

## ELIZABETH BORDA, PhD

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### EDUCATION

2007	Ph.D., Biology City University of New York Graduate School and University Center (CUNY)	2007
1998	B.S., Biology State University of New York at Stony Brook	1998

### APPOINTMENTS

2021 – Present	<i>Graduate Coordinator of Biology, Department of Life Sciences, Texas A&amp;M University San Antonio</i>
2018 – Present	<i>Assistant Professor, Department of Life Sciences, Texas A&amp;M University San Antonio</i>
2008 – Present	<i>Research Associate, Division of Invertebrate Zoology, American Museum of Natural History</i>
2017 – 2018	<i>Chair of Undergraduate Research, Texas A&amp;M University Galveston</i>
2016 – 2018	<i>CoPI and Program Coordinator, NSF REU-Ocean and Coastal Research Experiences for Undergraduates, Texas A&amp;M University Galveston</i>
2015 – 2018	<i>Lecturer, Department of Marine Biology, Texas A&amp;M University Galveston</i>
2011 – 2015	<i>Postdoctoral Research Associate, Department of Marine Biology, Texas A&amp;M University Galveston</i>
2007 – 2010	<i>National Science Foundation (NSF) Minority Postdoctoral Research Fellow Marine Biology Research Division, Scripps Institution of Oceanography (UCSD) &amp; Department of Biological Sciences, Auburn University</i>

### SELECT GRANTS, AWARDS AND HONORS

2021	[Submitted] Collaborative Proposal: Illuminating cave benthos in subterranean estuaries- biodiversity, ecology, and role in coastal ecosystem functioning. <i>National Science Foundation: Biological Oceanography</i> . Sub-award, coPI Borda. [PI: Bernhard (WHOI), CoPI: Brankovits (WHOI)]	\$317,152
2021	NSF Career Grant Proposal Submission – Evolution in the Mayan Underworld: diversity, evolution, and conservation of anchialine cave fauna of the Yucatan Peninsula, Mexico. Summer Faculty Research Fellowship. <i>Texas A&amp;M University San Antonio</i>	\$5,000
2020	Evolution in the Mayan Underworld: diversity, adaptation, and gene expression in <i>Typhlatya</i> cave shrimp of the Yucatan Peninsula, Mexico. Summer Faculty Research Grant. <i>Texas A&amp;M University San Antonio</i>	\$3,000
2020	Evolution in the Mayan Underworld: diversity, adaptation, and gene expression in <i>Typhlatya</i> cave shrimp of the Yucatan Peninsula, Mexico. Summer Faculty Research Fellowship. <i>Texas A&amp;M University San Antonio</i>	\$3,000
2019	Evolution in the Mayan Underworld: diversity, adaptation, and gene expression in <i>Typhlatya</i> cave shrimp of the Yucatan Peninsula, Mexico. <i>Texas A&amp;M University San Antonio Research Council Grant</i>	\$4,960
2016 – 2018	[Former coPI] Research Experiences for Undergraduates – <i>Ocean and Coastal Research Experiences for Undergraduates (OCEANUS)</i> . <i>National Science Foundation</i> [PI: Patrick Louchouart]	\$390,259
2015 – 2018	Aggies Commit to Excellence Scholarship (ACES). <i>Texas A&amp;M University Galveston Campus – Provost Office</i> [\$30,000 per academic year]	\$90,000
2015 – 2018	TAMUS Louis Stokes Alliance for Minority Participation – College Partner funding for TAMU-Galveston [~\$26,000 per academic year]	\$84,000
2007 – 2010	Minority Postdoctoral Research Fellowship – Systematics and mitochondrial genome evolution of Amphinomida (DBI-0706856). <i>National Science Foundation</i>	\$189,000

**PUBLICATIONS – IN REVIEW / PREPARATION (\*UNDERGRADUATE/<sup>+</sup>GRADUATE CO-AUTHOR)**

- In Prep. Ballou L<sup>+</sup>, Chavez-Solis E<sup>+</sup>, Brankovits D, Gonzalez B, Liu A\*, Rohret S\*, Salinas L\*, Simoes N, Alvarez F, Miglietta MP, Iliffe T and **Borda E**. Identity Crisis: A molecular re-evaluation of the shrimp genus *Typhlatya* within the Yucatan Peninsula. *Scientific Reports* [To be submitted August]
- In Review. Fernández-Lereéa CG\*, Ávila-García A<sup>+</sup>, Sánchez C, **Borda E**, López-Vivasa J, Huato-Soberanis L and Gómez-Gutiérrez J. Dynamic polychromy of *Zenopontonia soror* leads to mimicry of several sea star species in the Gulf de California. *Journal of Experimental Marine Biology and Ecology*
- In Review. Müller J<sup>+</sup>, Schumacher A, **Borda E**, Rouse GW, Bartolomaeus T and Tilic E. “Brittleworms”: Ultrastructure and arrangement of the calcified chaetae of *Euphrosine* (Amphinomida, Annelida). *Invertebrate Biology*
- In Prep. Yáñez-Rivera B, Salazar SI and **Borda E**. Revision of *Chloeia* Savigny in Lamarck, 1818 from tropical American Seas (Annelida Amphinomida).

**PUBLICATIONS – LAST FIVE YEARS (\*UNDERGRADUATE/<sup>+</sup>GRADUATE CO-AUTHOR)**

- In Press. [Book Chapter] Yáñez-Rivera B and **Borda E**. Amphinomidae Savigny 1818. In: Poliquetos (Annelida: Polychaeta) de México y América Tropical, con un adendum a los Clitelata, 2a Ed. de León-González JA, Bastida-Zavala JR, Carrera-Parra LF, García-Garza ME, Salazar-Vallejo SI, Solís-Weiss V and Tovar-Hernández MA (Eds.). Universidad Autónoma de Nuevo León, Monterrey, México
- In Press. [Book Chapter] Yáñez-Rivera B and **Borda E**. Euphrosinidae Williams, 1851. In: Poliquetos (Annelida: Polychaeta) de México y América Tropical, con un adendum a los Clitelata, 2a Ed. de León-González JA, Bastida-Zavala JR, Carrera-Parra LF, García-Garza ME, Salazar-Vallejo SI, Solís-Weiss V and Tovar-Hernández MA (Eds.). Universidad Autónoma de Nuevo León, Monterrey, México
2021. [Research Note] Stegenga BS, Jarboe A, Stevenson DJ and **Borda E**. Parasitism of the Two-toed *Amphiuma* (*Amphiuma means* Garden) by the macrobdellid leech *Macrobdella ditetra* Moore. *Southeastern Naturalist* 20 (1), N1
2020. Ávila-García A\*, Sánchez CA, **Borda E**, González-Acosta B, Huato-Soberanis L, and Gómez-Gutiérrez J. From five to one: *Sandyella* species (Palaemonidae) are distinct ontogenetic stages of a single species. *Zoologica Scripta* 49(4): 488-498
2019. Schulze A, Hipes J\*, Borda E and Rice ME. Who's who in sipunculans? Matching larvae and adults using DNA. *Smithsonian Contributions to Marine Science*. [Book Chapter]
2019. Siddall ME, Barkdull M\*, Tessler M<sup>+</sup>, Brugler MR, **Borda E**, and Hekkala E. Ideating iDNA: Lessons and limitations from leeches in legacy collections. *PLOS ONE*. 14 (2), e0212226
2018. Gonzalez BC<sup>+</sup>, Martinez A, **Borda E**, Iliffe TM, Fontaneto D and Worsaae K. Phylogeny and systematics of the Aphroditiformia based on total evidence. *Cladistics*. 34 (3), 225-259.
2017. Gonzalez BC<sup>+</sup>, Martinez A, **Borda E**, Iliffe TM, Fontaneto D and Worsaae K. Genetic spatial structure of an anchialine annelid indicates the presence of a crevicular spelean corridor within - but not between - islands of the Great Bahama Bank. *Molecular Phylogenetics and Evolution* 109, 259-270.
2016. Tessler M<sup>+</sup>, Barrio A, **Borda E**, Rood-Goldman R, Hill M and Siddall ME. Description of an extant soft-bodied invertebrate with microcomputed tomography and phylogenetic revision of duognathous terrestrial leeches (Haemadipsidae: *Chtonobdella*). *Zoological Scripta*. 45 (5), 552-565.

**COURSES TAUGHT**

Texas A&M University San Antonio

Department of Life Sciences

2021 - Present	<i>Graduate Scientific Scholarship (3 cr.)</i>	Fall
2018 – Present	<i>Evolution and Evolution Lab (4 cr.)</i>	Fall/Spring
2019 – 2021	<i>General Biology I (3 cr.)</i>	Fall/Spring
2019	<i>Jaguar Tracks IV (1 cr.)</i>	Spring
2018	<i>General Biology I Lab (1 cr.)</i>	Fall

Texas A&M University at Galveston

Department of Marine Biology

2016 – 2018	<i>Graduate Seminar in Marine Biology and Marine Sciences</i>	Fall/Spring
2015 – 2018	<i>Seminar in Marine Biology</i>	Fall/Spring
2014 – 2018	<i>Evolutionary Biology</i>	Fall
2014 – 2016	<i>Genetics Lab</i>	Fall/Spring
2013	<i>Genetics</i>	Spring/Fall

**MENTORSHIP**

**Graduate**

*Texas A&M University San Antonio*

2021 – Present. Grace Tindall. MS in Biology.

2021 – Present. Gabrielle Vaughn. MS in Biology.

*Texas A&M University Galveston*

2017 – Present. Fernando Calderon. PhD in Marine Biology. *Characterizing the ecosystem function and biodiversity in the anchialine caves of the Caribbean coast of the Yucatan Peninsula and marine caves of Belize*. Committee member and co-advisor

2016 – 2021. Lauren Ballou. PhD in Marine Biology. Phylogeny and Evolution of Typhlatya and Remipedia. Graduate Committee member and co-advisor. Defended, July 2021. Postdoc, Florida International University (Starting Fall 2021)

2019. Caroline Emery. MS in Marine Biology, 2019. *Marine Invertebrate Fossil Composition of Eight Major Sea Level Change Events in Texas during the Late Cretaceous Period and Their Potential as Risk Indicators for Anthropocene Sea Level Rise*. Committee member. Defended, March 2019

*Universidad Nacional Autónoma de México*

2019 – Present. Efrain Chavez-Solis. PhD in Biology (Environmental Sustainability). Ecology and Physiology of *Typhlatya* species. Collaborator/Mentor.

**Undergraduate**

*Texas A&M University San Antonio*

2021 – Present. Kimberly Torres. *Phylogeny and Illustrations of Archinominiinae from the IndoPacific*.

2020 – Present. Cody Campbell. *Transcriptomics of Cave Shrimp*.

2019 – 2021. Omar Carrillo. *Transcriptomics of Cave Shrimp*. BS in Biology, 2021. MS in Biology, University of Texas Rio Grande Valley (Starting Fall 2021)

2018 – 2021. Grace Tindall. *Phylogeny and Evolution of Cryptic Species, Eurythoe*. BS in Biology, 2021 MS in Biology, Texas A&M University San Antonio (Starting Fall 2021)

2019 – 2020. Nance Benavidez. *Transcriptomics of Cave Shrimp*. BS in Biology, 2021

2019 – 2020. Danielle Nunez. TAMUSA graduate, BS in Biology, 2020

2019. Erica Rios. TAMUSA graduate, BS in Biology, 2019

2019. Lina Caballero. TAMUSA graduate, BS in Biology, 2019

**STUDENT PRESENTATIONS (\*UNDERGRADUATE/<sup>+</sup>GRADUATE CO-AUTHOR)**

2021. Batts RE\*, **Borda E** and Kocot KM. Complete Mitochondrial Genome of Two Amphinomida (Annelida) Species. *Student Research Symposium, University of Alabama*

2020. Campbell C\*, Carrillo O\*, Benavidez-Ortiz N\* and **Borda E**. Comparative Transcriptomics of Anchialine Shrimp. *Earth Symposium, University of Texas San Antonio, Virtual*

2020. Carrillo O\*, Campbell C\*, Benavidez-Ortiz N\* and **Borda E**. Screening for Osmoregulatory Genes in Two Anchialine Cave Shrimp. *Earth Symposium, University of Texas San Antonio, Virtual*

2020. Tindall G\*, Yañez-Rivera Y, Johnson M, Schulze A, Rouse G and **Borda E**. Cryptic Species of the Cosmopolitan *Eurythoe*. *Earth Symposium, University of Texas San Antonio, Virtual*

2020. Benavidez-Ortiz N\*, Campbell C\*, Carrillo O\*, and **Borda E**. Comparative Transcriptomics of Anchialine Shrimp. *Annual Biomedical Research Conference for Minority Students, Virtual*

2020. Benavidez-Ortiz N\*, Campbell C\*, Carrillo O\*, and **Borda E**. Comparative Transcriptomics of Anchialine Shrimp. *Society for Advancement of Chicanos/Hispanics & Native Americans in Science, Virtual*. **\*Best Student Presentation Award\***

2018. Ballou L<sup>+</sup>, Brankovits D, Alvarez F, Iliffe T and **Borda E**. Phylogeny and Evolution of *Typhlatya* species within the Yucatan Peninsula. *4<sup>th</sup> International Symposium of Anchialine Ecosystems. Lanzarote, Canary Islands*

**INVITED TALKS**

- 2021 Texas A&M University – College Station, TX. Ecology and Evolution Graduate Seminar. *Identity Crisis in the Mayan Underworld: A Re-evaluation of Typhlatya Cave Shrimp.*
- 2019 Universidad Nacional Autónoma de México, Sisal – Yucatan, MX. 1st International Anchialine Ecosystems Workshop Merida, Mexico. *Into Darkness: Using Genetics to Illuminate Connectivity, Evolution and Hidden Diversity within Anchialine Caves of the Yucatan Peninsula.*
- 2019 Texas A&M University – San Antonio, TAMUSA Ten Year Anniversary Faculty Lecture Series – San Antonio, TX. *Cryptic Critters: Using genetic tools to uncover hidden diversity and evolution.*
- 2018 Texas A&M University – San Antonio, Department of Science and Mathematics – San Antonio, TX. *Lessons from Invertebrates: Evolution, Adaptations and Cryptic Species*

**SERVICE**

- 2020 – Present. Member, COAS Honors Committee
- 2019 – Present. Member, IACUC Committee
- 2018 – Present. Member, Academic Development Committee
- 2020 – 2021. Search committee member, Bioinformatics (Tenure-Track)
- 2020 – 2021. Search committee member, Microbiology (Tenure-Track)
- 2020 – 2021. Search committee member, Anatomy and Physiology (Instructional Track)
- 2018 – 2021. Faculty Mentor, TAMUSA Biology Club

**Journal Reviewer**

- 2020. Ecology
- 2020. Zoologica Scripta
- 2021. Parasitology
- 2021. Zootaxa