

# ELIZABETH BORDA

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Borda Lab Website: sites.google.com/site/lizborda

## EDUCATION

2007. Doctorate of Philosophy, Biology. City University of New York Graduate Center

1998. Bachelor of Science, Biology. State University of New York at Stony Brook

## APPOINTMENTS

*Texas A&M University –San Antonio, Department of Life Sciences*

2021–Present. Graduate Coordinator of Biology

2024–Present. Associate Professor (As of September 1, 2024)

2018–2024. Assistant Professor

*Texas A&M University at Galveston, Learning Commons*

2016–2018. Chair of Undergraduate Research

2016–2018. CoPI & Program Coordinator, NSF-REU: OCEANUS

*Texas A&M University at Galveston, Department of Marine Biology*

2015–2018. Lecturer

2011–2015. Postdoctoral Research Associate

*Scripps Institution of Oceanography (UCSD), Marine Biology Research Division*

2010–2011. Encyclopedia of Life Rubenstein Fellow

2009–2010. National Science Foundation Minority Postdoctoral Research Fellow

*Auburn University, Department of Biological Sciences*

2007–2009. National Science Foundation Minority Postdoctoral Research Fellow

*American Museum of Natural History, Division of Invertebrate Zoology*

2002–2007. NSF Partnerships for Enhancing Expertise in Taxonomy Graduate Student

2000–2002. Scientific Assistant

## TEACHING

### COURSES TAUGHT

*Texas A&M University San Antonio*

#### **Graduate**

2024 BIOL 5370: *Graduate Scientific Writing and Communication (3 cr.)* Spring

2021–Present BIOL 5310: *Graduate Scientific Scholarship (3 cr.) – Co-Instructor* Fall

2022 BIOL 5311: *Graduate Molecular Ecology (3 cr.)* Fall

2021 BIOL 5370: *Advanced Topics in Biology (3 cr.) – Co-Instructor* Fall

#### *Directed Studies*

2022 - Present BIOL 5306: *Thesis (3 cr.)* Fall/Spring

2021 - Present BIOL 5X01: *Independent Study (1-3 cr.)* Fall/Spring

## TEACHING

## COURSES TAUGHT

Texas A&M University San Antonio

**Undergraduate**

2018–Present	BIOL 3402: <i>Evolution and Evolution Lab (4 cr.)</i>	Fa/Sp/Su
2023	BIOL 4101: <i>Seminar – Integrative Biology (1 cr.)</i>	Fall
2020	BIOL 3401: <i>Invertebrate Zoology (4 cr.)</i>	Spring
2019–2021	BIOL 1306: <i>General Biology I (3 cr.)</i>	Fall/Spring
2019	STEM 1401: <i>Jaguar Tracks IV (1 cr.)</i>	Spring
2018	BIOL 1106: <i>General Biology I Lab (1 cr.)</i>	Fall

*Directed Studies*

2018–Present	BIOL 4104: <i>Research Experience in Biology (1 cr.)</i>	Fall/Spring
2018–Present	BIOL 4304: <i>Undergraduate Research in Biology (3 cr.)</i>	Fall/Spring

Texas A&M University at Galveston

2016–2018	MARB 681: <i>Graduate Seminar in Marine Biology (1 cr.)</i>	Fall/Spring
2015–2018	MARB 482: <i>Seminar in Marine Biology (1 cr.)</i>	Fall/Spring
2014–2018	MARB 466: <i>Evolutionary Biology (3 cr.)</i>	Fall
2014–2016	MARB 301: <i>Genetics Lab (1 cr.)</i>	Fall/Spring
2013	MARB 301: <i>Genetics (3 cr.)</i>	Spring/Fall

## WORKSHOPS

2018. *Facilitating Research*. National Research Mentoring Network. University of Wisconsin-Madison – Madison, WI.
2017. *20<sup>th</sup> Annual Teaching & Learning in Higher Education Wakonse South Conference*. “Activating Student Learning” – Burnet, TX.

## MENTORSHIP

**Postdoc / Early Career Investigator**

Texas A&M University San Antonio

2022–Present. Fernando Calderon Gutierrez. PhD in Marine Biology, Texas A&M University at Galveston (2022). Funded by NSF BIO-OCE: 2136322. Faculty Mentor/Collaborator/Co-Author.

*Universidad Nacional Autónoma de México – Sisal Campus (Sisal, Mexico)*

2019–Present. Efrain Chavez-Solis. PhD in Marine Biology, *Universidad Nacional Autónoma de México – Sisal Campus* (2022). Evolution, physiology and transcriptomics of *Typhlatya* shrimp. Collaborator / Co-Author.

*Universidad Autonoma de Baja California Sur (La Paz, Baja California, Mexico)*

2016–2023. Ariadna Avila. PhD in Marine Biology. *Genetic, morphological evaluation and ecology of symbiotic caridean shrimp of the Gulf of California, Mexico*. Collaborator/Co-Author.

*Minderoo-UWA Deep Sea Research Centre (Western Australia)*

2011–Present. Brett Gonzalez. PhD in Marine Biology, University of Copenhagen (2018). Phylogeny and evolution of anchialine cave invertebrates. Collaborator / Co-Author.

*Universidad Nacional Autónoma de México (Mazatlan, Mexico)*

## MENTORSHIP

### Graduate

#### *Texas A&M University San Antonio*

2024–Present. Bernard Mbithi. MS in Biology. Diversity and mitogenomics of *Chloeia* species from biodiversity hotspots.

2022–2024. Alejandro Nunez Cardenas. MS in Biology. *Structure and 3D modeling of mitochondrial genomes of Typhlatya shrimp species*. Committee Chair / Faculty Advisor. BS in Psychology, A&M–SA (2022).

2021–2024. Gabrielle Vaughn. MS in Biology. *Insights into subterranean connectivity within the aquifer of the Yucatán peninsula: population genetics and distribution of Typhlatya species*. Committee Chair / Faculty Advisor. BS in Biology, A&M–SA (2021)

2018–2023. Grace Tindall. MS in Biology. *Cryptic Species of Eurythoe*. Committee Chair / Faculty Advisor. BS in Biology, A&M–SA (2021)

#### *Woods Hole Oceanographic Institution (Woods Hole, MA)*

2022 – Present. Shari Rohret. PhD in Geology and Geophysics. Massachusetts Institute of Technology-Woods Hole Oceanographic Institution (MIT-WHOI) Joint Program. *Metabarcoding and diversity of benthic Foraminifera from karst subterranean estuaries*. Funded by NSF BIO-OCE: 2136322. Collaborator / Mentor.

#### *Texas A&M University Galveston*

2017–2022. Fernando Calderon Gutierrez. PhD in Marine Biology, Texas A&M University at Galveston (2022). *Metabarcoding and diversity of benthic Eukaryota from karst subterranean estuaries*. Committee member / Co-Advisor / Co-Author

2016–2021. Lauren Ballou. PhD in Marine Biology (2021). *Phylogeny and Evolution of Typhlatya and Remipedia*. Now: Assistant Professor, Berea College (Starting Fall 2023). Committee member / Co-Advisor / Co-Author.

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 (non-Thesis).

2011–2013. Joseph Ahrens. MS in Marine Biology, 2013. *Phylogeography and population genetics of the bearded fireworm, Hermodice carunculata (Amphinomidae)*. PhD in Molecular Biology, 2020. Co-Mentor / Co-Author.

#### *Universidad Autonoma de Baja California Sur (La Paz, Baja California Mexico)*

2015. Ramiro de Jesus Arcos Aguilar. Population genetics of the stag horned hermit crab (*Manucomplanus*) and the hydroid symbiont (*Janaria*) from the Gulf of California. MS in Marine Biology, Universidad Autonoma de Baja California Sur. Mentor.

### Undergraduate

#### *Texas A&M University–San Antonio*

##### *NSF LSAMP - Ciencia, Ingeniería, y Matemáticas Aliados (Alamo Colleges)*

2023–2024. Max Sahi. *Mitochondrial genome reconstruction of Remipedia*. Co-Mentor: Dr. Fernando Calderon-Gutierrez

##### *NSF Scholarships in STEM (A&M-SA)*

2022–Present. Muntadher Mashaan. *DNA Barcoding and invertebrate diversity at A&M-SA*.

2021–Present. Danielle Bragg. *Transcriptomics of Typhlatya*.

*Directed Studies (Undergraduate Research in Biology, Research Experiences in Biology)*

## MENTORSHIP

### Undergraduate

#### Texas A&M University–San Antonio

*Directed Studies (Undergraduate Research in Biology, Research Experiences in Biology)*

2023–Present. Valjean Romero. *Mitochondrial genomes of *Typhlaya shrimp* (Atyidae)*.

2023–Present. Sean Brandin. Documenting urban biodiversity via camera light traps in Espada Nature Park. Co-Mentors: Dr. Ashley Teufel, Dr. Jose Valdez Barillas.

2021–2023. Gabrielle Silva. *DNA Barcoding of aquatic invertebrate diversity of the San Antonio River*. Co-Mentor: Dr. Jose Valdez Barillas.

2020–2022. Cody Campbell. *Transcriptomics of Cave Shrimp*. BS in Biology, 2023.

2019–2021. Omar Carrillo. *Osmoregulation in Cave Shrimp*. BS in Biology, 2021, MS in Biology, University of Texas Rio Grande Valley, 2022.

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

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

#### Texas A&M University Galveston

*TAMUS Louis Stokes Alliance for Minority Participation (LSAMP)*

2018. Irene Martinez. *Transcriptomics of Fireworms*. LAUNCH Undergraduate Research Scholar, 18-19. BS in Marine Biology. 2019. Co-Mentor: Dr. Jessica Labonté (MARB).

In Progress: PhD in Biological Sciences, SUNY Binghamton University.

2017. Arianna Bartlett. *Transcriptomics of Fireworms*. LAUNCH Undergraduate Research Scholar. BS in Marine Biology, 2017. Co-Mentor: Dr. Jessica Labonté.

PhD in Genetics, Genomics, & Development, Cornell University (2018-2023).

2016. Arianna Bartlett. *Population genetics of deep-sea fishes from the Northern Atlantic and Gulf of Mexico*. Co-Mentor: Dr. Ron Eytan (MARB).

2017. Giovanni Madrigal. *Transcriptomics of Fireworms*. BS in Marine Biology, 2018. MS in Marine Biology, 2020. Co-Mentor: Dr. Jessica Labonté. In Progress: PhD in Computational Biology, University of Illinois Urbana-Champaign

2016–2017. Arthur Branch III. *Cryptic Species of *Typhlatya* cave shrimp from Yucatan cenotes*. Graduated, BS in Marine Biology, 2017.

2016. Aimee Cook. *Population genetics of deep-sea fishes from the Northern Atlantic and Gulf of Mexico*. BS in Marine Biology, 2016. Co-Mentor: Dr. Ron Eytan. In Progress: PhD in Marine Ecology, University of Hawaii, Manoa (Fall 2021).

2015. Adrian Gardner. *Population genetics of deep-sea fishes from the Northern Atlantic and Gulf of Mexico*. BS in Marine Biology, 2015. Co-Mentor: Dr. Ron Eytan.

*Aggies Commit to Excellence Scholar (ACES) & Undergraduate Research Scholar*

2015 – 2017. Kathryn Kunz. *Ecology and Evolution of *Manucomplanus varians* from the Gulf of California*. LAUNCH Undergraduate Research Scholar, 16-17. BS in Marine Biology, 2017. Co-Mentor: Dr. Maria Pia Miglietta

## MENTORSHIP

### Undergraduate

#### *Texas A&M University Galveston*

#### *NSF TAMUG Research Experiences for Undergraduates*

2012. Gabriela M. Ochoa. Phylogeny of Archinominae (Amphinomidae). BS in Marine Biology, 2012. Now: Program Coordinator, Roatan Marine Park, Honduras. Mentor/Co-Author

2011. Jacqueline Hipes (Louisiana State University); Molecular identification of sipunculan larva. Co-Mentor: Anja Schulze (MARB). Co-Mentor/Co-Author

#### *Other Undergraduate Mentorship*

2015–2016. Kaitlyn Hickman. Phylogeny of anchialine cave shrimp (*Typhlatya*) from Yucatan cenotes. BS in Marine Biology, 2016. Mentor.

#### *Other Undergraduate Mentorship*

2014–2015. Taliese Laverne. Population genetics of the stag-horned hermit crab from the GoC and the Pacific. BS in Marine Biology, 2015), Master of Maritime Business Administration and Logistics, 2018. Mentor.

2011. Andrew Nguyenba. High-Resolution Melting Analysis of *Eurythoe* (Amphinomidae). BS in Marine Biology, 2011. BS in Biomedical Engineering, University of Texas at Dallas, 2018. Now: MS in Systems Engineering (Fall 2021). Mentor.

## SCHOLARSHIP

### GRANTS, AWARDS AND HONORS

#### *Texas A&M University–San Antonio (Awarded since 2019: \$456,411)*

2024. [In Preparation]. Uncovering biodiversity and ecology of extreme ecosystems in southwestern Madagascar. <i>NSF: Population and Community Ecology</i> . Role: PI: Borda.	\$400,000
2024. [In Preparation]. PurSUIt: Revamping aquatic subterranean biodiversity inventories via integrative speleogenomics. <i>NSF: Systematics and Biodiversity Sciences</i> . Role: PI; coPI: Dr. Ashley Teufel.	\$1,182,329
2024. [Pending]. CAREER: Integrating morphology, -omics and cyber taxonomy to revamp biodiversity, systematics and evolutionary research of Amphinomidae (Annelida). <i>NSF: Systematics and Biodiversity Sciences</i> . Role: PI	\$1,296,359
2024–Present. Seed funds to establish the Scientific Diving Program. <i>A&amp;M SA Department of Natural Sciences, College of Arts and Sciences, Office of the Vice Provost for Research and Health Sciences and Office of the Provost</i>	\$31,750
2024–Present. Seed funds to establish the Scientific Diving Program. <i>Texas A&amp;M San Antonio Foundation</i> .	\$7,000
2024–Present. Diversity and mitogenomics of <i>Chloelia</i> species from biodiversity hotspots. <i>A&amp;M-SA Research Council Grant</i> . PI: Borda.	\$9,108
2024–Present. NSF BIO-OCE # 2136322. [Supplement]. <i>National Science Foundation: Biological Oceanography</i> . Role: PI (A&M-SA)	\$62,000
2022 – Present. NSF BIO-OCE # 2136322. Collaborative Proposal: Illuminating cave benthos in subterranean estuaries- biodiversity, ecology, and role in coastal ecosystem functioning. <i>National Science Foundation: Biological Oceanography</i> . Role: coPI. Lead PI: Joan Bernhard (WHOI), CoPI: David Brankovits (WHOI).	\$317,152 (A&M-SA) \$620,321 (WHOI)

## SCHOLARSHIP

## GRANTS, AWARDS AND HONORS

*Texas A&M University–San Antonio*

2024. Using artificial intelligence to enhance urban ecosystem studies in south San Antonio. PI: Teufel A; CoPIs: Valdez J, Borda E. <i>A&amp;M-SA COAS Grant Program</i>	\$9,995
2023. [Not Funded]. CAREER: Integrating morphology, -omics and cyber taxonomy to revamp biodiversity, systematics and evolutionary research of Amphinomidae (Annelida). <i>National Science Foundation: Systematics and Biodiversity Sciences</i> . Role: PI	\$1,217,720
2023. Career proposal submission to the NSF Division of Environmental Biology, Systematics and Biodiversity Sciences. Summer Fellowship for Research Grant Writing. <i>Texas A&amp;M University–San Antonio</i>	\$7,406
2023. Certificate of Research Excellence, Office of the Provost.	
2022. Excellence in Service Award. <i>Texas A&amp;M University San Antonio</i>	\$1,000
2022. [Not Funded] <i>College of Arts and Sciences College Grant</i> . Molecular Invertebrate Diversity in Motion, from Aquifers in Mexico to the Classroom.	\$9,815
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
2021. [Not Funded] <i>College of Arts and Sciences College Grant</i> . Cave MeioDiversity of the Yucatan Peninsula.	\$8,187
2020. Evolution in the Mayan Underworld: diversity, adaptation, and gene expression in <i>Typhlatya</i> cave shrimp of the Yucatan Peninsula, Mexico. College of Arts and Sciences 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. College of Arts and Sciences 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
<i>Texas A&amp;M University Galveston (Awarded since 2014: \$641,259)</i>	
2016–2018. [Former coPI] Research Experiences for Undergraduates – <i>Ocean and Coastal Research Experiences for Undergraduates (OCEANUS)</i> . [OCE–1560242]. <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. Texas A&M University System Louis Stokes Alliance for Minority Participation (TAMUS LSAMP) – College Partner funding for Galveston Campus [~\$26,000 per academic year]	\$84,000
2016–2017. Student Incentive Payment Program Marketing Strategy. <i>Department of Transportation – Maritime Administration</i> . [PI: Victor Viser]. CoPI.	\$72,000

## SCHOLARSHIP

## GRANTS, AWARDS AND HONORS

*Texas A&M University Galveston*

2014. Office of Academic Enhancement Faculty Fellow. <i>Texas A&amp;M University at Galveston</i>	\$5,000
<i>Postdoctoral Research Fellow (Awarded since 2008: \$230,240)</i>	
2007–2010. Minority Postdoctoral Research Fellowship – Systematics and mitochondrial genome evolution of Amphinomida. [DBI–0706856]. <i>National Science Foundation</i>	\$189,000
2010. Encyclopedia of Life Rubenstein Fellowship – EOL Annelida: Fireworms (Amphinomida) of the World, with species from the Deep Sea to the Sea of Cortez. <i>Encyclopedia of Life</i>	\$18,190
2010. Faculty Grants – Towards a molecular baseline for marine invertebrates of the Gulf of California: an assessment of biodiversity, evolution, and conservation. <i>University of California Institute for Mexico and the United States</i> [UCMEXUS; authored proposal; PI: Greg Rouse]	\$15,000
2009. Ernst Mayr Travel Grant – Photo-documentation and databasing of museum types of fireworms (Annelida: Amphinomida). <i>Harvard University</i>	\$1,000
2009. Training Award for New Investigators (TAWNI) – Deep-sea fireworms: morphological evaluation of the cosmopolitan <i>Archinome</i> , with descriptions and new records of amphinomids from cold seeps. <i>Census of Marine Life</i>	\$5,000
2008. Mini-PEET Award – Taxonomic Training in Amphinomida. <i>Society of Systematic Biologists</i>	\$2,050
<i>Graduate Student (Awarded since 2002: \$59,700)</i>	
2007. The Marie Stopes Student Travel Grant. The Willi Hennig Society	\$500
2006. CUNY Mario Capelloni Dissertation Fellowship	\$20,000
2003–2007. Marc Dresden Travel Grant. The American Society of Parasitologists	\$1,200
2002–2005. CUNY NSF–Alliance for Graduate Education and the Professoriate Award	\$20,000
2002–2004. CUNY Science Alliance Fellowship	\$18,000

## PUBLICATIONS [H-INDEX: 17, I10-INDEX: 20, CITATIONS: 1093, AS OF AUG. 2024]

- <sup>1</sup>Undergraduate; <sup>2</sup>Graduate; <sup>3</sup>Corresponding Author; <sup>4</sup>Senior Author, <sup>5</sup>Contributing Author, <sup>6</sup>Postdoc
1. *Accepted with minor revision.* <sup>3,6</sup>Calderón-Gutiérrez F, <sup>6</sup>Gonzalez B, Iliffe TM, Labonté J, Mejía-Ortiz LM and <sup>4</sup>**Borda E**. Cryptic species hidden in subterranean estuary ecosystems. *Proceedings of the Royal Society of London B: Biological Sciences*.
  2. *Accepted with minor revision.* Kudenov JD, Yanez-Rivera B, Barroso R and **Borda E**<sup>3,4</sup>. Amphinomidae. *Handbook of Zoology*. [Book Chapter]
  3. 2023. <sup>2</sup>Fernández-Lereé CG, Ávila-García A, Sánchez C, <sup>5</sup>**Borda E**, López-Vivas JM, Huato-Soberanis L, and Gómez-Gutiérrez J. *Zenopontonia soror* caridean shrimp exhibits dynamical mimicry with sea star host switching. *Journal of Experimental Marine Biology and Ecology*. 568 (2023) 151936.

## SCHOLARSHIP

PUBLICATIONS [H-INDEX: 17, I10-INDEX: 20, CITATIONS: 1093, AS OF AUG. 2024]

- <sup>1</sup>Undergraduate; <sup>2</sup>Graduate; <sup>3</sup>Corresponding Author; <sup>4</sup>Senior Author, <sup>5</sup>Contributing Author, <sup>6</sup>Postdoc
4. 2023. <sup>6</sup>Calderón Gutiérrez F, Iliffe TM, <sup>5</sup>**Borda E**, Yáñez G and Labonté J. Resilience of the karst subterranean estuary to precipitation impacts. *Ecology and Evolution*. 13(8): e10415.
  5. 2023. Ávila-García A, Sánchez C, Huato-Soberanis L, <sup>5</sup>**Borda E** and Gómez-Gutiérrez J. Continuous reproduction causes stable population structure of *Sandyella tricornuta* (Decapoda: Palaemonidae) epibiont of black coral. *Pacific Science* 76 (4), 397-410.
  4. 2022. <sup>2</sup>Ballou L, <sup>2</sup>Chavez-Solis E, <sup>6</sup>Brankovits D, Chavez Diaz, JM, <sup>6</sup>Gonzalez B, <sup>1</sup>Rohret S, <sup>1</sup>Salinas A, <sup>1</sup>Liu A, Simoes N, Alvarez F, Miglietta MP, Iliffe T and **Borda E**<sup>3,4</sup>. Identity Crisis: An integrative re-evaluation of the shrimp *Typhlatya* within the Yucatan Peninsula. *Scientific Reports* 12 (1), 5302.
  5. 2021. <sup>2</sup>Müller J, Schumacher A, <sup>5</sup>**Borda E**, Rouse GW, Bartolomaeus T and Tilic E. “Brittleworms”: Ultra-structure and arrangement of the calcified chaetae of *Euphrosine* (Amphinomida, Annelida). *Invertebrate Biology*. 140(4): e12353.
  6. 2021. [Research Note] Stegenga BS, Jarboe A, Stevenson DJ and <sup>4</sup>**Borda E**. Parasitism of the Two-toed *Amphiuma* (*Amphiuma means* Garden) by the macrobdellid leech *Macrobdella ditetra* Moore. *Southeastern Naturalist* 20 (1), N1.
  7. 2021. [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.
  8. 2021. [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.
  9. 2020. <sup>2</sup>Ávila-García A, Sánchez CA, <sup>5</sup>**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.
  10. 2019. [Book Chapter] Schulze A, <sup>1</sup>Hipes J, <sup>5</sup>**Borda E** and Rice ME. Who's who in sipunculans? Matching larvae and adults using DNA. *Smithsonian Contributions to Marine Science*.
  11. 2019. Siddall ME, <sup>1</sup>Barkdull M, <sup>2</sup>Tessler M, <sup>6</sup>Brugler MR, <sup>5</sup>**Borda E**, and Hekkala E. Ideating iDNA: Lessons and limitations from leeches in legacy collections. *PLOS ONE* 14 (2), e0212226.
  12. 2018. <sup>2</sup>Gonzalez BC, Martinez A, <sup>5</sup>**Borda E**, Iliffe TM, Fontaneto D and Worsaae K. Phylogeny and systematics of the Aphroditiformia based on total evidence. *Cladistics*. 34 (3), 225–259.
  13. 2017. <sup>2</sup>Gonzalez BC, Martinez A, <sup>5</sup>**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.



## SCHOLARSHIP

## PUBLICATIONS

- <sup>1</sup>Undergraduate; <sup>2</sup>Graduate; <sup>3</sup>Corresponding Author; <sup>4</sup>Senior Author, <sup>5</sup>Contributing Author, <sup>6</sup>Postdoc
14. 2016. <sup>2</sup>Tessler M, <sup>1</sup>Barrio A, <sup>5</sup>**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 (*Chtonobdella*). *Zoological Scripta*. 45 (5), 552–565.
  15. 2015. <sup>3</sup>**Borda E**, <sup>2</sup>Yáñez-Rivera B, <sup>1</sup>Ochoa GM, Kudenov JD, Sanchez-Ortiz C, Schulze A and Rouse G. Revamping Amphinomidae (Annelida: Amphinomida), with the inclusion of *Noto-pygos*. *Zoologica Scripta* 44 (3): 324–333.
  16. 2014. <sup>6</sup>Kot BW, Sears R, Zbinden D, <sup>5</sup>**Borda E** and Gordon MS. Rorqual whale (Balaenopteridae) surface lunge-feeding behaviors: standardized classification, repertoire diversity and evolutionary analysis. *Marine Mammal Science*. <https://doi.org/10.1111/mms.12115>  
**\*\*Cover Article\*\***
  17. 2014. **Borda E** and Kudenov JD. Euphrosinidae (Annelida: Amphinomida) collected from Antarctica by the *R/V Polarstern* in 1984 and 1986, with comments on the generic placement of *Euphrosine magellanica*. *Proceedings of the Biological Society of Washington* 126(4): 299–311.
  18. 2013. <sup>3</sup>**Borda E**, Kudenov JD, Blake JA, Chevaldonné P, Desbruyères D, Hourdez S, Fabri M-C, Pleijel F, Schulze A, Shank T, Wilson NG and Rouse GW. Cryptic species of *Archinome* (Annelida: Amphinomida) from vents and seeps. *Proceedings of the Royal Society of London B: Biological Sciences* 280(1770): 20131876.
  19. 2013. <sup>2</sup>Ahrens J, <sup>5</sup>**Borda E**, <sup>2</sup>Barroso R, <sup>1</sup>Campbell AM, <sup>2</sup>Wolf A, Nugues M, Paiva P, Rouse GW and Schulze A. The curious case of *Hermodice carunculata* (Annelida: Amphinomidae): evidence for genetic homogeneity throughout the Atlantic Ocean and associated basins. *Molecular Ecology* 22(8): 2280–2291. **\*\*Cover Article\*\***
  20. 2012. <sup>2</sup>Rocha R, <sup>5</sup>**Borda E**, Andreone F and Rosa GM. First reports of leech parasitism in Malagasy anurans. *Comparative Parasitology* 79(2): 352-356
  21. 2012. <sup>3</sup>**Borda E**, Kudenov JD, Beinhold C and Rouse GW. Towards a revised Amphinomidae (Annelida, Amphinomida): description and affinities of a new genus and species from the Nile Deep-sea Fan, Mediterranean Sea. *Zoologica Scripta*. 40(3): 307–325.
  22. 2011. [Book Chapter] **Borda E**. Hirudinida. Gerlach J (ed.) Crustacea, Platyhelminthes, Nematoda, Annelida, Rotifera and Tardigrada of the Seychelles islands. Siri Scientific Press, Manchester.
  23. 2011. <sup>3</sup>**Borda E** and Siddall ME. Insights into the evolutionary history of Indo-Pacific bloodfeeding terrestrial leeches (Hirudinida: Arhynchobdellida: Haemadipsidae). *Invertebrate Systematics* 24(5): 456–472. **\*\*Cover Article\*\***
  24. 2010. <sup>2</sup>Graham SP, <sup>5</sup>**Borda E** and <sup>1</sup>Connell MR. *Agkristrodon piscivorous* (Cottonmouth). Ectoparasite. *Herpetological Review*. 41 (1): 88. [Research Note]
  25. 2010. <sup>2</sup>Graham SP and **Borda E**. First report of leech parasitism in the amphibian family Sirenidae. *Comparative Parasitology* 77(1): 105–107. [Research Note]
  26. 2009. [Book Chapter] Halanych KM and **Borda E**. Developing models for lophotrochozoan and annelid biology. *Annelids in Modern Biology*. Shaine D (ed) John Wiley & Sons. Indianapolis, IN.
  27. 2008. <sup>3</sup>**Borda E**, Oceguera-Figueroa A, and Siddall ME. On the classification, evolution and biogeography of terrestrial haemadipsoid leeches (Hirudinida: Arhynchobdellida: Hirudiniformes). *Molecular Phylogenetics and Evolution*. 46(1): 142–154.

## SCHOLARSHIP

## PUBLICATIONS

- <sup>1</sup>Undergraduate; <sup>2</sup>Graduate; <sup>3</sup>Corresponding Author; <sup>4</sup>Senior Author, <sup>5</sup>Contributing Author, <sup>6</sup>Postdoc
28. 2006. [Book Chapter] Siddall ME, Bely AE and **Borda E**. Hirudinida. *Reproductive Biology and Phylogeny of Annelida*. Rouse G and Pleijel F (eds.) Enfield, NH.
  29. 2006. **Borda E**. A Revision of the Malagabdellinae (Arhynchobdellida: Domanibdellidae), with a description of a new species, *Malagabdella niarchosorum*, from Ranomafana National Park, Madagascar. *American Museum Novitates* 3531: 1–13.
  30. 2005. Siddall ME, <sup>1</sup>Budinoff RB and **Borda E**. Phylogenetic evaluation of systematics and biogeography of the leech family Glossiphoniidae. *Invertebrate Systematics*. 19(2): 105–112.
  31. 2004. [Book Chapter] Siddall ME, **Borda E** and Rouse GW. Towards a Tree of Life for the Annelida. *Assembling the Tree of Life*. Cracraft J and Donoghue M (eds.) Oxford University.
  32. 2004. **Borda E** and Siddall ME. Arhynchobdellida (Annelida: Oligochaeta: Hirudinida): phylogenetic relationships and evolution. *Molecular Phylogenetics and Evolution* 30: 213–225.
  33. 2004. Siddall ME and **Borda E**. Leech collections from Chile including two new species of *Helobdella*. *American Museum Novitates*. 3457: 1–18.
  34. 2004. **Borda E** and Siddall ME. Review of the evolution of life history strategies of the Hirudinida (Annelida: Oligochaeta). *Lauterbornia* 52: 5–25.
  35. 2003. Siddall ME and **Borda E**. Phylogeny of the leech genus *Helobdella* (Hirudinea: Glossiphoniidae) based on mitochondrial gene sequences and morphological data and a special consideration of the *triserialis* complex. *Zoologica Scripta* 32: 23–33

*Dissertation*

- 2007. Systematics and biodiversity of Arhynchobdellida (Oligochaeta: Hirudinida), with a focus on the evolutionary history of bloodfeeding terrestrial leeches. ADVISOR: Mark E. Siddall, American Museum of Natural History, City University of New York Graduate Center

## FIELDWORK ACTIVITIES

- |      |   |
|------|---|
| 2024 | MEXICO: Yucatan Peninsula, Quintana Roo, Cozumel Is. (Feb.; 2 wks)  |
| 2023 | MEXICO: Yucatan Peninsula, Quintana Roo, Cozumel Is. (Sep.; 1 wk)   |
| 2023 | MEXICO: Yucatan Peninsula, Yucatan, Sotuta (May; 1 wk)  |
| 2023 | MEXICO: Yucatan Peninsula, Quintana Roo, Cozumel Is. (Feb.; 2 wks)  |
| 2022 | MEXICO: Yucatan Peninsula, Quintana Roo, Cozumel Is. (Sep; 2 wks)   |
| 2019 | MEXICO: Yucatan Peninsula, Yucatan & Quintana Roo (Mar; 1 wk)   |
| 2012 | MEXICO: Gulf of California, Baja California Sur, La Paz – Los Cabos (Jul; 2 wks)  |
| 2011 | USA: Cape Hatteras – <i>NSF WormNet2 Research Cruise</i> (May; 1 wk)  |
| 2010 | INDONESIA: Bali, Sulawesi, Sumatra – <i>NSF Coral Triangle PIRE</i> (Jul/Aug; 5 wks)<br>COSTA RICA: Costa Rica Margin cold seeps; WHOI Atlantis 15-59 (Jan; 1 wk) |
| 2009 | MEXICO: Gulf of California – SIO-UABCS cruise (Jul; 3 wks)<br>PANAMA: Bocas del Toro <i>Smithsonian Tropical Research Institute</i> (Mar; 1 wk)                   |
| 2008 | MEXICO: Quintana Roo (May; 1 wk)  |
| 2006 | AUSTRALIA: New South Wales, Queensland, Northern Territory, (Apr; 3 wks)<br>THAILAND: Chiang Mai, Kachanburi, Prachinburi, Surat Thani (Sep/Oct; 5 weeks)         |

## SCHOLARSHIP

## FIELDWORK ACTIVITIES

- 2005 MALAYSIA: Kelantan (Sep; 1 week)  
CANADA: Ontario (June; 1 week)
- 2004 USA: Louisiana (Jul; 1 wk)  
FRANCE: Rennes (Jun; 1 wk)
- 2003 CANADA: Ontario (Jun; 1 wk)
- 2002 CANADA: Ontario (Jun; 1 wk)
- 2002 SEYCHELLES: Mahé, Silhouette (Mar; 1 wk)
- 2002 MADAGASCAR: Fianarantsoa, Fort Dauphin, Moramanga (Feb/Mar.; 4 wks)
- 2001 SOUTH AFRICA: Hoedspruit (Sep; 2 wks)
- 2001 CANADA: Ontario (Jun; 1 wk)
- 2001 CHILE: Chiloé, Los Lagos, Santiago, Valdivia (Feb; 3 wks)
- 1996 MADAGASCAR: Ranomafana National Park (Sep-Dec; 3 mths)

## INVITED TALKS

2024. The University of Texas at Tyler – Tyler, TX. *Spring 2024*.
2023. Texas Groundwater Invertebrate Forum, Virtual. *October 20, 2023*.
2023. University of Texas Rio Grande Valley - Edinburg, TX. *Diversity Patterns in Extreme Environments*.
2023. St. Mary's University – San Antonio, TX. *Diversity and Evolution in Extreme Environments*.
2022. Trinity University – San Antonio, TX. *Tales from the Mayan Underworld: invertebrate diversity and evolution within the aquifer of the Yucatan Peninsula (and Cozumel Island)*
2022. Louisiana State University – Baton Rouge, LA. *Diversity and Evolution in the Dark: an integrative evaluation of Typhlatya cave shrimp from the Yucatán Peninsula, Mexico*
2021. Texas Groundwater Invertebrate Forum, Virtual. *Integrative Systematics and Groundwater Evolution: A Case Study Using Typhlatya Shrimp (Atyidae) As A Model*.
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. 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*.
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*.
2018. Texas A&M University–San Antonio, Department of Science and Mathematics–San Antonio, TX. *Lessons from Invertebrates: Evolution, Adaptations and Cryptic Species*.
2015. St. Edwards University, Department of Biology – Austin, TX. *Unraveling invertebrate diversity and evolution*.
2013. Texas A&M University, First Annual Evolution Symposium – College Station, TX. *Cryptic species of Archinome (Annelida: Amphinomida) from vents and seeps*.
2013. Smithsonian Institution National Museum of Natural History, Department of Invertebrate Zoology – Washington, DC. *Unraveling annelid diversity from land to the deep sea*.
2012. Texas A&M University at Galveston, Department of Marine Biology – Galveston, TX. *Cryptic fireworms: deep divergences, old origins and overlooked diversity*.

## SCHOLARSHIP

## INVITED TALKS

2011. Texas A&M University, Department of Wildlife and Fisheries – College Station, TX. *From bloodsuckers to stinging fireworms: unraveling annelid biodiversity patterns from land to the deep sea.*
2010. Harvard University, Department of Organismic and Evolutionary Biology – Cambridge, MA. *Neglected Invertebrates: using integrative systematics to elucidate patterns in biodiversity from land to the deep sea.*
2010. University of California San Diego, Leech Fest – San Diego, CA. *On the amazing diversity of bloodsucking land leeches (Hirudinida: Arhynchobdellida: Haemadipsidae).*
2010. Scripps Institution of Oceanography, Marine Biology Research Division – La Jolla, CA. *Neglected Invertebrates: using integrative systematics to elucidate patterns in biodiversity from land to the deep sea.*
2009. Scripps Institution of Oceanography, Marine Biology Research Division – La Jolla, CA. *Biogeography and evolution of jungle leeches (Hirudinida: Arhynchobdellida: Haemadipsidae): the paradox of trans-oceanic dispersal of IndoPacific terrestrial annelids.*
2007. Smithsonian Institution National Museum of Natural History, Department of Invertebrate Zoology – Washington, DC. *Systematics and biodiversity of Arhynchobdellida (Oligochaeta: Hirudinida) with a focus on the evolutionary history of bloodfeeding terrestrial leeches.*
2005. Universidad de Buenos Aires, Departamento de Biodiversidad y Biología Experimental – Buenos Aires, Argentina. *Arhynchobdellida: phylogeny and evolution.*
2004. City University of New York Graduate School and University Center Minority Access/Graduate Networking in the Sciences, Technology, Engineering and Mathematics – New York, NY. *Diversity, phylogeny and evolution of arhynchobdellid leeches (Oligochaeta: Hirudinida).*

## CONTRIBUTED TALKS

2023. Southwestern Association of Naturalists – San Antonio, TX. *DNA barcoding reveals cryptic diversity hidden within the aquifers of the Yucatan Peninsula and Cozumel Island, Mexico.*
2022. 5<sup>th</sup> International Symposium on Anchialine Ecosystems – Hilo, HI. *DNA barcoding reveals cryptic diversity hidden within the aquifers of the Yucatan Peninsula and Cozumel Island, Mexico.*
2012. Annual Meeting, Society for Integrative and Comparative Biology – Charleston, SC. *Cryptic species of Archinome (Amphinomida) from hydrothermal vents and cold seeps.*
2010. The 10<sup>th</sup> International Polychaete Conference – Lecce, Italy. *Phylogenetic evaluation of the cosmopolitan hydrothermal vent amphinomid, Archinome rosacea (Aciculata: Amphinomida).*
2010. Hennig XXIX. – Honolulu, HI. *Fireworms from the chemosynthetic deep: a phylogenetic evaluation of the cosmopolitan Archinome rosacea.*
2009. The Society for Integrative and Comparative Biology – Boston, MA. *Mitochondrial genome evolution of Amphinomidae (Annelida: Amphinomida).*
2008. Evolution – Minneapolis, MN. *Biogeography and evolution of Haemadipsidae (Hirudinida: Arhynchobdellida: Hirudiniiformes): The paradox of transoceanic dispersion of Indo-Pacific terrestrial annelids.*
2008. The Society for Integrative and Comparative Biology – San Antonio, TX. *Systematics and diversity of Arhynchobdellida (Oligochaeta: Hirudinida), with a focus on the evolutionary history of bloodfeeding terrestrial leeches.*
2007. Hennig XXVI – New Orleans, LA. *Systematics and biogeography of IndoPacific bloodfeeding terrestrial leeches (Oligochaeta: Hirudinida: Arhynchobdellida).*

## SCHOLARSHIP

## CONTRIBUTED TALKS

2007. 82<sup>nd</sup> Annual Meeting of the American Society of Parasitologists – Merida, Mexico. *Systematics and biogeography of IndoPacific bloodfeeding terrestrial leeches (Hirudinida: Arhynchobdellida: Hirudiniformes)*.
2006. Evolution – Stony Brook, NY. *Systematics and Biogeography of bloodfeeding terrestrial leeches (Oligochaeta: Hirudinida: Arhynchobdellida)*
2004. Evolution – Ft. Collins, CO. *Diversity, phylogeny and evolution of arhynchobdellid leeches (Annelida: Oligochaeta: Hirudinida)*.
2004. First International Meeting on Evolution, Development and Neurobiology of the Leech – Ville-neuve d'Ascq, France. *Phylogeny of Arhynchobdellida (Annelida: Oligochaeta: Hirudinida) and the evolution of bloodfeeding and terrestrialism*.
2003. 78<sup>th</sup> Annual Meeting of the American Society of Parasitologists – Halifax, Nova Scotia. *Arhynchobdellida: diversity, phylogeny and evolution (Annelida: Oligochaeta: Hirudinida)*.
2003. Hennig XXII – New York, NY. *Phylogeny and evolution of the Arhynchobdellida (Annelida: Oligochaeta: Hirudinida)*.

## POSTDOC, GRADUATE &amp; UNDERGRADUATE PRESENTATIONS

<sup>1</sup>A&M-SA Undergraduate, <sup>2</sup>A&M-SA Graduate, <sup>3</sup>Undergraduate, <sup>4</sup>Graduate, <sup>5</sup>A&M-SA Postdoc

Texas A&M University–San Antonio

2024. <sup>5</sup>Calderón-Gutiérrez F, Iliffe TM, **Borda E**, German Y and J. Labonté. March 2024. [Oral]. *Response and resilience of karst subterranean estuary communities to precipitation impacts*. Ecological Integration Symposium. College Station, Texas, USA.
2024. <sup>1</sup>\*Bragg D and **Borda E**. Transcriptomics of *Typhlatya*. A&M-SA Student Research Symposium. **\*\*First Place in Undergraduate Research Oral Presentations\*\***
2024. <sup>2</sup>\*Mbithi B and **Borda E**. [Oral]. Biodiversity and mitogenomics of *Chloeia* species (Amphino-midae). A&M-SA 3-Minute Thesis Competition. **\*\*People's Choice Awardee\*\***
2024. <sup>2</sup>\*Vaughn, G and **Borda E**. [Oral]. *Insights into subterranean connectivity within the aquifer of the Yucatán Peninsula: population genetics and distribution of Typhlatya species*. A&M-SA 3-Minute Thesis Competition. San Antonio, Texas.
2024. <sup>2</sup>\*Vaughn, G, Ballou L, Brankovits D, Chavez-Solis C, <sup>5</sup>Calderón- Gutiérrez F, Iliffe TM, Simões N, and **Borda E**. [Oral]. *Insights into subterranean connectivity within the aquifer of the Yucatán Peninsula: population genetics and distribution of Typhlatya species*. A&M-SA Student Research Symposium.
2024. <sup>2</sup>\*Vaughn, G, Ballou L, Brankovits D, Chavez-Solis C, <sup>5</sup>Calderón- Gutiérrez F, Iliffe TM, Simões N, and **Borda E**. [Oral]. *Insights into subterranean connectivity within the aquifer of the Yucatán Peninsula: population genetics and distribution of Typhlatya species*. Ecological Integration Symposium. College Station, Texas.
2024. <sup>1</sup>\*Bragg D, <sup>1</sup>\*Mashaan M, <sup>5</sup>Calderón-Gutiérrez F and **Borda E**. March 2024. Poster presentation. Using genomic tools to enhance biodiversity assessments in karst subterranean estuaries. Ecological Integration Symposium. College Station, Texas, USA.
2023. <sup>5</sup>Calderón-Gutiérrez F, Iliffe TM, **Borda E**, German Y and Labonté J. Aug. [Oral]. *Response and resilience of karst subterranean estuary communities to precipitation impacts*. Southwestern Association of Naturalists. San Antonio, Texas.
2023. <sup>5</sup>Calderón-Gutiérrez F, <sup>1</sup>\*Sahi M, Teufel A and **Borda E**. [Oral]. *Response and resilience of karst subterranean estuary communities to precipitation impacts*. Southwestern Association of Naturalists. San Antonio, Texas.

\*Presenter

## SCHOLARSHIP

## POSTDOC, GRADUATE &amp; UNDERGRADUATE PRESENTATIONS

<sup>1</sup>A&M-SA Undergraduate, <sup>2</sup>A&M-SA Graduate, <sup>3</sup>Undergraduate, <sup>4</sup>Graduate, <sup>5</sup>A&M-SA Postdoc

Texas A&M University–San Antonio

2023. <sup>5</sup>Calderón-Gutiérrez F, <sup>1\*</sup>Sahi M, Teufel A and **Borda E**. [Poster]. *Response and resilience of karst subterranean estuary communities to precipitation impacts*. CIMA-LSAMP Poster Symposium. San Antonio, Texas.
2023. <sup>1</sup>Bragg D, Chavez-Solis E, <sup>1</sup>Campbell C, <sup>1</sup>Carrillo O, Mascaro M and **Borda E**. [Oral]. Presentation. *Transcriptomes and Aquifers: How do anchialine cave shrimp respond to salinity and environmental change?* Society for Integrative and Comparative Biology. Austin, TX.
2023. <sup>2</sup>Vaughn G, Ballou L, Brankovits D, Chavez-Solis E, <sup>5</sup>Calderón-Gutiérrez F, Iliffe TM, Simões N and **Borda E**. [Oral]. *Insights into subterranean connectivity within the aquifer karst subterranean estuaries of the Yucatán Peninsula: population genetics and distribution of Typhlatya species (Atyidae)*. Society for Integrative and Comparative Biology, Austin, TX.
2023. <sup>2</sup>Tindall G, Yañez-Rivera Y, <sup>3</sup>Johnson M, Schulze A, Rouse G and **Borda E**. [Oral]. *Cryptic Species of the Cosmopolitan Eurythoe*. Society for Integrative and Comparative Biology, Austin, TX.
2022. <sup>5</sup>Calderón Gutiérrez F, Iliffe TM, **Borda E** and Labonté J. [Oral]. *Three domains, two stories of community assemblages on anchialine caves* 5<sup>th</sup> International Symposium on Anchialine Ecosystems, Hilo, HI.
2022. <sup>1</sup>Bragg D, Chavez-Solis E, <sup>1</sup>Campbell C, <sup>1</sup>Carrillo O, Mascaro M and **Borda E**. [Oral]. *Transcriptomes and Aquifers: How do anchialine cave shrimp respond to salinity and environmental change?* 5<sup>th</sup> International Symposium on Anchialine Ecosystems – Hilo, HI.
2022. <sup>2</sup>Vaughn G, Ballou L, Brankovits D, Chavez-Solis E, <sup>5</sup>Calderón-Gutiérrez F, Iliffe TM, Simões N and **Borda E**. [Oral]. *Insights into subterranean connectivity within the aquifer karst subterranean estuaries of the Yucatán Peninsula: population genetics and distribution of Typhlatya species (Atyidae)*. 5<sup>th</sup> International Symposium on Anchialine Ecosystems, Hilo, HI.
2022. <sup>2</sup>Vaughn G, Ballou L, Brankovits D, Chavez-Solis E, <sup>5</sup>Calderón-Gutiérrez F, Iliffe TM, Simões N and **Borda E**. [Oral]. *Insights into subterranean connectivity within the aquifer karst subterranean estuaries of the Yucatán Peninsula: population genetics and distribution of Typhlatya species (Atyidae)*. A&M-SA Student Research Symposium **\*\*Best Student Presentation Awardee\*\***
2022. <sup>1</sup>Silva G, **Borda E** and Valdez JR [Oral]. *Species Diversity and Barcoding of Macroinvertebrate of the San Antonio River*. A&M-SA Student Research Symposium. **\*\*Best Student Presentation Awardee\*\***
2022. <sup>1</sup>Bragg D, <sup>1</sup>Campbell C, Chavez-Solis E, <sup>1</sup>Carrillo O, Mascaro M and **Borda E**. [Poster]. *Transcriptomes and Aquifers: How do anchialine cave shrimp respond to salinity and environmental change?* A&M-SA Student Research Symposium.
2022. <sup>1</sup>Tindall G, Yañez-Rivera Y, <sup>3</sup>Johnson M, Schulze A, Rouse G and **Borda E**. [Oral]. *Cryptic Species of the Cosmopolitan Eurythoe*. A&M-SA Student Research Symposium.
2022. <sup>2</sup>Vaughn G, Ballou L, Brankovits D, Chavez-Solis E, <sup>5</sup>Calderón-Gutiérrez F, Iliffe TM, Simões N and **Borda E**. [Poster]. *Insights into subterranean connectivity within the aquifer karst subterranean estuaries of the Yucatán Peninsula: population genetics and distribution of Typhlatya species (Atyidae)*. Texas A&M University System Pathways Symposium. College Station, TX.
2022. <sup>1</sup>Silva G, **Borda E** and Valdez JR. [Poster]. *Species Diversity and Barcoding of Macroinvertebrates of the San Antonio River*. Texas A&M University System Pathways Symposium. College Station, TX.

\*Presenter

## SCHOLARSHIP

## POSTDOC, GRADUATE &amp; UNDERGRADUATE PRESENTATIONS

<sup>1</sup>A&M-SA Undergraduate, <sup>2</sup>A&M-SA Graduate, <sup>3</sup>Undergraduate, <sup>4</sup>Graduate, <sup>5</sup>A&M-SA Postdoc

## Texas A&amp;M University–San Antonio

2022. <sup>1</sup>\*Bragg D, <sup>1</sup>Campbell C, Chavez-Solis E, <sup>1</sup>Carrillo O, Mascaro M and **Borda E**. [Poster]. Transcriptomes and Aquifers: How do anchialine cave shrimp respond to salinity and environmental change? Texas A&M University System Pathways Symposium. College Station, TX. \*Presenter
2022. <sup>1</sup>Tindall G, Yañez-Rivera Y, Johnson M, Schulze A, Rouse G and **Borda E**. [Poster]. Cryptic Species of the Cosmopolitan *Eurythoe*. Texas A&M University System Pathways Symposium. College Station, TX.
2020. <sup>1</sup>\*Carrillo O, <sup>1</sup>Campbell C, <sup>1</sup>Benavidez-Ortiz N and **Borda E**. [Oral]. Screening for Osmoregulatory Genes in Two Anchialine Cave Shrimp (Atyidae). Earth Symposium, University of Texas San Antonio, Virtual. \*Presenter
2020. <sup>1</sup>\*Campbell C, <sup>1</sup>Carrillo O, <sup>1</sup>Benavidez N and **Borda E**. [Poster]. Comparative Transcriptomics of Anchialine Shrimp (Atyidae). Earth Symposium – University of Texas San Antonio. \*Presenter
2020. <sup>1</sup>Tindall G, Yañez-Rivera Y, <sup>3</sup>Johnson M, Schulze A, Rouse G and **Borda E**. [Oral]. Cryptic Species of the Cosmopolitan *Eurythoe*. *Earth Symposium, University of Texas San Antonio, San Antonio, TX*
2020. <sup>1</sup>\*Benavidez-Ortiz N, <sup>1</sup>Campbell C, <sup>1</sup>Carrillo O, and **Borda E**. [Poster] Comparative Transcriptomics of Anchialine Shrimp (Atyidae). *Annual Biomedical Research Conference for Minority Students, Virtual*. \*Presenter
2020. <sup>1</sup>\*Benavidez-Ortiz N, <sup>1</sup>Campbell C, <sup>1</sup>Carrillo O, and **Borda E**. Comparative Transcriptomics of Anchialine Shrimp (Atyidae). *Society for Advancement of Chicanos/Hispanics & Native Americans in Science, Virtual*. \*Presenter \*\***Best Student Presentation Award**\*\*

## University of Alabama

2021. <sup>3</sup>Batts RE, **Borda E** and Kocot KM. [Poster] Complete mitochondrial genome of two Amphinomida (Annelida) species. University of Alabama Student Research Symposium – Tuscaloosa, AL.

## Texas A&amp;M University at Galveston

2018. <sup>3</sup>Martinez I, <sup>3</sup>Madrigal G, **Borda E** and Labonté J. Evolutionary transcriptomics of Amphinomida. *LAUNCH Summer Undergraduate Research Poster Session*, College Station, TX
2018. <sup>3</sup>Bartlett A, <sup>3</sup>Madrigal G, **Borda E** and Labonté J. Comparative transcriptomics of Amphinomida (Annelida). *TAMUG Student Research Symposium* – Galveston, TX
2017. <sup>3</sup>Madrigal G, Labonté J and **Borda E**. and Comparative transcriptomics of amphinomid fireworms and relatives. *LAUNCH Summer Undergraduate Research Poster Session* – College Station, TX
2017. <sup>3</sup>Bartlett A, <sup>4</sup>Weber M, **Borda E** and Eytan R. Population genetics of deep-sea fishes in the Gulf of Mexico & Bear Seamount. *TAMUG Student Research Symposium* – Galveston, TX
2017. <sup>3</sup>Bartlett A, <sup>4</sup>Weber M, **Borda E** and Eytan R. Population genetics of deep-sea fishes in the Gulf of Mexico & Bear Seamount. *TAMUS-LSAMP Research Symposium* – Texas A&M Prairie View
2017. <sup>3</sup>Branch A, <sup>4</sup>Brankovits D, Iliffe T, Miglietta MP and **Borda E**. Genetic Diversity and Evolution of Anchialine Cave Shrimp of the Yucatán Peninsula, Mexico. *TAMUG Student Research Symposium* – Galveston, TX

## SCHOLARSHIP

## POSTDOC, GRADUATE &amp; UNDERGRADUATE PRESENTATIONS

<sup>1</sup>A&M-SA Undergraduate, <sup>2</sup>A&M-SA Graduate, <sup>3</sup>Undergraduate, <sup>4</sup>Graduate, <sup>5</sup>A&M-SA Postdoc

Texas A&M University at Galveston

2017. <sup>3</sup>Branch A, <sup>4</sup>Brankovits D, Iliffe T, Miglietta MP and **Borda E**. Genetic Diversity and Evolution of Anchialine Cave Shrimp of the Yucatán Peninsula, Mexico. *TAMUS-LSAMP Research Symposium* – Texas A&M University Prairie View
2017. <sup>3</sup>Kunz K, <sup>4</sup>de Jesus Arcos Aguilar R, Sanchez-Ortiz C, **Borda E** and Miglietta MP. Evaluation of the Co-Evolution and Genetic Diversity of the Stag-Horned Hydrocoral and its Hermit Crab Host from the Pacific and Gulf of California. *TAMUG Student Research Symposium* – Galveston, TX
2016. <sup>3</sup>Cook A, **Borda E** and Eytan R. Long distance relationships: population genetics of deep-sea fishes. *TAMUG Student Research Symposium* – Galveston, TX
2016. <sup>3</sup>Cook A, **Borda E** and Eytan R. Long distance relationships: population genetics of deep-sea fishes. *LSAMP Symposium* – Texas A&M University Corpus Christi Corpus Christi, TX
2016. <sup>3</sup>Hickman K, <sup>4</sup>Brankovits D, Iliffe T, Miglietta MP and **Borda E**. Diversity, ecology and evolution of *Typhlatya* species (Atyidae) from anchialine caves of the Yucatan Peninsula, Mexico. *TAMUG Student Research Symposium* – Galveston, TX
2012. <sup>3</sup>Ochoa GM, **Borda E** and Schulze A. Expanding the phylogeny of Archinominae (Annelida: Amphinomida: Amphinomidae). *TAMUG NSF REU Research Symposium* - Galveston, TX
2012. <sup>3</sup>Johnson M, **Borda E** and Schulze A. *Eurythoe complanata*: more cryptic species in the Pacific? *TAMUG Student Research Symposium* – Galveston, TX **\*\*3<sup>rd</sup> Place Winner\*\*** (Marine Biology)
2012. <sup>3</sup>De Guzman H, **Borda E** and Schulze A. Genotypic diversity of sabellid worms from carbon dioxide vents. *TAMUG Student Research Symposium* – Galveston, TX
2012. <sup>3</sup>Gonzalez BC, **Borda E**, <sup>4</sup>Carvalho R, Schulze A. Polychaetes from the Mayan underworld: phylogeny, evolution, and cryptic diversity. The 2<sup>nd</sup> International Anchialine Symposium, Cavat, Croatia
2012. <sup>4</sup>Ahrens JB, **Borda E**, <sup>3</sup>Campbell AM and Schulze A. High degree of connectivity among amphi-Atlantic populations of *Hermodice carunculata* (Amphinomidae, Annelida). *TAMUG Student Research Symposium* – Galveston, TX
2012. <sup>3</sup>Nguyenba A, **Borda E**, Alvarado JR and Schulze A. Delineating cryptic species and populations of the cosmopolitan fireworm genus *Eurythoe* (Annelida: Amphinomidae) using High-Resolution Melting Analysis (HRMA). *Society for Integrative and Comparative Biology* – Charleston, SC
2012. <sup>4</sup>Ahrens JB, **Borda E**, Campbell AM and Schulze A. High degree of connectivity among amphi-Atlantic populations of *Hermodice carunculata* (Amphinomidae, Annelida). *2012 Annual Meeting, Society for Integrative and Comparative Biology* – Charleston, SC
2011. <sup>4</sup>Yáñez-Rivera B, Méndez N and **Borda E**. Oogénesis intra-ovárica en una especie de *Notoptygos* (Amphinomidae). *El Colegio de La Frontera Sur* – Chetumal, Mexico



## SCHOLARSHIP

### CERTIFICATIONS

2008. *American Association for Underwater Sciences Scientific Diver Training*, Scripps Institution of Oceanography – La Jolla, CA
2008. *Open Water Diver*. SCUBA Schools International, Adventure Sports Inc. – Auburn, AL
2008. *Specialty Diver – Stress and Rescue*. SCUBA Schools International, Adventure Sports Inc. – Auburn, AL
2008. *Specialty Diver – Enriched Air Nitrox*. SCUBA Schools International, Adventure Sports Inc. – Auburn, AL

### WORKSHOPS

2016. *IndoPacific Polychaete Workshop*. Natural History Museum – Paris, France.
2013. *Introduction to Bioinformatics and Transcriptomics*, Auburn University, Auburn, AL
2012. *Fall Marine Taxonomy Workshop: Introduction to the Polychaetes*, Florida Association of Benthologists – Tampa, FL
2009. *Workshop on Molecular Evolution*, Marine Biological Laboratory – Woods Hole, MA
1996. *University Development Linkage Project USAID Certificate*, Institute for the Conservation of Tropical Environments – Stony Brook, NY / Antananarivo, Madagascar

## SCHOLARSHIP AND SERVICE

### PROGRAMMATIC EXPERIENCE

#### *Texas A&M University – San Antonio*

2021–Present. *Master of Science in Biology Program*.

Management of MS Biology Program; Responsible for student recruitment, selection, admissions, encouraging faculty mentorship, Teaching Assistant awards; Assist and coordinate student business and academic transactions, including course enrollment, stipend and/or tuition scholarship payments, housing, etc. Number of Participants: 20

#### *Texas A&M University at Galveston*

2016–2018. *TAMU Undergraduate Research Ambassadors*.

Galveston Campus liaison for LAUNCH; Coordination of URS orientation, informational and thesis writing sessions and other programmatic activities as needed; Promote URS presentation participation in TAMUS sponsored research symposia. Number of participants: 3

2016–2018. *NSF-REU: Ocean and Coastal Research Experiences for Undergraduates*.

Program management of REU Site; Responsible for student recruitment, selection, faculty matching and mentorship; Assisted with and coordinated student business transactions, including student enrollment, stipend payment, housing and meals, travel, reimbursements, etc.; Coordination of student enrichment activities and workshops. Number of participants: 12

2016–2018. *TAMU Undergraduate Research Scholars (URS)*.

Galveston Campus liaison for TAMU LAUNCH; Coordination of URS orientation, informational and thesis writing sessions and other programmatic activities; Promote URS presentation participation in TAMUS sponsored research symposia. Number of participants: 34

2015–2018. *Texas A&M University System Louis Stokes Alliance for Minority Participation*

TAMUS LSAMP liaison for the Galveston Campus; Responsible for student recruitment, selection, faculty matches and mentorship; Promote participation in TAMUG and LSAMP sponsored research symposia. Number of Participants: 12

**SCHOLARSHIP AND SERVICE****PROGRAMMATIC EXPERIENCE**

2015–2018. *Aggies Commit to Excellence Scholars*

Initiated program and continuing program funding; Responsible for student recruitment, selection, faculty matches and mentorship; Promote presentation participation in TAMUG and LSAMP sponsored research symposia. Number of Participants: 28

**SERVICE**

*Texas A&M University–San Antonio*

*University*

2024–Present. Chair [pending appointment], Working Committee to establish the Dive Control Board – Office of Research Compliance

2023. Member, Search Committee – Dean of Graduate Studies

2023. Panel Member, Artificial Intelligence at A&M-SA

2022–Present. Vice Chair, IACUC Committee

2019–2022. Member, IACUC Committee

2018–2021. Member, Academic Development Committee

*College*

2020–2021. Member, College of Arts and Sciences Honors Committee

*Department/Program*

2023–Present. Faculty Mentor, NSF LSAMP – CIMA (Alamo Colleges)

2020–Present. Graduate Coordinator of Biology, Master of Science

2019–Present. Event Coordinator. Science Olympiad

2021–Present. Faculty Mentor, NSF Scholarships in STEM

2023 – 2024. Member, Search Committee – Cell and Developmental Biology (Tenure-Track)

2020–2021. Member, Search Committee – Bioinformatics (Tenure-Track)

2020–2021. Member, Search Committee – Microbiology (Tenure-Track)

2020–2021. Member, Search Committee – Anatomy and Physiology (Instructional Track)

2018–2021. Faculty Mentor, TAMUSA Biology Club

*San Antonio Community*

2022. Panel Member, Women in Science - MARC U\*STAR Program, St. Mary's University

*Texas A&M University at Galveston*

2016. Member, Search Committee – Career Counselor

2014–2016. Member, Committee on Climate and Inclusion

2014. Member, Diversity Steering Committee

**Proposal Reviewer**

2015. NSF Phylogenetic Systematics – External Reviewer

2014. NSF Doctoral Dissertation Improvement Grant (DDIG) Panel

2012. NSF Phylogenetics Systematics Panel

2011. Encyclopedia of Life Rubenstein Fellowships

**SERVICE**

***Journal Reviewer***

\*within the last five years

Acta Zoologica

Acta Zoologica Mexicana

American Museum Novitates

Aquatic Biology

Biological Journal of the Linnean Society

Ecology

Ecology and Evolution (2019)\*

Invertebrate Systematics (2021, 2023)\*

Journal of the Marine Biological Association  
of the United Kingdom (2021)\*

Journal of Parasitology

Marine Biodiversity Records

Marine Biology Research

Molecular Phylogenetics and Evolution

Ocean and Coastal Research (2023)\*

Parasitology (2020)\*

PLOS ONE

Revista Mexicana de Biodiversidad

Zoological Science

Zoologica Scripta (2019)\*

Zootaxa (2020)\*