

Curriculum Vitae

Paul Jon Bartels
Department of Biology
Warren Wilson College
Asheville, NC 28815

Last Updated 13-Mar-23

Education

- Ph.D., Biology, 1983, University of California at Santa Cruz
- M.Phil., Zoology, 1978, University of the West Indies in Jamaica
- B.S., Zoology, 1976, Southern Illinois University at Carbondale

Academic/Professional Appointments

- Part-time Professor, 2021-present
- Interim VP for Academic Affairs, 2019-2020
- Full-year Sabbatical, 1993-1994, 2010-2011, 2017-2018
- Interim Chair, Dept. of Biology, 2017
- Coordinator, Sustainability Across the Curriculum, 2007-2009
- Area Coordinator, Natural Sciences, 2007-2008
- Chair, Division of Natural Sciences and Math, 2005-2007, 2008-2010, 2010-2015
- Interim Assistant VPAA, 2004
- Program Director/Science Advisor, Environmental Leadership Center, 1997-2004
- Chair, Dept. of Biology, 1986-1992, 1996
- Professor of Environmental Studies, Warren Wilson College, 1986-2012
- Professor of Biology, Warren Wilson College, 1986-present
- Visiting Assistant Professor, University of Illinois, 1985-1986
- Visiting Lecturer, University of Illinois, 1984-1985

Courses Taught

Vertebrate Behavior, Sociobiology, General Biology, Vertebrate Zoology, Invertebrate Zoology, Entomology, Ornithology, Animal Behavior, Evolution, Human Biology (non-majors), Field Natural History (non-majors), Introduction to Environmental Studies, Interdisciplinary Land Use Decision Making, Coral Reef Conservation (for several international field courses in various locales), Fragile Oceans (First Year Seminar), Marine Biology Upper Division Seminar, Research Methods in Invertebrate Zoology

Refereed Publications (asterisks include WWC student co-authors)

Bartels, P.J. (1984). Extra-territorial movements of a perennially territorial damselfish, *Eupomacentrus dorsopunicans*. BEHAVIOUR 91:312-322.

- Bartels, P.J. (1985). Field observations of multiple mating in *Lasius alienus* (Hymenoptera: Formicidae). *AMERICAN MIDLAND NATURALIST* 113:190-192.
- Bartels, P.J. (1986). Sperm wars: a book review. *BIOSCIENCE* 36:687-688.
- Bartels, P.J. (1988). Reproductive caste inhibition in Argentine ants: new mechanisms of queen control. *INSECTES SOCIAUX* 35:70-81.
- Burley, N. & Bartels, P.J. (1990). Phenotypic similarities of sibling zebra finches. *ANIMAL BEHAVIOR*. 39:174-180.
- Bartels, P.J., Bruckner, A.W., Bruckner, R.J., & Williams, E.H., Jr. (1996). The cost of mutualism: cleaning symbiosis in Puerto Rican coral reef fish. *6TH SYMPOSIUM ON THE NATURAL HISTORY OF THE BAHAMAS*. 68-72.
- Bartels, P.J. (1998). Discovering the Bahamian Wilderness. *BAHAMAS JOURNAL OF SCIENCE*. 5(2):21-26.
- Williams, E.H., Jr., Bartels, P.J., & Bunkley-Williams, L. (1999). Predicted disappearance of coral reef cays: A direct result of marine major ecological disturbances. *GLOBAL CHANGE BIOLOGY*. 5:839-846.
- Bartels, P.J. & Nelson, D.R. (2006). A large-scale, multi-habitat inventory of the tardigrades in the Great Smoky Mountains National Park. *HYDROBIOLOGIA*. 558:111-118.
- *Stultz, J. & Bartels, P.J. (2006). Predicting ciguatera poisoning in Bahamian barracuda. *BAHAMAS JOURNAL OF SCIENCE*. 1(1):46-51.
- Bartels, P.J. and Nelson, D.R. (2007). An Evaluation of Species Richness Estimators for Tardigrades of the Great Smoky Mountains National Park, TN and NC, USA. *Proceedings of the Tenth International Symposium on Tardigrada*. *JOURNAL OF LIMNOLOGY* 66 (Suppl. 1): 104:110.
- Nelson, D.R. and Bartels, P.J. (2007). "Smoky Bears" —Tardigrades of the Great Smoky Mountains National Park. *SOUTHEASTERN NATURALIST* 6 (Special Issue 1):229-238.
- Bartels, P.J., Nelson, D.R., Kaczmarek, L., & Michalczyk, L. (2007). *Doryphoribius smokiensis*, a new species of Eutardigrada (Hypsibiidae) from the Great Smoky Mountains National Park, TN, USA (North America). *ZOOTAXA* 1646:59-65.
- Bartels, P.J., Nelson, D.R., Kaczmarek, L., & Michalczyk, L. (2008). Three new species and one new record of the genus *Doryphoribius* Pilato, 1969 (Tardigrada: Eutardigrada: Hypsibiidae) from the Great Smoky Mountains National Park (Tennessee, USA). *JOURNAL OF NATURAL HISTORY* 42:2595-2608.
- Bartels, P.J., Nelson, D.R., Pilato, G, & Lisi, O. (2009). The genus *Macrobotus* (Tardigrada: Eutardigrada: Macrobiotidae) from the Great Smoky Mountains National Park (Tennessee and North Carolina, USA), with a description of two new species. *ZOOTAXA* 2022: 45-57.
- *Bartels, P.J., Nelson, D.R., & Exline, R.P. (2011). Allometry and removal of body size effects in the analysis of tardigrades. *JOURNAL OF ZOOLOGICAL SYSTEMATICS AND EVOLUTIONARY RESEARCH* 49 (1):17-25.
- Bartels, P.J., Nelson, D.R., Kaczmarek, L., & Michalczyk, L. (2011). *Ramazzottius bellubellus*, a new species of Tardigrada (Eutardigrada: Hypsibiidae) from the Great Smoky Mountains National Park, NC, USA. *PROCEEDINGS OF THE BIOLOGICAL SOCIETY OF WASHINGTON* 124(1):23-27.
- Bartels, P.J. & Nelson, D.R. (2012). An Online Key and Field Guide to the Tardigrades of the Great Smoky Mountains National Park (North Carolina & Tennessee, USA, North America) with Taxonomic Revisions of Two Species. *ZOOTAXA* 3249:67-68.
http://keys.lucidcentral.org/keys/v3/smokey_bears/

- Nelson, D.R. & Bartels, P.J. (2013). Species richness of soil and leaf litter tardigrades in the Great Smoky Mountains National Park (North Carolina/Tennessee, USA). *JOURNAL OF LIMNOLOGY* 72(s1):144-151.
- Bertolani, R., Bartels, P.J., Giudetti, R., Cesari, M., and Nelson, D.R. (2014). Aquatic tardigrades in the Great Smoky Mountains National Park, North Carolina and Tennessee, U.S.A., with the description of a new species of *Thulinus* (Tardigrada, Isohypsibiidae). *ZOOTAXA* 3764(5):524-536.
- Bartels, P.J., Nelson, D.R., Kaczmarek, L., & Michalczyk, L. (2014). The genus *Milnesium* (Tardigrada: Eutardigrada: Milnesiidae) in the Great Smoky Mountains National Park (North Carolina and Tennessee, USA), with the description of *Milnesium bohleberi* sp. *ZOOTAXA* 3826:356-368.
- Bartels, P.J., Fontoura, P. & Nelson, D.R. (2015). New records of marine tardigrades from Moorea, French Polynesia, with the description of *Styraconyx turbinarium* sp. nov. (Arthrotardigrada, Halechiniscidae). *ZOOTAXA* 3955:389-402.
- Kaczmarek, L., Bartels, P.J., Roszkowska, M. & Nelson, D.R. (2015). The zoogeography of marine tardigrada. *ZOOTAXA* 4037:1-189.
- Bartels, P.J., Apodaca, J.J., Mora, C., & Nelson, D.R. (2016). A global biodiversity estimate of a little known taxon: Phylum Tardigrada. *ZOOLOGICAL JOURNAL OF THE LINNEAN SOCIETY*. 178:730-736.
- Roszkowska, M., Bartels, P.J., Goldyn, B., Ciobanu, D.A., Fontoura, P., Michalczyk, L, Nelson, D.R., Ostrowska, M., Moreno-Talamantes, A., & Kaczmarek, L. (2016). Is the gut content of *Milnesium* (Eutardigrada) related to buccal tube size? *ZOOLOGICAL JOURNAL OF THE LINNEAN SOCIETY* 178:794-803.
- *Bartels, P.J., Mormino, C., & Nelson, D.R. (2016). Aquatic tardigrades of North Carolina with a new North American record of a lotic tardigrade, *Dactylobiotus haplonyx* Maucci, 1980 (Eutardigrada: Macrobiotidae). *JOURNAL OF THE NORTH CAROLINA ACADEMY OF SCIENCE*. 132(1):26-30.
- *Bartels, P.J., Bradbury, L.J., & Nelson, D.R. (2017). Marine tardigrades from South Carolina, USA. *JOURNAL OF THE SOUTH CAROLINA ACADEMY OF SCIENCE* 15(1):43-48.
- Fontoura, P., Bartels, P.J., Hansen, J.G., & Kristensen, R.M. (2017). An illustrated dichotomous key to the genera of the marine heterotardigrades (Tardigrada). *ZOOTAXA*. 4292(1):1-45.
- Smith, F.W., Bartels, P.J. & Goldstein, Bob (2017). A hypothesis for the composition of the tardigrade brain and its implications for panarthropod brain evolution. *INTEGRATIVE AND COMPARATIVE BIOLOGY* :1-14.
- Kaczmarek, L., Gawlak, M., Bartels, P.J., Nelson, D.R. & Roszkowska, M. (2017). A revision of the genus *Paramacrobiotus* Guidetti et al., 2009 with the description of new species, re-descriptions, and a key. *ANNALES ZOOLOGICI* 67(4):627-656.
- Santos, E., Rubal, M., Veiga, P, Bartels, P.J., da Rocha, C.M.C., & Fontoura, P. (2018). On the distribution of *Batillipes tubernatis* Pollock 1971 (Arthrotardigrada: Batillipedidae) in the Atlantic Basin. *MARINE BIODIVERSITY* <https://doi.org/10.1007/s12526-017-0834-9>
- Santos, E., Gomes, Jr., E., P.J., da Rocha, C.M.C., Bartels, P., & Fontoura, P. (2018). A closer look at *Batillipes dicrocercus* and new records of *Batillipes potiguarensis* (Tardigrada: Arthrotardigrada) from the Brazillian coast with comments on intra- and interspecific variability. *IHERINGIA SERIE ZOOLOGIA*. 108:32018041.

- Marley, N. J., Kaczmarek, Ł., Gawlak, M., Bartels, P. J., Nelson, D. R., Roszkowska, M., ... Degma, P. (2018). A clarification for the subgenera of *Paramacrobotus* Guidetti, Schill, Bertolani, Dandekar and Wolf, 2009, with respect to the International Code of Zoological Nomenclature. *Zootaxa*, 4407(1), 130. <https://doi.org/10.11646/zootaxa.4407.1.9>
- Bartels, P.J., Fontoura, P., & Nelson, D.R. (2018). Marine tardigrades of the Bahamas with the description of two new species and updated keys to the species of *Anisonyches* and *Archechiniscus*. *ZOOTAXA* 4420:43-70.
- Kaczmarek, L., Bartels, P., Roszkowska, M. (2018). First records of marine tardigrades (Arthrotardigrada) from Fuerteventura, Canary Islands, Spain). *AFRICAN ZOOLOGY* 53(2):75-81.
- Nelson, D.R., Bartels, P.J., & Guil, N. (2018). Ch 7. Tardigrade ecology. In: *The biology of tardigades*, ed. Ralph Schill. Springer Nature Switzerland.
- Nelson, D.R., & Bartels, P.J. & Fegley, S.R. (2019). Environmental correlates of tardigrade community structure in mosses and lichens in the Great Smoky Mountains National Park (Tennessee and North Carolina, USA). *THE ZOOLOGICAL JOURNAL OF THE LINNEAN SOCIETY* 20:1-12.
- Santos, E., Rubal, M., Veiga, P, Bartels, P.J., da Rocha, C.M.C., & Fontoura, P. (2019). *Batillipes pennaki* Marcus, 1946 (Arthrotardigrada: Batillipedidae): deciphering a species complex. *ZOOTAXA* 4648(3):549-567.
- Bartels, P.J., Fontaneto, D., Roszkowska, M., Nelson, D.R., & Kaczmarek, L. (2020). Latitudinal gradients in body size in marine tardigrades. *ZOOLOGICAL JOURNAL OF THE LINNEAN SOCIETY* 188(3):820-838. <https://doi.org/10.1093/zoolinnea/zl080>
- Bartels, P.J. & Nelson, D.R. (2020). Do marine sponges host epizoic tardigrades? *CARIBBEAN JOURNAL OF SCIENCE* 50(1):54-59. <https://doi.org/10.18475/cjos.v50i1.a8>
- Gąsiorek, P., Oczkowski, A., Blagden, B., Kristensen, R. M., Bartels, P. J., Nelson, D. R., Suzuki, A. C., & Michalczyk, Ł. (2021). New Asian and Nearctic Hypechiniscus species (Heterotardigrada: Echiniscidae) signalize a pseudocryptic horn of plenty. *ZOOLOGICAL JOURNAL OF THE LINNEAN SOCIETY* XX:1-59. <https://doi.org/10.1093/zoolinnea/zlaa110>
- Bartels, P.J., Fontoura, P., Nelson, D.R., Orozco-Cubero, S., Mioduchowska, M., Gawlak, M., Kaczmarek, L., & Cortez, J. (2021). A trans-isthmus survey of marine tardigrades from Costa Rica, Central America with descriptions of seven new species. *MARINE BIOLOGY RESEARCH* <https://doi.org/10.1080/17451000.2021.1901936>
- Stec, D., Vecchi, M., Dudziak, M., Bartels, P. Calhim, S., & Michalczyk, L. (2021). Integrative taxonomy resolves the species identities within the *Macrobotus pallarii* complex (Tardigrada: Eutardigrada: Macrobiotidae). *ZOOLOGICAL LETTERS* 7:9 <https://doi.org/10.1186/s40851-021-00176-w>
- Bartels, P.J., Nelson, D.R., & Kaczmarek, L. (2021). An updated species list for “Smoky Bears” -- Tardigrades of the Great Smoky Mountains National Park, USA. *ZOOTAXA* 4980:256-268. <https://doi.org/10.11646/zootaxa.4980.2.2>
- *Bartels, P.J., Coffey, D.C., Pineau, M., Kaczmarek, L., & Nelson, D.R. (accepted ms). An exploration of autofluorescence in tardigrades (Phylum Tardigrada). *ZOOLOGICAL JOURNAL OF THE LINNEAN SOCIETY*.

Un-Refereed Publications

- Bartels, P.J. (1996). Fragile reefs: handle with care. CRUISING WORLD (January):31-33.
- Kalinowski, F.A., Huie, J.C., Bartels, P.J., & Rossell, C.R., Jr. (1997). Creating the environmental campus: lessons from Warren Wilson College. Proceedings of the Greening of Campus II, Ball State University.
- Bartels, P.J. (2001). Have you seen this creature? ATBI Quarterly 2(2):1.
http://www.discoverlifeinamerica.org/atbi/quarterly_newsletter/pdfs/spring_2001.pdf
- Bartels, P.J. (2005). Little Known Water bears? ATBI Quarterly 6(2):4.
http://www.discoverlifeinamerica.org/atbi/quarterly_newsletter/pdfs/spring_2005.pdf
- Bartels, P.J. (2012). No Small Feat: Crossing the Gulf Stream in a Pocket Cruiser. BLUEWATER CRUISING, July 2012
- Bartels PJ, Kaczmarek L, Roszkowska M, Nelson, DR 2015 Interactive map of marine tardigrades of the world. Available online at
<https://fusiontables.google.com/DataSource?docid=1nw0Nct7GW7M-geDHq91fycBM1jUymCzNEaUqjF6g&pli=1-map:id=3>. Accessed on 12 Aug 2017.

Forthcoming Refereed Publications

- Bartels, P.J., Fontoura, P., & Nelson, D.R. (in prep). A comparison of intertidal and subtidal marine tardigrades from the British Virgin Islands. ZOOTAXA

Selected Presentations & Workshops

- "GLOBE Program." Developed and ran workshops for high school teachers training for GLOBE program in Asheville, NC. 1999
- "Putting a Thaw on Global Warming." Invited presentation. Appalachian State University, Univ. of Tennessee, UNC Chapel Hill, UNCA, 2001
- "Tardigrade Inventory Status." All-Taxa Biodiversity Annual Conference. Gatlinburg, TN 2002-2009
- "A Large-scale Multi-Habitat Inventory of Tardigrades in the Great Smoky Mountain National Park." 9th International Symposium on Tardigrada, Pensacola, FL 2004.
- "Estimating Biodiversity in Cryptic Microorganisms." Western Carolina University, 2006
- "A Computer-Based Multichotomous Key to the Tardigrades of the Great Smoky Mountains National Park." 10th International Symposium on Tardigrada, Catania, Sicily, 2006.
- "An Evaluation of Species Richness Estimators for Tardigrades." 10th International Symposium on Tardigrada, Catania, Sicily, 2006.
- "An Ecological Analysis of Soil Tardigrades in the Great Smoky Mountains National Park." 10th International Symposium on Tardigrada, Catania, Sicily, 2006.
- "Smoky Bears: Tardigrades of the Great Smoky Mountains National Park." with Diane Nelson, 2008 Association of Southeastern Biologists.

“Tardigrade Named after Mr. Robert Martin of Martin Microscopes.” with Diane Nelson, 2009 Association of Southeastern Biologists. (poster presentation).

“Biodiversity of Microscopic Organisms in the Great Smoky Mountains National Park.” Teacher workshops at Tremont Institute, Great Smoky Mountains National Park, 2004-2009.

“Allometry and the Removal of Body Size Effects in the Morphometric Analysis of Tardigrades.” 11th International Symposium on Tardigrades, Tübingen, Germany, 2009.

“The All Taxa Biodiversity Inventory and the Phylum Tardigrada.” Winthrop University, invited lecture, 2010

“Tardigrades: The Final Chapter,” invited speaker. All-Taxa Biodiversity Annual Conference, Gatlinburg, TN, 2010.

“Biodiversity of Microscopic Organisms in the Great Smoky Mountains National Park.” Workshop at All-Taxa Biodiversity Annual Conference, Gatlinburg, TN, 2010.

“The Genus *Milnesium* in the Great Smoky Mountains National Park and the Rise of Endemism.” All-Taxa Biodiversity Annual Conference, Gatlinburg, TN, 2012.

“2012 Update on the Large-Scale Multihabitat Inventory of Tardigrades in the Great Smoky Mountains National Park.” With Diane Nelson. 12th International Symposium on Tardigrades, Porto, Portugal, 2012

“The Distribution and Diversity of Soil Tardigrades in the Great Smoky Mountains National Park Using Maxent Modelling.” 12th International Symposium on Tardigrades, Porto, Portugal, 2012.

“The Magic in Water: Invisible Multitudes, Infinite Ignorance.” Keynote address, North Carolina Science Teachers Association Annual Meeting. Raleigh, NC, 2012.

“Charismatic Microfauna: Big Questions about Little Tardigrades.” Magnarella Family Faculty Scholarship Award Presentation. Warren Wilson College, 2013.

“Local and global voices in negotiating conservation efforts: a case study in Raja Ampat, Indonesia.” Southern Sociological Society, Charlotte, NC, 2014. S. Kusujarti & P. Bartels.

“How Many Tardigrades Are There on Land and in the Sea?” 13th International Symposium on Tardigrades, Modena, Italy, 2015. (oral presentation plus co-author on three posters)

“The Big Tardigrade Party.” Invited Speaker: Asheville Science Tavern, WCQS, Asheville, 2015.

“Meiofauna and Water Bears.” Workshop for Artspace Charter School’s after school science club, Asheville, 2016.

“Meiofauna and Water Bears.” Workshop for high school interns in Asheville Greenworks inner-city program, WWC, Asheville, 2016.

“Tardigrade Biodiversity.” Workshop and invited presentation for Bioblitz at Reinhardt University, Waleska, GA., 2016.

“Tardigrade Biology and Workshop.” Presentation and workshop for Guild of Natural Science Illustrators. Warren Wilson College, Asheville, 2017.

“The Biology of Tardigrades.” Invited talk for the Biology Department’s STEM speaker series, Asheville-Buncombe Technical College, Asheville, 2017.

“Why Water Bears: From Cute to Crucial.” Keynote speaker and workshop leader for Science in the South, Illinois Science Teachers Association Annual Meeting, Southern Illinois University, Carbondale, IL, 2017.

“Meiofauna: What, How, and Why.” CIMAR (marine institute), University of Costa Rica, 2018. Part of Fulbright Specialist Fellowship.

“Tardigrades: My 18-year Obsession with Charismatic Microfauna.” CIMAR, University of Costa Rica, 2018. Part of Fulbright Specialist Fellowship.

“Meiofauna/Marine Tardigrade Workshop.” CIMAR, University of Costa Rica, 2018. Part of Fulbright Specialist Fellowship.

“Of Water Bears & Fulbrights”. Warren Wilson College, Sabbatical Soiree, 2019.

“From Mountains to the Sea: The Wonderful World of Water Bears”. Science at Sugarlands, Invited Zoom Presentation. Discover Life in America, 2021

“A Microscopic Safari”. Led Hands-on workshop for adult learners for Conservation Exchange. WWC, January 2023.

“Marine Tardigrades: A Personal Journey of Discovery”. Invited Zoom Presentation for The Tardigrade Story-250th Anniversary Online Series”. Organizer: Dr. Ralph O. Schill, University of Stuttgart, Germany, April 2023.

“Tardigrades at Purchase Knob”. Workshop for K-12 teachers at Appalachians Highlands Science Learning Center, Purchase Knob, Great Smoky Mountains National Park. May 2023.

Awards and Grants

1972-1976, Zoology Honor Society; President's Scholar; graduated with honors
from Southern Illinois University

1979-1981, Secured NIH Biomedical Support Grants at the University of CA at Santa Cruz

1989, Secured Weisenblatt grant, Southern Regional Educational Board research grant, Burroughs-Wellcome research grant

1992, Awarded sabbatical for 1992-1993

1993, Awarded Research Fellowship from Appalachian College Association for 1992-1993
sabbatical

1993, Secured Burroughs-Wellcome Research Grant
1994, Secured Burroughs-Wellcome Research Grant
1998, Secured Eisenhower Grant for GLOBE franchise
1999, Secured Burroughs-Wellcome Grant for Environmental Science Summer Camp
2003, Secured Community Foundation of Western North Carolina grant for “Mapping Change in Buncombe County”
2004, Secured USFW grant for GIS index of development impacts on water quality of WNC
2001-2008, Secured Discover Life in America Grants for Inventory of Tardigrades in the Great Smoky Mountains National Park
2007, Secured North Carolina Biotechnology Center Grant to develop photomicroscopy center at Warren Wilson College
2007, Outstanding Scientist of the Year for Biodiversity Education, Discover Life in America
2009, Secured North Carolina Biotechnology Center Grant to host NC Academy of Science Meetings at WWC
2009, Co-authored successful Cargill Foundation Grant Proposal for Environmental Studies Department
2010, Awarded sabbatical for 2010-11
2010, Awarded Research Fellowship from Appalachian College Association for 2010-2011 sabbatical
2013, Magnarella Family Faculty Scholarship Award recipient
2015, Secured Wingate Grant allocation from Art Department for collaborative effort to upgrade the Microscopy Lab with a drawing tablet
2016, Secured Pugh Grant for upgrading microscopy facility
2016, Awarded sabbatical for 2017-18
2016, Awarded Research Fellowship from Appalachian College Association for 2017-2018 sabbatical
2018, Awarded Fulbright Specialist Fellowship to work with scientists at CIMAR, the marine institute of the University of Costa Rica
2022, Pugh Grant for upgrading microscopy facility for epifluorescence
2023, Pugh Grant for field collecting at Georgetown, SC

Professional Affiliations

Group Member North Carolina Biodiversity Project
All-Taxa Biodiversity Inventory, Great Smoky Mountains National Park, research scientist
BIOMAR, Guanacaste Conservation Area, Costa Rica, research scientist
Association of Southeastern Biologists
North Carolina Academy of Science
Sigma Xi, vice president of University of North Carolina - Asheville Chapter, 2014-2016
International Symposium for Tardigrada consultant