) *How do Scotia Sea diatoms relate to climate during the last 30,000 years?* [Conference presentation]. AGU Fall Meeting 2021. New Orleans, Louisiana.

Reilly, B., Tauxe, L., Brachfeld, S., Hatfield, R., Stoner, J., Raymo, M., Bailey, I., Hemming, S., Weber, M., Williams, T., Garcia, M., Guitard, M., Martos, Y., Perez, L., Zheng, X., Armbrecht, L., Cardillo, F., Du, Z., Fauth, G., Glueder, A., Gutjahr, M., Hern ndez-Almeida, I., Hoem, F., Hwang, J., Iizuka, M., Kato, Y., Kenlee, B., O'Connell, S., Peck, V., Ronge, T., Seki, O., Tripathi, S., Warnock, J., New magnetostratigraphic insights from Iceberg Alley on the rhythms of Antarctic climate during the Plio-Pleistocene, Geological Society of America Connects Online, October 26-30, 2020, World Wide Web.

Brachfeld, S., Reilly, B., Tauxe, L., Weber, M., Raymo, M., Peck, V., Williams, T., Bailey, I., Hemming, S., O'Connell, S., Ronge, T., Kenlee, B., Kaplan, M., Licht, K., and the IODP Expedition 382 Scientists, The Scotia Sea magnetic susceptibility record: coupling of the deep ocean and atmosphere? Geological Society of America Connects Online, October 26-30, 2020, World Wide Web.

Santos, B., Hemming, S., Williams, T., O'Connell, S., Reilly, B., Kaplan, M., and the IODP Expedition 382 Scientists, Connecting the Plio-Pleistocene climate records of the Pacific and Atlantic sides of the Antarctic Peninsula by cycle to cycle correlation, Geological Society of America Connects Online, October 26-30, 2020, World Wide Web.

Hemming, S.R., Sandoz, D., Licht, K., Williams, T., Siddoway, C.S., Reiners, P.W., Thomson, S.N., COX, S.E., Van De Flierdt, T., Bailey, I., Brachfeld, S.A., O'Connell, S., Weber, M., Raymo, M.E., Peck, V.L., and the IODP Expedition 382 Scientists, Geochronology evidence for the provenance of dropstones in the Scotia Sea. Geological Society of America Connects Online, October 26-30, 2020, World Wide Web.

Weber, M.E., Raymo, M.E., Peck, V.L., Williams, T. and the Expedition 382 Scientists, Quaternary dust climate couplings in Iceberg Alley – First Results from IODP Expedition 382. Geological Society of America Connects Online, October 26-30, 2020, World Wide Web.

Raymo, M.E., Jasper, C.E., Mintz, M., Dyer, B., Meyers, S.R., Lisiecki, L.E., Warnock, J., Hernández-Almeida, I., Williams, T., and Weber, M. 2019. The Mid-Pleistocene Transition: the Inevitable Result of Long-Term evolution of the East Antarctic Ice Sheet? American Geophysical Union Fall Meeting.

Mintz, M., Jasper, C.E., Hernández-Almeida, I., Warnock, J., Glueder, A., Reilly, B.T., Raymo, M.E., Williams, T., and Weber, M. 2019. Early Pleistocene Multiproxy Records from Dove Basin, Scotia Sea: New data to evaluate the 41kyr World Problem. American Geophysical Union Fall Meeting.

Yang, D., O'Connell, S., Hemming, S.R. and Warnock, J.P. 2019. Evidence for East Antarctic Oligocene Glaciation from ODP Site 693, Dronning Maud Land (DML). American Geophysical Union Fall Meeting.

Warnock, J., **Petrico, J.**, and Peterson, J. New geochemical data supports episodes of hypereutrophy to explain the taphonomic signal of the Cleveland-Lloyd Dinosaur Quarry, Upper Jurassic Morrison Formation. 2018 Society for Vertebrate Paleontology

Warnock, J. Evaluation and utilization of diatom taphonomic data. 2018 Polar Marine Diatom Workshop

**Ferguson, B.** and Warnock, J. "Relating Fragilariopsis Kerguelensis Fragments to Original Valve Dimensions" 2018 Northeast Geological Society of America Mtg, Burlington, Vt.

**Parker, S.** and Warnock, J. "The Effect of a Western Antarctic Ice Sheet Collapse on Nutrient Recycling Rates During Marine Isotope Stage 31: Initial Findings" 2018 Northeast Geological Society of America Mtg, Burlington, Vt.

Warnock, J. "Holocene Environmental History of the Ångermanäl Ven Estuary, Northern Baltic Sea" at the 2018 Northeast Geological Society of America Mtg in Burlington, Vt.

Warnock, J.P., Bauersachs, T., Kotthoff, U., Brandt, H.-T. and Andrén, E. Holocene environmental history of the Ångermanälven Estuary, northern Baltic Sea. September, 2017. Stone Lab, Ohio.

**Ferguson, B. and Warnock, J.P.** Relating *Fragilarioiopsis Kerguelensis* Fragments to Original Valve Dimensions. North American Diatom Symposium. September, 2017. Stone Lab, Ohio.

Warnock, J.P. and Andrén, E. A diatom-based climatic reconstruction of the Little Belt Region, Baltic Sea. International Diatom Symposium. August, 2016. Quebec, Canada

Kottloff, U. Andrén, A., Andrén, T., Ash, J., Bauersachs, T., Fanget, A.-S., Granoszewski, W., Groenveld, J., Quintana Krupinski, N., Peyron, O., Slomp, C., Stepanova, A., Warnock, J., van Helmond, N.A.G.M., and the Expedition 347 Science Party. Reconstructing Holocene palaeo-environmental conditions in the Baltic: A multi-proxy comparison for the Little Belt (IODP Expedition 347, Site M0059). European Geophysical Union. April, 2016. Vienna, Austria.

Peterson, J.E., Eberhart, S, Warnock, J.P., Clawson, S.R., and Noto, C. 2016. Bone fragments from the matrix of the Cleveland-Lloyd Dinosaur Quarry (Upper Jurassic Morrison Formation) and their bearing on depositional reconstructions. North Central Geological Society of America. 50th Annual Meeting, April 18-19, 2016. Champaign, IL.

Peterson, J.E., Warnock, J.P., and Clawson, S.R. 2016. New data from the Cleveland-Lloyd Dinosaur Quarry: Insights into Taphonomy. Utah Friends of Paleontology Annual Meeting, April 1 2016

Peterson, J.E., Warnock, J.P., and Clawson, S.R. (2016) New data towards a taphonomic framework for the Cleveland-Lloyd Dinosaur Quarry. Society of Vertebrate Paleontology 76th Annual Meeting, Salt Lake City, UT October 26-29, 2016.

Warnock, J. "A diatom-based Holocene history of the Ångermanälven Estuary, IODP Expedition 347 – Baltic Sea Paleoenvironments" Invited Talk. Pittsburgh Geological Society, Pittsburgh, Pennsylvania. November 2015.

Warnock, J. "A diatom-based Holocene history of the Ångermanälven Estuary, IODP Expedition 347 – Baltic Sea Paleoenvironments" 23<sup>rd</sup> North American Diatom Symposium, Beaver Island, Michigan. September 2015

Warnock, J. "A diatom-based Holocene history of the Ångermanälven Estuary" Post-cruise meeting for IODP Expedition 347. Stockholm, Sweden. September 2015.

Warnock, J. and R. Scherer "A new proxy for diatom preservation in Southern Ocean sediments and application to Pleistocene sediments of the Amundsen Sea" 11<sup>th</sup> International Conference on Paleoceanography, Sitges, Spain. September 2013.

Warnock, J. "Light and Scanning Electron Microscope assessments of diatom preservation." 4<sup>th</sup> Polar Marine Diatom Workshop, Cardiff, Wales. August 2013

Warnock, J. and R. Scherer. "Variable diatom preservation in the Holocene Prydz Bay, N.B. Palmer Core 01-01 24." 32<sup>nd</sup> Scientific Committee on Antarctic Research Conference. Portland, Oregon. July 2012

Warnock, J. "Diatom preservation in the Amundsen sea." 21<sup>st</sup> North American Diatom Symposium, Flathead Lake, Montana. September, 2011

Buter, M. and J. Warnock "Establishment of a silica cycling proxy for the surface oceans." 21<sup>st</sup> North American Diatom Symposium. Flathead Lake, Montana, September 2011.

Warnock, J. "A diatom dissolution proxy using *Fragilariopsis kerguelensis* and some initial results." 11<sup>th</sup> International Symposium on Antarctic Earth Sciences, Edinburgh, Scotland. July, 2011

Warnock, J. "A diatom dissolution proxy using *Fragilariopsis kerguelensis* and some initial results." 3<sup>rd</sup> Polar Marine Diatom Workshop. Sydney, Australia. July, 2011

Warnock, J. "A new dissolution proxy for *Fragilariopsis nana*: A common Southern Ocean diatom." 21<sup>st</sup> International Diatom Symposium, 2010. St. Paul, Minnesota. August, 2010

Warnock, J., and R. Scherer. "Refining Marine Diatom Paleoproductivity Estimates for the Southern Ocean." 20<sup>th</sup> North American Diatom Symposium, Iowa Lakeside Lab, Lakeside Iowa. September, 2009

Warnock, J., and R. Scherer. "Refining Marine Diatom Paleoproductivity Estimates for the Southern Ocean." Antarctic Climate Evolution Symposium, Museo de las Ciencias, Granada, Spain. September, 2009.

Warnock, J., and R. Scherer. "Variation in morphology with dissolution of common Southern Ocean diatoms." European Geophysical Union Annual Meeting, Vienna, Austria. April, 2009.

Warnock, J. "Variation in morphology with dissolution of common Southern Ocean diatoms." North-Central Section Meeting, Geological Society of America. Burpee Museum, Rockford, Il. April, 2009.

Warnock, J. "Provenance of organic matter in Taylor Valley, Antarctica lakes: Scanning Electron Microscopy of sediments." McMurdo LTER Meeting, University of Illinois, Chicago, Chicago Illinois. June, 2008.

Warnock, J. "Using SEM to infer processes and provenance of organic matter in the Lakes of Taylor Valley, Antarctica." McMurdo LTER Meeting, University of Colorado, Boulder. September, 2007.

Warnock, J., Scherer, R., Loubere, P. "Diatom Preservation and Ocean Sediment Reworking" 18<sup>th</sup> North American Diatom Symposium. Mobile, Al. November, 2005.

Warnock, J., Scherer, R., Loubere, P. "What do Opal Accumulation Rates Really Mean?" AGU Chapman Conference on the Role of Marine Organic Carbon and Calcite Fluxes in Driving Global Climate Change, Past and Future. Woods Hole, Ma. July, 2005.

### **Service Positions**

My service efforts surround sustainability, in both the social equity and climate/environmental realms.

President – IUP President’s Commission on LGBTQIA+ Concerns – This group works in conjunction with the Office of Social Equity to increase the visibility of LGBTQIA+ people on campus and to improve the campus climate for and safety of LGBTQIA+ individuals. It is an important effort to improve diversity, inclusion and equity at IUP.

Member – Sustainability Studies Program and Minor – The primary goal of this group is to offer the SUST minor, a cross-disciplinary program between KCNSM and HSS. We also sponsor programming and events on campus. I co-directed this group for an extended 2.5 year term ending December 2019.

Sustainability Subcommittee Chair – New Science Building Committee – This group worked to include sustainability initiatives in the planning of Kopchick Hall.

Member – PASSHE Sustainability Taskforce – We work with the Chancellor’s office to improve sustainability, in terms of environmental/climate sustainability and social equity, within PASSHE.

Advisory Board Member – Solar United Neighbors of Pennsylvania (a non-profit) – SUN advocates for solar power and helps individuals to purchase cheap solar power systems for their home and businesses through solar co-ops. I helped to successfully run two co-ops in Indiana county, bringing solar power to more than 20 homes and creating solar jobs in western PA.

Member – Polar Marine Diatom Workshop Steering Committee (a professional scientific organization) – This group holds scientific workshops concerning diatom records of paleoclimate in the Southern Ocean. These workshops are vitally important to the community as they serve as places to train both new and experienced diatom scientists, to network and to plan scientific drilling expeditions in the Southern Ocean.

Member – Indiana County Sustainable Economic Development Taskforce Steering Committee – The goal of the Taskforce is to increase sustainability and sustainable initiatives in Indiana County in ways that develop the local economy. We work with the Office of the County Commissioner.

### **Professional Development**

Forensic taphonomy and entomology of Texas short course. Forensic Anthropology Center at Texas State, June 2017.

Attendance of the “Teaching Workshop for Early Career Geoscience Faculty” offered by NSF and On the Cutting Edge, August 2016, University of Maryland – Includes a travel award for registration costs \$750

Attendance of the International Ocean Drilling Program Antarctic Drilling Planning Meeting, May 2016, Texas A&M University – Includes a travel award for registration, flight, hotel and meals

### **Grants, Honors and Awards**

NSF Grant “Collaborative Research: Linking Marine and Terrestrial Sedimentary Evidence for Pliopleistocene Variability of Weddell Embayment and Antarctic Peninsula Glaciation” 9/1/21 - \$94,574



Bureau of Land Management Grant “Protect and Inspect: Paleoenvironmental Analyses and Site Preservation of the Cleveland-Lloyd Dinosaur Quarry” – 7/1/22 - \$16,519.28

Co-PI on the successful NSF MRI grant to acquire a new 3D laser scanner

Post Expedition Award – IODP Expedition 382, Iceberg Alley \$18,000

Invitation to sail as a ship-board scientist International Ocean Discovery Project Expedition 382

IODP Expedition 382 Participation Grant \$44,025

Co-PI on the successful NSF MRI grant to acquire a scanning electron microscope

IUP Center for Teaching Excellence Innovative Teaching award – In-class excavation assignment in GEOS 353 (Paleontology) - \$500 – 4/4/18

IUP ACPAC Technology Grant – Purchase of a Gigapan system for outcrop photography (\$500) – 3/23/18

Bureau of Land Management (State of Utah) field work support grant (06/2016, 2017, 2018, 2019, 2020) \$500/yr

NSF Research Experiences for Undergraduates Supplemental award for Grant 1443420 (10/2015-08/2016) \$5,000.

NSF Grant 1443420 “Diatom and Oxygen Isotope Evidence of Pliocene Antarctic Ice Sheet Dynamics and Ross Sea Paleooceanography” (08/2015-08/2016) Total award: \$211,337; Proportion funding Warnock: \$18,237.

University Senate Research Committee Award “Cleveland-Lloyd Dinosaur Quarry: Taphonomic consensus from proper technique” 10/2015 \$2,000.

Post Expedition Award – IODP Expedition 347, Baltic Sea Paleoenvironments \$15,000

Proponent on successfully funded International Ocean Discovery Program Grant 839-Full: Development and Sensitivity of the West Antarctic Ice Sheet from Drill Records of Amundsen Sea Embayment

Integrated Ocean Drilling Program Expedition 347 – Baltic Sea Paleoenvironments  
Invitation to participate as shore-based diatom specialist, Summer 2013

EAPSI 2012 Fellowship – Australia \$30K

East Asia and Pacific Summer Institutes grant from the NSF and Australian Academy of Science, 2012 to work with Dr. Leanne Armand at Macquarie University, Sydney