

**David Brankovits**

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**EDUCATION**

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- Ph.D. Marine Biology Interdisciplinary Program; 2011 – 2017  
Texas A&M University at Galveston, USA; Dissertation: *Biogeochemical and hydrological controls of methane dynamics and ecosystem function in a tropical karst subterranean estuary*, advisors: Thomas Iliffe and John Pohlman (USGS)
- M.S. Biology – Combined B.S. & M.S. Program; 2003 – 2009  
Eötvös Loránd University (ELTE); Budapest, Hungary; Thesis: *Study of the habitat usage of the highly endangered Hungarian meadow viper (Vipera ursinii rakosiensis) by GIS methods*, advisor: Gergely Szövényi

**PROFESSIONAL EXPERIENCE**

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- 2020 – present Postdoctoral Fellow – Texas A&M University at Galveston  
Supervisor: Pete van Hengstum (TAMUG)
- 2020 – present Associate Research Investigator – U.S. Geological Survey Woods Hole  
Guest Investigator – Woods Hole Oceanographic Institution
- 2017 – 2020 Postdoctoral Scholar – Woods Hole Oceanographic Institution  
Supervisors: Jeff Seewald (WHOI) and John Pohlman (USGS)
- 2011 – 2017 Doctoral Research & Teaching Assistant – Texas A&M University at Galveston
- 2009 – 2011 Monitoring & Field Research Coordinator – BirdLife-International  
European Union funded nature conservation project; full-time job
- 2007 – 2009 Masters Research Assistant – Eötvös Loránd University
- 2008 – 2010 Volunteer Research Assistant – various projects at James Cook University (Australia), Macquarie University (Australia), and Eötvös Loránd University (Hungary); Assisting sample collections and molecular analyses
- 2006 – 2017 Professional Scuba Diving Instructor – consulting & teaching for multiple companies & educational institutions in five different countries; part-time

**PEER-REVIEWED PUBLICATIONS**

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- Brankovits, D.** & Pohlman, J.W. (2020). Methane oxidation dynamics in a karst subterranean estuary. *Geochimica et Cosmochimica Acta*. doi: [10.1016/j.gca.2020.03.007](https://doi.org/10.1016/j.gca.2020.03.007)
- Brankovits, D.**, Pohlman, J., Ganju, N.K., Iliffe, T., Lowell, N., Roth, E., Sylva, S., Emmert, J., Lapham, L. (2018) Hydrologic controls of methane dynamics in karst subterranean estuaries. *Global Biogeochemical Cycles* 32, 1759-1775. doi: [10.1029/2018GB006026](https://doi.org/10.1029/2018GB006026)
- Brankovits, D.**, Pohlman, J.W., Niemann, H., Leigh, M.B., Leewis, M.-C., Becker, K.W., Iliffe, T.M., Alvarez, F., Lehmann, M.F., Phillips, B. (2017). Methane- and dissolved organic carbon-fueled microbial loop supports a tropical subterranean estuary ecosystem. *Nature Communications* 8, 1835. doi: [10.1038/s41467-017-01776-x](https://doi.org/10.1038/s41467-017-01776-x)

Alvarez, F., Iliffe, T., Benitez, S., **Brankovits, D.**, Villalobos, J. L. (2015) New records of anchialine fauna from the Yucatan Peninsula, Mexico. *Biotaxa Check List*, 11(1), 1505. [doi: 10.15560/11.1.1505](https://doi.org/10.15560/11.1.1505)

**Brankovits, D.**, Halpern, B., Vidéki, R., Katona, K., Szövényi, G. (2010) Monitoring Hungarian Meadow Viper (*Vipera ursinii rakosiensis*) habitats in the Kiskunság, Hungary. *Allattani Közlemények* 95(2): 311–325. – *In Hungarian with English summary*

Sándor, I., Katona, K., Szövényi, G., Halpern, B., **Brankovits, D.**, Péchy, T. (2010) Daily activity of the Hungarian meadow viper (*Vipera ursinii rakosiensis*) under semi-natural conditions. *Animal Welfare, Ethology and Housing Systems* Vol. 6 Issue 1 (69-83) – *In Hungarian with English summary*

Katona, K., Halpern, B., Demes, T., Nyeste, M., **Brankovits, D.**, Sándor, I. (2007) Availability of rodents as prey and their burrows as hiding place in the habitats of the Hungarian Meadow Viper in the Kiskunság. *Rosalia (3): Studies on the Conservation of the Hungarian Meadow Viper* (186-194) – *In Hungarian with English summary*

#### Data Releases

**Brankovits, D.**, and Pohlman, J.W. (2020) Vertical chemical profiles collected across haloclines in the water column of the Ox Bel Ha cave network within the coastal aquifer of the Yucatan Peninsula in January 2015 and January 2016. U.S. Geological Survey data release. [doi: 10.5066/P9N4H6Y4](https://doi.org/10.5066/P9N4H6Y4)

**Brankovits, D.**, Pohlman, J.W., Mann, A.G., and Lapham, L.L. (2018) Temporal hydrologic and chemical records from the Ox Bel Ha cave network within the coastal aquifer of the Yucatan Peninsula, from January 2015 to January 2016. U.S. Geological Survey data release. [doi: 10.5066/P9U0KRVM](https://doi.org/10.5066/P9U0KRVM)

Pohlman, J.W. & **Brankovits, D.** (2017) Water column physical and chemical properties of Cenote Bang, a component of the Ox Bel Ha cave network within the subterranean estuary coastal aquifer of the Yucatan Peninsula, from December 2013 to January 2016: U.S. Geological Survey data release. [doi: 10.5066/F7DJ5DJW](https://doi.org/10.5066/F7DJ5DJW)

#### SCHOLARSHIPS

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2020 – present	Postdoctoral Fellow – Texas A&M University at Galveston
2017 – 2020	Postdoctoral Scholar – Woods Hole Oceanographic Institution & U.S. Geological Survey
2011 – 2012	Fulbright Scholar – Full support for an academic year in the USA

#### SELECTED FELLOWSHIPS & AWARDS

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2018	Rolex Explorers Club Award for field research (\$10,000)
2016	Deep Carbon Observatory: sponsored participant in summer school
2016	Cave Conservancy Foundation Fellowship (\$15,000)
2015	TAMUG “Boost” Dissertation Fellowship; full support for an academic year
2015	Research-in-Residence Program (\$4,450); NSF sponsored visiting student at Woods Hole Oceanographic Institution
2014	Cave Research Foundation’s Graduate Student Grant (\$3,000)

- 2014 Explorers Club’s Exploration Fund for graduate research (\$2,000)
- 2013 IsoCamp (\$2,400); NSF sponsored participant of the Stable Isotope Biogeochemistry and Ecology course at University of Utah
- 2013 Rufford Foundation Award (\$8,200); combined community work and scientific research in Mexico
- 2013 Ralph W. Stone Fellowship by U.S. National Speleological Society (\$2,000)
- 2008 Mappamondo Award to participate in a GIS course, Crotone, Italy (€1,000)

#### **PROPOSAL WRITING TO FEDERAL AGENCY PROGRAMS**

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- 1) Title: *Benthic ecology of foraminifera in karst subterranean estuaries: implications for the paleo-oxygen proxy toolbox and coastal ecosystem function*. 3-yr project. Program: NSF Biological Oceanography. Submitted by WHOI (PI J. Bernhard and Co-PI **D. Brankovits**) in Feb 2020 – *pending*
- 2) Title: *Collaborative Research: Microbial transformation of organic matter in karst subterranean estuaries and implications for anchialine food webs*. 3-yr project. Program: NSF DEB Ecosystem Cluster. Submitted by WHOI (PI **D. Brankovits**, Co-PI J. Seewald) and UAF (Co-PI M.B. Leigh). Declined in Dec 2019 – *revising for resubmission*
- 3) Title: *Collaborative Research: Investigating the source and flux of dissolved organic carbon from methane seeps to the deep-ocean*. 3-yr project. Program: NSF Chemical Oceanography. Submitted by CBL (PI L. Lapham) and WHOI (Co-PI J. Seewald and Senior Personnel **D. Brankovits**). Declined in Jan 2020 – *revising for resubmission in Aug 2020*
- 4) Title: *Nutrient transformations and flux from the karst subterranean estuary of the Upper Floridan aquifer: Implications for the development of harmful algal blooms along the West Florida Shelf*. U.S. Geological Survey internal proposal. PI J.W. Pohlman, co-PI **D. Brankovits**. Declined in Feb 2020 – *revising for resubmission in Oct 2020*

#### **TEACHING & MENTORING EXPERIENCE**

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*Classes taught as a Teaching Assistant at Texas A&M University at Galveston*

- 2016 Introduction to Biology (Fall semester)
- 2012 – 2015 Tropical Marine Ecology (Summer semesters)
- 2012 – 2015 Biospeleology – Cave Biology (Fall semesters)
- 2013 – 2015 Scientific Diving (Spring semesters)
- 2013 – 2015 Advanced Methods in Research Diving (Summer semesters)

#### *Mentoring*

- Ballou, L. (*In progress*) PhD Thesis: *Assessing the biogeographic distribution of anchialine cave fauna using Typhlatya (Crustacea: Atyidae) and Remipedia (Crustacea) as model taxa*. Texas A&M University at Galveston, Department of Marine Biology. Advisor: Tom Iliffe
- Dugan, J. (2019). MSc Thesis: *Caves in Subterranean Estuaries: Geological Distribution and Biogeochemical Significance*. [doi: 10.7910/DVN/VXPUK8](https://doi.org/10.7910/DVN/VXPUK8). University of Liverpool, School of Environmental Sciences. Advisor: Joshua Dean

**SELECTED CONFERENCE PRESENTATIONS**

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**Brankovits, D.**, Pohlman, J.W., Garnett, M., Dean, J. Modern methane and dissolved organic matter radiocarbon signatures suggest rapid transfer of organic carbon from a tropical forest to the underlying subterranean estuary ecosystem. EGU General Assembly. May. 3-8, 2020. TALK – *to be held virtually due to COVID-19 pandemic*

Ganju, N.K., **Brankovits, D.**, Pohlman, J., Suttels, S. Identifying drivers of vertical mixing in the subterranean estuary: a case study from the caves of the Yucatan. Physics of Estuaries and Coastal Seas Meeting, Galveston, TX, USA. Oct. 15-19, 2018. *Talk by lead author*

Emmert, J.A, **Brankovits, D.**, Ledford, C., Nuttals, M., Voss, J., Correa, A.M.S. Positive Benefits of Research and Monitoring Collaborations on Dive Programs. American Academy of Underwater Sciences Annual Symposium. Tahoe City, CA. Oct. 9-13, 2018. *Talk by lead a.*

Martínez, A. ... **Brankovits, D.**, *et al.* A new insight into the Stygofauna Mundi: assembling a global dataset for aquatic fauna in subterranean environments. 24<sup>th</sup> International Conference Subterranean Biology. University of Aveiro, Portugal. Aug 20-24, 2018. POSTER [doi: 10.3897/aca.1.e29514](https://doi.org/10.3897/aca.1.e29514)

**Brankovits, D.**, Pohlman, J.W., Ganju, N.K., Iliffe, T.M., Lowell, E., Lapham, L.L. Hydrologic controls of methane dynamics in a karst subterranean estuary. AGU Fall Meeting, New Orleans, LA, USA. Dec. 10-15, 2017. TALK

**Brankovits, D.**, Pohlman, J. W., Niemann, H., Leigh, M. B., Casso, M., Alvarez, F., Lehmann, F. M., Iliffe, T. Methane and Dissolved Organic Carbon Sustain an Ecosystem within a Density Stratified Coastal Aquifer of the Yucatan Peninsula, Mexico. Evidence for a Subterranean Microbial Loop? EGU General Assembly – Vienna, Austria. Apr. 17-22, 2016. TALK

**Brankovits, D.**, Pohlman, J. W., Lapham, L. L., Casso, M., Roth, E., Lowell, N., Iliffe, T. High-resolution Chemical and Hydrologic Records Identify Environmental Factors that Control Coastal Anchialine Cave Ecosystem Function. AGU Fall Meeting 2015 – San Francisco, CA, USA. Dec. 14-18, 2015. POSTER

Pohlman, J. W., Ruppel, C., Colwell, F., Krause, S., Treude, T., Graw, M., Casso, M., Boze, L., Buczkowski, B., **Brankovits, D.** Sediment and Water Column Geochemistry Related to Methane Seepage Along the Northern US Atlantic Margin. AGU Fall Meeting – San Francisco, CA, USA. Dec. 14-18, 2015. POSTER

**Brankovits, D.**, Pohlman, J. W., Niemann, H., Lehmann, F. M., Lapham, L. L., Casso, M., Roth, E., Lowell, N., Alvarez, F., Iliffe, T. Linking Water Chemistry Records to Ecosystem Function in an Anchialine Cave of the Yucatan Peninsula, Mexico. 3<sup>rd</sup> International Symposium on Anchialine Ecosystems – Merida, Mexico. Nov. 09-13, 2015. TALK *Best Student Talk Award*

**Brankovits, D.**, Pohlman, J. W., Niemann, H., Leigh, M. B., Lehmann, F. M., Iliffe, T. Evidence for a Methane-Fueled Ecosystem within Anchialine Caves of the Yucatan Peninsula, Mexico. AGU Fall Meeting 2014 – San Francisco, USA. Dec. 15-19, 2014. TALK

**Brankovits, D.**, Pohlman, J. W., Iliffe, T., Niemann, H., Leigh, M. B. A Biogeochemical Investigation of a Methane-dependent Anchialine Cave Ecosystem in the Yucatan Peninsula, Mexico. 10<sup>th</sup> Student Research Symposium Texas A&M University – in Galveston, USA. April, 23-24, 2014. POSTER *Best Poster Presentation Award*

*5 other conference presentations*

**INVITED TALKS**

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- University of South Florida, Tampa, FL, Best in Karst Event; keynote speaker. Karst and oceans: carbon cycling in tropical coastal carbonate aquifers. Apr. 10, 2020 – *postponed due to COVID-19 pandemic*
- University of Florida, Gainesville, FL, Seminar Talk. Karst and oceans: carbon cycling in tropical coastal carbonate aquifers. Apr. 07, 2020 – *postponed due to COVID-19 pandemic*
- ONSET Computer Corp., Bourne, MA, USA. Sensors in coastal cave networks flooded by the subterranean estuary. Oct. 16, 2019
- Woods Hole Oceanographic Institution, Summer Lecture Series. The dark side of the coastal carbon cycle: cave networks in karst subterranean estuaries. Jul. 3, 2019
- Harvard University, USA, Pete Girguis Lab Seminar Talk. Methane dynamics and ecosystem functioning in karst subterranean estuaries. May 14, 2019
- University of New England, ME, USA, Seminar Series. Carbon cycling and ecosystem dynamics in karst subterranean estuaries. Apr. 29, 2019
- Explorers Club 115<sup>th</sup> Annual Meeting, New York, USA. Life in Underwater Caves. Mar. 17, 2019
- Woods Hole Oceanographic Institution, COFDL Seminar Series. Hydrologic controls of carbon cycling in karst subterranean estuaries. Mar. 1, 2019
- Free University of Amsterdam (Vrije Universiteit), The Netherlands, seminar talk. Methane dynamics in karst subterranean estuaries. Apr. 30, 2018
- University of Bremen (MARUM), Germany, Kai-Uwe Hinrichs Lab Seminar Talk. Illuminating ecosystem dynamics in karst subterranean estuaries. Apr. 26, 2018
- Woods Hole Oceanographic Institution, MC&G Seminar Series. Carbon cycling and ecosystem dynamics in karst subterranean estuaries. Feb. 6, 2018
- U.S. Geological Survey, Woods Hole, USA, Center Talk. Bringing to light a methane-fueled ecosystem in coastal caves of the Mayan underworld. Jan. 9, 2018
- 3<sup>rd</sup> International Conference on the Biology of Decapods, Mexico City, Mexico, keynote speaker. Novel chemosynthetic pathway involving the freshwater shrimp *Typhlatya* (Decapoda: Atyidae). Oct. 19, 2017.

**PROFESSIONAL MEMBERSHIPS & SERVICE**

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- WHOI Postdoctoral Association, MC&G Representative & Vice President, 2019 – present
- WHOI International Committee, member, 2019 – present
- International Symposium on Anchialine Ecosystems, scientific committee member, 2018 – present
- American Geophysical Union (AGU), member, 2014 – present
- National Association of Underwater Instructors (NAUI), member, 2006 – present
- American Academy of Underwater Sciences (AAUS), member, 2012 – present
- Dive Control Board at Texas A&M University (invited member), 2014 – 2016

**PEER REVIEW CONTRIBUTIONS**

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Journals: *Geochimica et Cosmochimica Acta*, *Limnology and Oceanography*, *JGR Biogeosciences*, and *Continental Shelf Research*; Books: two book chapters; Funding agency: National Science Foundation (NSF) Biological Oceanography

**CONVENED CONFERENCE SESSIONS**

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4<sup>th</sup> International Symposium on Anchialine Ecosystems (ISAE), Lanzarote Spain. Oct. 01-05, 2018. Convener for: Biogeochemical Cycling in Anchialine Ecosystems

**OTHER SYNERGISTIC ACTIVITIES**

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Certified diving instructor since 2006. Scientific diving instructor between 2012 and 2016. Led or participated in more than 20 successful cave diving expeditions (in USA, Mexico, and multiple countries in Europe), including coastal cave systems in karst subterranean estuaries.

Supported research cruise with *R/V Sharp* in September 2016 (14 days) to study methane seepage in the U.S. Atlantic Margin. Supported other research efforts at remote locations (e.g., Lizard Island Research Station, Australia).

Contributed to the making of the award winning nature documentary “Budapest Inferno – The Secrets of the Molnar Janos Cave” (2017).

Organized and led multiple science outreach activities at local schools (e.g., Lawrence Middle School, Falmouth, MA) and other organizations (e.g., Harvard Natural History Museum, MA), including presentations for underrepresented groups in science (e.g., Moody Gardens Aquarium, Galveston, TX)

Provided interviews to several popular science magazines, including Discovery Channel Canada and National Geographic Hungary. Video by Seeker Magazine accessed >75,000 times. My research appeared in >40 news outlets, >100 tweets, and numerous blog posts by others.