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## DAVID PAUL GILLIKIN, PH.D.

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Department of Geology  
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### EDUCATION

- 2006 Courses in Secondary Education, State University of New York at New Paltz, USA  
2005 PhD Sciences, Free University of Brussels (VUB), Belgium  
*Dissertation:* Geochemistry of Marine Bivalve Shells:  
the potential for paleoenvironmental reconstruction. [Advisor: F. Dehairs]  
2000 M.Sc. Ecological Marine Management, Free University of Brussels (VUB), Belgium  
*Dissertation:* Factors controlling the distribution of Kenyan brachyuran mangrove crabs:  
Salinity tolerance and ecophysiology of two Kenyan *Neosarmatium* species.  
1998 M.Sc. 1<sup>st</sup> year Human Ecology, equivalent to Ecotechnie, UNESCO/ Cousteau European  
Postgraduate Programme, (VUB), Belgium  
1994 B.Sc. Environmental Geology, State University of New York at New Paltz, USA

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### BRIEF STATEMENT OF RESEARCH INTERESTS

My research focus involves the validation of bivalve shell geochemistry as a proxy of environmental and climate change. My interests are broad and have included biogeochemistry and ecophysiology. I have a specific interest in bridging disciplines, including the chemical, biological and geological sciences. My current projects include marine bivalve shell geochemistry, freshwater mussel shell geochemistry, speleothem geochemistry, lake core records, aquatic (freshwater, estuarine, and marine) biogeochemistry, and chemical dendrochronology.

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### APPOINTMENTS

- 2018- UNION COLLEGE: Professor of Geology  
2017- UNION COLLEGE: Director of Environmental Science, Policy, & Engineering Program  
2015-2018 UNION COLLEGE: Associate Professor of Geology  
2015- Associate Editor: Scientific Reports (Impact Factor = 5.1; published by Nature).  
2014- Associate Editor: PLOS One (Impact Factor = 3.7)  
2013-2019 Associate Editor: Biogeosciences (Impact Factor = 3.8; published by the European Geosciences Union).  
2013- Director, Union College Stable Isotope Laboratory; <http://minerva.union.edu/gillikid/lab.htm>  
2012-2016 UNIVERSITY OF ALABAMA, Graduate Faculty  
2011 EUROPEAN INSTITUTE FOR MARINE STUDIES (IUEM), Brest (France): Visiting Researcher.  
2010-2015 UNION COLLEGE: Assistant Professor of Geology.  
2010-2013 VASSAR COLLEGE: Research Associate.  
2006-2010 VASSAR COLLEGE: Visiting Assistant Professor.  
2006 STATE UNIVERSITY OF NEW YORK, COLLEGE AT NEW PALTZ: Full-time Adjunct Faculty.  
2005-2017 VRIJE UNIVERSITEIT BRUSSEL, (Belgium): Research Associate.  
2005 ROYAL MUSEUM OF NATURAL SCIENCES, Brussels, Belgium: continuation of CALMARs  
Research project: EV/03/04B: Post Doctoral researcher.  
2001-05 BELGIAN FEDERAL OFFICE FOR SCIENTIFIC: PhD researcher: EV/36/04.

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## PROFESSIONAL RECOGNITION

2018 Elected Fellow of Geological Society of America

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## GRANTS & SCHOLARSHIPS

- 2018 US National Science Foundation, P2C2, *Collaborative research: Bridging the gap from northern Iberia to northwest Africa to reconstruct atmospheric dynamics and hydroclimate for the last 2,500 years* (co-PI, \$64,684; 2018-2021).
- 2018 US National Science Foundation, Antarctic Earth Sciences, *Collaborative Research: The Antarctic Scallop as Key to Paleoenvironments and Sea Ice Conditions: Understanding the Modern to Predict the Past* (co-PI, \$37,144; 2018-2020).
- 2017 US National Science Foundation, Major Research Instrumentation (NSF-MRI), *Acquisition of an Inductively Coupled Plasma Mass Spectrometer for Expansion of Analytical Activities and Research Training in the Earth Sciences* (co-PI, \$307,241; 2017-2020).
- 2015 US National Science Foundation, P2C2, *Award Supplement for Public Outreach Activities: Collaborative Research: RUI: Deep Drilling of Lake Junin, Peru: Continuous Tropical Records of Glaciation, Climate Change and Magnetic Field Variations Spanning the Late Quaternary*. (co-PI, \$146,585, 2014-2018).
- 2014 Keck Geology Consortium, *Holocene climatic change and active tectonics in the Peruvian Andes: impacts on glaciers and lakes* (co-PI, \$23,150, 2014-15).
- 2013 Flemish Science Foundation (FWO), *Reconstructing the biogeochemistry in tropical aquatic ecosystems using elemental and stable isotope tracers in freshwater bivalve shells* (co-PI, \$500,000; 2014-18).
- 2012 US National Science Foundation, Major Research Instrumentation (NSF-MRI): *Acquisition of a Stable Isotope Ratio Mass Spectrometer for Interdisciplinary Research and Undergraduate Research Training* (PI, \$325,000; 2012-2014).
- 2011 Keck Geology Consortium, *Biogeochemical carbon cycling in fluvial systems from bivalve shell geochemistry - using the modern to understand the past* (PI, \$40,000, 2012-13).
- 2011 Research Corporation for Science Advancement, Single-Investigator Cottrell College Science Award. *Developing archives of aquatic chemistry from freshwater mussel shell geochemistry: Stable isotopes, trace elements, and biomineralization* (PI, \$48,523; 2011-13).
- 2011 National Geographic Society Committee for Research and Exploration, *Past biogeochemistry of remote African rivers recorded in freshwater mussel shells* (PI, \$20,000; 2011-12).
- 2008 Mellon Foundation, *Freshwater bivalves as archives of past environmental and climatic conditions* (PI, \$23,200; 2008-2009).
- 2008 US National Science Foundation, Major Research Instrumentation (NSF-MRI): *Acquisition of major instrumentation for watershed biogeochemistry research* (Co-P.I., \$116,552).
- 2008 Collins Faculty Research Fund, *Response of mangrove communities to earthquakes and tsunamis, Simeulue Island, Indonesia* (Co-P.I., \$6,000).
- 2007 Collins Faculty Research Fund, *Temperate coastal marsh channels and mosquito control ditches: potentially a large source of atmospheric CO<sub>2</sub>* (P.I., internal grant of \$6,993).
- 2007 EPA Hudson River Estuary Program grant, *Partnering scientists, policymakers, and the public toward the creation of a management plan for the Casperkill watershed, Dutchess County, New York* (Co-P.I., \$20,000).
- 2006 Collins Faculty Research Fund, *The use of freshwater bivalve shells (Unionidae) as monitors of Casperkill stream conditions* (P.I., internal grant of \$4,804).
- 2006 European Science Foundation EuroCLIMATE Programme *Development, calibration and application of independent salinity proxies - PaleoSalt* (Associated researcher).

- 2005 Belgian Federal Office for Scientific, Technical and Cultural Affairs: *Calcareous marine skeletons as recorders of global climate changes* - CALMARS II (Associated researcher).
- 2002-2005 Onderzoeksraad (VUB research committee). Scholarships for travel to international conferences and for research in Kenya.
- 2001 Sigma Xi, Grants in Aid of Research.
- 1999, 2002 Vlaamse Interuniversitaire Raad (V.L.I.R.): Travel Scholarships for travel to Kenya
- 2001-2005 Belgian Federal Office for Scientific, Technical and Cultural Affairs: Doctoral research scholarship.

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## PEER REVIEWED PUBLICATIONS

(students: §undergrad, \*graduate; reprints at <http://minerva.union.edu/gillikid>)

- Submitted **Gillikin, D.P.**, A.D. Wanamaker, C.F.T. Andrus. Chemical Sclerochronology. *Chemical Geology*
- Submitted Couturier, L.I.E., F. Sardenne, F. Rouspard, **D.P. Gillikin**, A. Barthes, A. Lorrain. Lipid correction of carbon and nitrogen stable isotope values in muscle tissue of three tuna species: the need for region-specific adjustments. *Limnology and Oceanography: Methods*
- In revision \*Kornecki, K.M., M. Schuller M.E. Katz, R.A. Relyea, F.M.G. McCarthy, M.F. Schaller, **D.P. Gillikin**, J.C. Stager, C.W. Boylen, L. Eichler, S. Nierzwicki-Bauer. The canary in the coal mine: Testate amoebae record anthropogenic impacts in oligotrophic Lake George, NY sediments. *Journal of Foraminiferal Research*
- 2019 Vansteenberge, S., Verheyden, S., Genty, D., Blamart, D., Goderis, S., Van Malderen, J.M., Vanhaecke, F., Hodel, F., **Gillikin, D.P.**, Ek, C., Quinif, Y., Cheng, C., Edwards, R.L., and Claeys, P. Characterizing the Eemian-Weichselian transition in northwestern Europe with three multiproxy speleothem archives from the Belgian Han-sur-Lesse and Remouchamps cave systems. *Quaternary Science Reviews* 208:21-37.
- 2019 Cheng, L., Normandeau, C., Bowden, R., Doucett, R., Gallagher, B., **Gillikin, D.P.**, Kumamoto, Y., McKay, J.L., Middlestead, P., Ninnemann, U., Nothaft, D., O. Dubinina, E., Quay, P., Reverdin, G., Shirai K., Tore Mørkved, P., Theiling, B. P., van Geldern, R., Wallace, D. W. R. An international inter-comparison of stable carbon isotope composition measurements of dissolved inorganic carbon in seawater. *Limnology and Oceanography: Methods* 17: 200-209. doi: 10.1002/lom3.10300
- 2019 Debret, B., E. Albers, B. Walter, R. Price, J. Barnes, H. Beunon, S. Facq, **D.P. Gillikin**, N. Mattielli, H. Williams. Shallow forearc mantle dynamics and geochemistry: new insights from the IODP expedition 366. *Lithos* 326-327: 230-245 doi: 10.1016/j.lithos.2018.10.038
- 2018 \*Geeza, T., **D. P. Gillikin**, B. McDevitt, K. Van Sice, N.R. Warner. Accumulation of Marcellus Formation oil and gas wastewater metals in freshwater mussel shells. *Environmental Science & Technology* 52 (18), 10883-10892. doi: 10.1021/acs.est.8b02727
- 2019 \*Kelemen, Z., **D.P. Gillikin**, S. Bouillon. Relationship between river water chemistry and shell chemistry of two tropical African freshwater bivalve species. *Chemical Geology*
- 2019 Goodwin, D.H. **D.P. Gillikin**, §R. Banker, G.T. Watters, D.L. Dettman, C.S. Romanek. Reconstructing intra-annual growth of freshwater mussels using oxygen isotopes. *Chemical Geology*
- 2019 Wanamaker, A.D. **D. P. Gillikin**. Strontium, magnesium, and barium uptake in aragonitic shells of *Arctica islandica*: insights from a temperature controlled experiment. *Chemical Geology*

- 2019 \*Geeza, T., **D. P. Gillikin**, Goodwin, D.H., §S. Evans, G.T. Watters, N.R. Warner. Controls on magnesium, manganese, strontium, and barium concentrations recorded in freshwater mussel shells from Ohio. *Chemical Geology*; doi: 10.1016/j.chemgeo.2018.01.001
- 2018 Granath, G., H. Rydin, J. L. Baltzer, F. Bengtsson, N. Boncek, L. Bragazza, Z.-J. Bu, S. J. M. Caporn, E. Dorrepaal, O. Galanina, M. Gałka, A. Ganeva, **D. P. Gillikin**, I. Goia, N. Goncharova, M. Hájek, A. Haraguchi, L. I. Harris, E. Humphreys, M. Jiroušek, K. Kajukało, E. Karofeld, N. G. Koronatova, N. P. Kosykh, M. Lamentowicz, E. Lapshina, J. Limpens, M. Linkosalmi, J.-Z. Ma, M. Mauritz, T. M. Munir, S. Natali, R. Natcheva, M. Noskova, R. J. Payne, K. Pilkington, S. Robinson, B. J. M. Robroek, L. Rochefort, D. Singer, H. K. Stenøien, E.-S. Tuittila, K. Vellak, A. Verheyden, J. M. Waddington, and S. K. Rice. Environmental and taxonomic controls of carbon and oxygen stable isotope composition in Sphagnum across broad climatic and geographic ranges. *Biogeosciences* 15, 5189-5202; doi: 10.5194/bg-15-5189-2018
- 2018 \*Nehme C., S. Verheyden, S.F.M. Breitenbach, **D. P. Gillikin**, A. Verheyden, H. Cheng, L. Edwards, J. Hellstrom, S. Noble, A. Farrant, D. Sahy, T. Goovaerts, G. Salen, and P. Claeys. Climatic variability during penultimate interglacial and glacial periods recorded in a speleothem from Kanaan cave, Lebanon (Central Levant). *Quaternary Research* 90: 10–25. doi:10.1017/qua.2018.18
- 2017 \*Durham, S.R., **D. P. Gillikin**, D.H. Goodwin, G.P. Dietl, Rapid determination of oyster lifespans and growth rates using LA-ICP-MS line scans of shell Mg/Ca ratios. *Palaeogeography Palaeoclimatology Palaeoecology* 485: 201-209.
- 2017 Lorrain, A., F. Houlbrèque, F. Benzoni, L. Barjon, L. Tremblay-Boyer, C. Menkes, **D. P. Gillikin**, C. Payri, H. Jourdan, G. Boussarie, A. Verheyden, and E. Vidal. Seabirds supply nitrogen to reef-building corals on remote Pacific islets. *Scientific Reports* 7:3721 doi: 10.1038/s41598-017-03781-y
- 2017 \*Sletten, H. R., **D. P. Gillikin**, J. Halfar, C. F. T. Andrus, and H. M. Guzmán. Growth controls on Mg/Ca and P/Ca relationships in Gulf of Panama rhodoliths. *Chemical Geology* 465:1-10
- 2017 \*Kelemen, Z., **D.P. Gillikin**, §L.E. Graniero, §H. Havel, F. Darchambeau, A.V. Borges, A. Yambélé, A. Bassirou and S. Bouillon. Calibration of hydroclimate proxies in freshwater bivalve shells from Central and West Africa. *Geochimica et Cosmochimica Acta* 208: 41-62. doi: 10.1016/j.gca.2017.03.025
- 2017 \*Black H.D., C.F.T. Andrus, W.J. Lambert, **D. P. Gillikin**, and T. Rick.  $\delta^{15}\text{N}$  values in *Crassostrea virginica* shells provides earliest direct evidence for nitrogen loading in Chesapeake Bay. *Scientific Reports* 7, 44241; doi: 10.1038/srep44241
- 2017 **Gillikin, D.P.**, A. Verheyden, and D.H. Goodwin. Paleoclimate reconstruction from oxygen isotopes in a coral skeleton from East Africa: A data-enhanced learning experience. Hands-on-activity. *Oceanography* 30(1): 104-107. doi: 10.5670/oceanog.2017.104
- 2017 Dassié, E., K. DeLong, H. Kilbourne, B. Williams, N. Abram, L. Brenner, C. Brahmi, K. Cobb, T. Corrège, D. Dissard, J. Emile-Geay, H. Evangelista, M. Evans, J. Farmer, T. Felis, M. Gagan, **D.P. Gillikin**, N. Goodkin, M. Khodri, A. C. Lavagnino, M. LaVigne, C. Lazareth, B. Linsley, J. Lough, H. McGregor, I. Nurhati, G. Ouellette, L. Perrin, M. Raymo, B. Rosenheim, M. Sanstrom, B. Schöne, A. Sifeddine, S. Stevenson, D. Thompson, A. Waite, A. Wanamaker, and H. Wu. Saving our marine archives. *Eos* 98, <https://doi.org/10.1029/2017EO068159>. <https://eos.org/project-updates/saving-our-marine-archives>

- 2017 **Gillikin, D. P.**, A. Lorrain, A. Jolivet, \*Z. Kelemen, L. Chauvaud, and S. Bouillon. High-resolution nitrogen stable isotope sclerochronology of bivalve shell carbonate-bound organics. *Geochimica et Cosmochimica Acta* 200: 55-66. DOI: 10.1016/j.gca.2016.12.008
- 2017 \*Graniero, L.E., D. Surge, **D. P. Gillikin**, and I. Briz, Assessing elemental ratios as a paleotemperature proxy in calcite shells of patelloid limpets. *Palaeogeography Palaeoclimatology Palaeoecology* 465: 376-385. DOI: 10.1016/j.palaeo.2016.10.021
- 2016 \*Clark, J., A. Pérez-Huerta, **D. P. Gillikin**, A. Aldridge, M. Reolid, and K. Endo. Determination of paleoseasonality and specimen ontogenetic ages of fossil brachiopods using shell spiral deviations and chemical proxies. *Palaeoworld* 25: 662-674. doi:10.1016/j.palwor.2016.05.010
- 2015 \*Allan, M., N. Fagel, M. Van Rampelbergh, J. Baldini, J. Riotte, H. Cheng, L. Edwards, **D. P. Gillikin**, Y. Quinif, S. Verheyden. Lead concentrations and isotope ratios in speleothems as proxies for atmospheric metal pollution since the Industrial Revolution, *Chemical Geology* 401: 140-150. doi: 10.1016/j.chemgeo.2015.02.035
- 2015 \*Poulain, C., **D. P. Gillikin**, J. Thebault, J.-M. Munaron, M. Bohn, R. Robert, Y.-M. Paulet, and A. Lorrain. An evaluation of Mg/Ca, Sr/Ca, and Ba/Ca ratios as environmental proxies in aragonite bivalve shells. *Chemical Geology* 396: 42-50. doi:10.1016/j.chemgeo.2014.12.019
- 2014 §O'Neil, D. D., and **D. P. Gillikin**. Do freshwater mussel shells record road salt pollution? *Scientific Reports* (Nature) 4:7168; DOI:10.1038/srep07168.
- 2014 Bouillon, S., A. Yambélé, **D. P. Gillikin**, C. Teodoru, F. Darchambeau, T. Lambert, and A. V. Borges. Contrasting biogeochemical characteristics of right-bank tributaries and a comparison with the mainstem Oubangui River, Central African Republic (Congo River basin). *Scientific Reports* (Nature) 4:5402; DOI:10.1038/srep05402.
- 2013 Schöne, B. R., and **D. P. Gillikin**. Unraveling environmental histories from skeletal diaries - advances in sclerochronology. *Palaeogeography Palaeoclimatology Palaeoecology* 373:1-5 doi:10.1016/j.palaeo.2012.11.026
- 2013 **Gillikin, D. P.** and F. Dehairs. Uranium in aragonitic marine bivalve shells. *Palaeogeography Palaeoclimatology Palaeoecology* 373:60-65 doi:10.1016/j.palaeo.2012.02.028
- 2013 Goodwin, D.H., **D. P. Gillikin** and P.D. Roopnarine. Preliminary evaluation of potential stable isotope and trace element productivity proxies in the oyster *Crassostrea gigas*. *Palaeogeography Palaeoclimatology Palaeoecology* 373:88-97 doi:10.1016/j.palaeo.2012.03.034
- 2012 Bouillon, S., A. Yambélé, R. G. M. Spencer, **D. P. Gillikin**, P. J. Hernes, J. Six, R. Merckx, and A. V. Borges. Organic matter sources, fluxes and greenhouse gas exchange in the Oubangui River (Congo River basin). *Biogeosciences* 9, 2045-2062. doi:10.5194/bg-9-2045-2012
- 2012 Bouillon, S., R.M. Connolly, and **D. P. Gillikin**. Use of stable isotopes to understand food webs and ecosystem functioning in estuaries. In: Heip C, Philippart K, & Middelburg JJ (eds) Ecosystem processes in estuaries and coasts. Volume 7 of Wolanski & McLusky (eds) *Treatise on Estuarine and Coastal Science*. Elsevier Pages 143-173. doi: 10.1016/B978-0-12-374711-2.00711-7
- 2012 Nerot, C., A. Lorrain, J. Grall, **D. P. Gillikin**, J.-M. Munaron, H. Le Bris, Y.-M. Paulet. Stable isotope variations in benthic filter feeders across a large depth gradient on the continental shelf. *Estuarine Coastal and Shelf Science* 96: 228-235.

- 2011 Versteegh, E.A.A., **D. P. Gillikin** and F. Dehairs. Analysis of  $\delta^{15}\text{N}$  values in mollusk shell organic matrix by EA-IRMS without acidification: an evaluation and effects of long-term preservation. *Rapid Communications in Mass Spectrometry* 25: 675–680.
- 2010 \*Poulain, C., A. Lorrain, R. Mas, **D. P. Gillikin**, F. Dehairs, R. Robert, and Y.-M. Paulet. Experimental shift of diet and DIC stable carbon isotopes: influence on shell  $\delta^{13}\text{C}$  values in the Manila clam *Ruditapes philippinarum*. *Chemical Geology* 272: 75-82.
- 2010 Cunningham, M. A., K. M. Menking, **D. P. Gillikin**, S. L. Belli, §C. Freimuth, §K. C. Smith, A. M. Pregnall, M. A. Schlessman, and P. Batur. Influence of open space on water quality in an urban stream. *Physical Geography* 31:336-356.
- 2010 Schöne, B. R., Z. Zhang, D. Jacob, **D. P. Gillikin**, T. Tütken, D. Garbe-Schönberg, T. McConnaughey, and A. Soldati. Effect of organic matrices on the determination of the trace element chemistry (Mg, Sr, Mg/Ca, Sr/Ca) of aragonitic bivalve shells (*Arctica islandica*) – comparison of ICP-OES and LA-ICP-MS data. *Geochemical Journal* 44: 23-37.
- 2009 **Gillikin, D. P.**, §K. A. Hutchinson and §Y. Kumai. Ontogenic increase in metabolic carbon in freshwater mussel shells (*Pyganodon cataracta*). *Journal of Geophysical Research - Biogeosciences* 114, G01007.
- 2009 Cunningham M. A., C. M. O'Reilly, K. M. Menking, **D. P. Gillikin**, §K. C. Smith, §C. A. Foley, S. L. Belli, A. M. Pregnall, M. A. Schlessman, and P. Batur. The suburban stream syndrome: evaluating land use and stream impairments in the suburbs. *Physical Geography* 30: 269-284.
- 2008 McConnaughey, T. A. and **D. P. Gillikin**. Carbon isotopes in mollusk shell carbonates. *Geo-Marine Letters* 28: 287-299.
- 2008 **Gillikin, D. P.**, A. Lorrain, Y.-M. Paulet, L. André, and F. Dehairs. Synchronous barium peaks in high-resolution profiles of calcite and aragonite marine bivalve shells. *Geo-Marine Letters* 28: 351-358.
- 2008 Gröcke D. R. and **D. P. Gillikin**. Advances in mollusc sclerochronology and sclerochemistry: tools for understanding climate and environment. *Geo-Marine Letters* 28: 265-268.
- 2007 **Gillikin, D. P.**, A. Lorrain, \*L. Meng and F. Dehairs. A large metabolic carbon contribution to the  $\delta^{13}\text{C}$  record in marine aragonitic bivalve shells. *Geochimica et Cosmochimica Acta* 71: 2936-2946.
- 2007 **Gillikin, D. P.** and S. Bouillon. Determination of  $\delta^{18}\text{O}$  of water and  $\delta^{13}\text{C}$  of dissolved inorganic carbon using a simple modification of an elemental analyzer – isotope ratio mass spectrometer (EA-IRMS): an evaluation. *Rapid Communications in Mass Spectrometry* 21: 1475-1478.
- 2006 **Gillikin, D. P.**, A. Lorrain, S. Bouillon, P. Willenz and F. Dehairs. Stable carbon isotopic composition of *Mytilus edulis* shells: relation to metabolism and  $\delta^{13}\text{C}$  of DIC and phytoplankton. *Organic Geochemistry* 37: 1371-1382.
- 2006 Schöne, B. R., D. L. Rodland, D. M. Surge, J. Fiebig, **D. P. Gillikin**, S. M. Baier, and A. Goewert. Comment on “Stable carbon isotopes in freshwater mussel shells: Environmental record or marker for metabolic activity?” by J. Geist et al. (2005). *Geochimica et Cosmochimica Acta* 70: 2658-2661.
- 2006 **Gillikin, D. P.**, F. Dehairs, A. Lorrain, \*D. Steenmans, W. Baeyens, and L. André. Barium uptake into the shells of the common mussel (*Mytilus edulis*) and the potential for estuarine paleo-chemistry reconstruction. *Geochimica et Cosmochimica Acta* 70: 395-407.

- 2005 **Gillikin, D. P.**, F. Dehairs, W. Baeyens, J. Navez, A. Lorrain and L. André. Inter- and intra-annual variations of Pb/Ca ratios in clam shells (*Mercenaria mercenaria*): a record of anthropogenic lead pollution? *Marine Pollution Bulletin* 50: 1530-1540.
- 2005 Lorrain, A., **D. P. Gillikin**, Y.-M. Paulet., L. Chauvaud, J. Navez, A. Le Mercier and L. André. Strong kinetic effects on Sr/Ca ratios in the calcitic bivalve *Pecten maximus*. *Geology* 33, 965-968.
- 2005 **Gillikin, D. P.**, F. De Ridder, \*H. Ulens, M. Elskens, E. Keppens, W. Baeyens and F. Dehairs. Assessing the reproducibility and reliability of estuarine bivalve shells (*Saxidomus giganteus*) for sea surface temperature reconstruction: implications for paleoclimate studies. *Palaeogeography Palaeoclimatology Palaeoecology* 228: 70-85.
- 2005 **Gillikin, D. P.**, A. Lorrain, J. Navez, J. W. Taylor, L. André, E. Keppens, W. Baeyens and F. Dehairs. Strong biological controls on Sr/Ca ratios in aragonitic marine bivalve shells. *Geochemistry, Geophysics, Geosystems* 6, Q05009, doi:10.1029/2004GC000874.
- 2005 **Gillikin D.P.** and C.P. Kamanu. Burrowing in the East African mangrove crab *Chiromantes ortmanni* (Crosnier, 1965). *Crustaceana* 78: 1273-1275.
- 2005 De Ridder, F., R. Pintelon, J. Schoukens and **D. P. Gillikin**. Modified AIC and MDL model selection criteria for short data records. *IEEE Transactions on Instrumentation and Measurement* 54 (1): 144-150.
- 2004 De Ridder, F., J. Schoukens, R. Pintelon, **D. P. Gillikin**, L. André, W. Baeyens, A. DeBrauwere and F. Dehairs. Decoding non-linear growth rates in biogenic archives. *Geochemistry, Geophysics, Geosystems* 5, Q12015, doi:10.1029/2004GC000771.
- 2004 **Gillikin, D. P.** and C. D. Schubart. Ecology and systematics of mangrove crabs of the genus *Perisesarma* (Crustacea: Brachyura: Sesamidae) from East Africa. *Zoological Journal of the Linnean Society* 141 (3): 435-445. [Includes a new species description]
- 2004 **Gillikin, D.P.**, B. De Wachter and J. F. Tack. Physiological responses of two ecologically important Kenyan mangrove crabs exposed to altered salinity regimes. *Journal of Experimental Marine Biology and Ecology* 301(1): 93-109.
- 2004 **Gillikin, D. P.** Osmoregulatory ability of *Chiromantes ortmanni* (Crosnier, 1965) subjected to dilute and hypersaline seawater. *Crustaceana* 77(1): 67-74.
- 2001 **Gillikin, D. P.**, S. De Grave and J. F. Tack. The occurrence of the semi-terrestrial shrimp *Merguia oligodon* (De Man, 1888) in *Neosarmatium smithi* H. Milne Edwards, 1853 burrows in Kenyan mangroves. *Crustaceana* 74(5): 505-507.

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**RECENT CONFERENCE ABSTRACTS** (full list in appendix; § = undergrad, \* = grad)

- 2018 **Gillikin, D.P.**, A. Verheyden, §E. Crampe, S. Bouillon (2018). Isotope dendrochronology of African Mahogany (*Entandrophragma cylindricum*) from the Central African Republic as a hydroclimate proxy. AGU Chapman Conference on Hydrologic Research in the Congo Basin.
- 2018 **Gillikin, D.P.**, D.H. Goodwin, §J. LeFeuvre, A.D. Wanamaker (2018). Using clamshells to reconstruct past climate variability – A test from coastal North Carolina. 2018 Ocean Sciences Meeting, Portland, OR. Abstract PC14C-0557.
- 2017 **Gillikin, D.P.**, \*Z. Kelemen, §C.E.R. Puleio, \*D. Vanhove, §M.J. King, and S. Bouillon (2017). African freshwater bivalve shells as hydroclimate proxies. Goldschmidt 2017, Paris.
- 2016 **Gillikin, D.P.**, \*Z. Kelemen, §L.E. Graniero, §H. Havel, A. Yambélé, and S. Bouillon (2016). Reconstructing hydrological changes over the past century in Central Africa using freshwater bivalve shells. 4<sup>th</sup> International Sclerochronology Conference, Portland, Maine.

- 2016 **Gillikin, D.P** and A. Verheyden (2016). Paleoclimate reconstruction from oxygen isotopes in a coral skeleton from East Africa. 4<sup>th</sup> International Sclerochronology Conference, Portland, Maine.
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### TEACHING EXPERIENCE

- 2010-onwards Department of Geology, Union College, Schenectady, NY
- Stable Isotopes in Environmental Science w/ Lab (F10, F12, F14, F18)
  - Introduction to Oceanography (W11, W12, W13, W15, W16, W18, W19)
  - Earth and Life Through Time w/ Lab (S11, S12, S13, S15, S16, F16, S18, W19)
  - Biogeochemistry w/ Lab (includes a week-long trip to the tropics) (F11, F13, F15, F17)
  - Advanced Oceanography (includes a week-long trip to the Florida Keys) (W13)
- 2006-2010 Department of Earth Science and Geography, Vassar College, Poughkeepsie, NY:
- Stable Isotopes in Environmental Science (S07, S08, S10)
  - Advanced Oceanography (S09)
  - Sediments, Strata, and the Environment w/ Lab (F06, F08)
  - Paleontology, Paleobiology, Paleoecology w/ Lab (S10)
  - Evolution of Earth and its Life w/ Lab (Historical Geology; S07, S08, S09, F09)
  - Earth Environment and Humanity w/ Lab (Intro Geology; F07)
  - Geology of NY State (F07)
- 2006 Department of Geological Sciences, S.U.N.Y. New Paltz, New Paltz, NY
- Environmental Geology w/ Lab (S06)
  - Physical Geology laboratory (S06, F06)
  - Physical Geology field excursion (S06, F06)
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### STUDENT GUIDANCE

#### Post Doc

- 2014-18 Daan Vanhove, Reconstructing the biogeochemistry in tropical aquatic ecosystems using elemental and stable isotope tracers in freshwater bivalve shells. Joint Post Doc with KU Leuven, Belgium.

#### PhD

- 2019 Zita Kelemen. Freshwater bivalve shells as archives of riverine geochemistry and discharge in African river basins. Ph.D. KU Leuven, Belgium (co-advisor).
- 2019 Lauren Graniero, Detecting seasonal variations in nitrogen and carbon sources to an impacted river and its estuary using bivalve shell  $\delta^{15}\text{N}$  and  $\delta^{13}\text{C}$ . University of North Carolina – Chapel Hill (co-advisor).
- 2018 Thomas J. Geeza. Mussels of the Family Unionidae as Bio-monitors of Surface Water Quality. Ph.D. Penn. State (committee member).
- 2017 Stephen Durham, Oysters and climate change: a geohistorical perspective. Ph.D. Cornell University (committee member).
- 2016 Hillary Sletten. Rhodolith geochemistry as an ocean acidification proxy. Ph.D. University of Alabama (committee member).
- 2015 Mikko Vihtakari, Bivalves as indicators of environmental perturbations related to climate and ocean acidification. Ph.D. University of Tromso, Norway (dissertation jury).

#### MSc

- 2014 Heather Black.  $\delta^{15}\text{N}$  in mollusk shells as a potential paleoenvironmental proxy for nitrogen loading in Chesapeake Bay. M.Sc. University of Alabama (committee member).



- 2005 Ivy Meert. Reconstructing the environmental conditions of a European estuary (the Scheldt) over the past 800 years using *Mytilus edulis* shells. M.Sc. thesis. Vrije Universiteit Brussel, Belgium. [winner of “best thesis of the year” awarded by the Flemish Institute of Sea Research (VLIZ)]
- 2004 Dirk Steenmans. Validation of marine bivalve carbonate skeletons as recorders of paleo-productivity. M.Sc. thesis. Vrije Universiteit Brussel, Belgium.
- 2004 Li Meng. Can bivalves be used as archives of anthropogenic carbon input to the marine environment? M.Sc. thesis. Vrije Universiteit Brussel, Belgium.
- 2003 Hans Ulens. The potentials of *Saxidomus giganteus* as a paleoclimate proxy. M.Sc. thesis. Gent University, Belgium.

### BSc

- 2019 Hayley Bennett. Nitrogen isotopes in marine mollusks as indicators of nitrogen loading in coastal North Carolina. Undergraduate honors thesis, Union College.
- 2019 Elizabeth Cilia. Using marine macrophytes nitrogen isotopes as tracers of anthropogenic nitrogen loading. Undergraduate honors thesis, Union College.
- 2019 Heidi O’Hora. Coastal biogeochemistry of the Cape Lookout region of North Carolina. Undergraduate honors thesis, Union College. (MSc candidate U Michigan)
- 2018 Jordan Herbert. Investigating the causes of eutrophication in high Andean lakes (Junín region, Peru) through nitrogen isotope analysis of sediment cores. Undergraduate honors thesis, Union College.
- 2018 Joseph Ammirato. Replication of a speleothem stable isotope record of South American summer monsoon variability over the last ~6 ka from the central Peruvian Andes. Undergraduate honors thesis, Union College.
- 2018 Hannah Barnes. An isotopic investigation of a partially recrystallized aragonite stalagmite from central New York. Undergraduate honors thesis, Union College.
- 2017 Michael Kaye. Biogeochemistry of streams in the Lake Junin (Peru) watershed. Undergraduate honors thesis, Union College.
- 2016 Claire Puleio. Elemental Uptake in Botswana Freshwater Bivalve Shells *Mutela zambesiensis* and *Coelatura kunenensis* Along a Strong Evaporative Gradient: Paleoclimate Reconstruction Implications. Undergraduate honors thesis, Union College. (MSc candidate Washington State University)
- 2016 Caitlin McManimon. The effect of land use change on stable isotope ( $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$ ) composition and heavy metal concentrations in Connecticut wetlands during the Holocene. Undergraduate honors thesis, Union College (MSc U. Connecticut).
- 2016 Magnolia Brazak. Aging Oysters Using Mg/Ca Ratios. Undergraduate thesis, Union College.
- 2015 Nicholas Weidhaas. Biogeochemistry and sediment transport through a tropical Andean paternoster lake system: A modern calibration proxy for limnologically-based climate reconstructions. Undergraduate honors thesis, Union College (MSc U. Pittsburgh).
- 2015 Robert Queirolo. Late Holocene Climate Reconstruction Using Stable Isotopes in a Speleothem from Gage Caverns, New York. Undergraduate honors thesis, Union College.
- 2015 Christopher Kelly. Speleothem Trace Element Signatures Record a 4,200-year Period of Stable Climate during the Mid-Late Holocene at Gage Caverns, NY. Undergraduate honors thesis, Union College.
- 2015 Matthew McGavick. Eemian seasonality from a Belgian speleothem. Undergraduate honors thesis, Union College (MSc Lehigh).

- 2014 Kyle McQuiggan. Holocene climate records from Belgian speleothems. Undergraduate honors thesis, Union College (MSc Old Dominion University).
- 2014 Holly Havel. Recent sub-Saharan African climate change tracked using freshwater mussel shell geochemistry. Undergraduate honors thesis, Union College.
- 2013 Max Davidson. Vital effects on stable carbon isotopes in freshwater bivalve shells. Undergraduate honors thesis, Union College (MSc, U Delaware).
- 2013 Patrick Manning. Post-Irene suspended sediment, alkalinity and metal dynamics in the Schoharie and Mohawk Rivers. Undergraduate honors thesis, Union College.
- 2012 Lauren Graniero. Past biogeochemistry of remote African rivers recorded in freshwater mussel shells. Undergraduate honors thesis, Union College. (MSc Texas A&M; PhD candidate UNC Chapel Hill)
- 2012 Taylor LaBrecque. Holocene climate and environmental change from a short lake core in Upstate NY. Undergraduate honors thesis, Union College (with Donald Rodbell). (MSc, Northern Arizona University)
- 2012 Marc Zeyak. Holocene climate and environmental change from trace elements in a Belgian speleothem. Undergraduate honors thesis, Union College.
- 2011 Damon Byrne. Tracking responses to the 2010 Deepwater Horizon oil spill using trace elements in molluscan shells. Undergraduate honors thesis, Union College.
- 2010 Rachel Lowenthal. Carbonate biogeochemistry of estuaries in a high CO<sub>2</sub> world: past, present, and future consequences for calcifying organisms. Undergraduate honors thesis, Vassar College. (MSc candidate, Yale) [Awarded: Sigma Xi]
- 2010 Zakary Ratajczak. Using wood chemistry ( $\delta^{13}\text{C}$  &  $\delta^{18}\text{O}$ ) and tree anatomical physiology (tracheid density) to detect hurricane storm surges and predict future responses of Loblolly pine to climate change. Undergraduate honors thesis, Vassar College. (PhD, Kansas State; Post Doc, U. Virginia & U.W. Madison) [Awarded: Botanical Society of America Young Botanist; Sigma Xi]
- 2010 Sarah Ledford. The effect of mill-dam ponds on the biogeochemistry of small streams. Undergraduate honors thesis, Vassar College. (PhD, Syracuse University, post doc Temple; now Assistant Professor at Southern Georgia University) [Awarded: Sigma Xi]
- 2010 Nadine Reitman. Paleocology and chemostratigraphy of the Amansair and Tsagaanbulag Formations, Gobi-Altai Terrane, Shine Jinst, Mongolia. Undergraduate honors thesis and Keck Geology Consortium project, Vassar College. (MSc, CU Boulder; now at USGS) [Awarded: Sigma Xi]
- 2009 Erika Noll. Carbon cycling in small streams in Dutchess County, NY. Undergraduate Research Summer Institute project. (MSc, UC Riverside)
- 2009 Wilson Salls. Stable carbon and nitrogen isotope signatures of freshwater algae from the Casperskill (Eastern NY). Undergraduate honors thesis, Vassar College. (MSc, UC Davis; now at EPA) [Awarded: Sigma Xi]
- 2009 Matthew Winnick. Evaluating the freshwater mussel *Elliptio complanata* as a proxy for road salt pollution in northeastern US streams. Undergraduate honors thesis, Vassar College. (PhD, Stanford; Assistant Professor UMass Amherst) [Awarded: Sigma Xi]
- 2008 Adam Jost. Carbon isotope stratigraphy and the Silurian-Devonian boundary in the Eastern Appalachian Basin. Undergraduate honors thesis, Vassar College. (PhD, Stanford; Post Doc, MIT) [Awarded: Sigma Xi]

- 2008 Shana Volesky. Dendrochemistry as an indicator of soil salt concentrations. Undergraduate honors thesis, Vassar College.

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## SYNERGISTIC ACTIVITIES

### *Guest Editorials (not including AE positions listed above)*

- 2019 Guest Editor with Alan Wanamaker (Iowa State) and Fred Andrus (U. Alabama). Chemical Geology: Chemical Sclerochronology.
- 2012 Guest Editor with Bernd Schöne (Mainz, DE). Palaeogeography, Palaeoclimatology, Palaeoecology: Unraveling environmental histories from skeletal diaries - advances of sclerochronology.
- 2008 Guest Editor with Darren R. Gröcke (Durham, UK). Geo-Marine Letters: Advances in mollusc sclerochronology and sclerochemistry: tools for understanding climate and environment.

### *Invited talks*

- 2019 Keynote Speaker Bivalve sclerochemistry: challenges and opportunities. 5<sup>th</sup> International Sclerochronology Conference, 16-20 June 2019 Split, Croatia.
- 2017 Invited Speaker Reconstructing hydrological changes over the past century in Central Africa using freshwater bivalve shells. SUNY Stony Brook.
- 2017 Invited Speaker Reconstructing hydrological changes over the past century in Central Africa using freshwater bivalve shells. Iowa State University.
- 2017 Invited Speaker Reconstructing hydrological changes over the past century in Central Africa using freshwater bivalve shells. Duke University.
- 2017 Invited Speaker Reconstructing hydrological changes over the past century in Central Africa using freshwater bivalve shells. UNC-Chapel Hill.
- 2012 Invited Speaker Advances in bivalve sclerochronology and sclerochemistry. Royal Belgian Institute of Natural Sciences, Brussels, Belgium.
- 2011 Invited Speaker Long-term effects of land-use change on a European estuary told by mussel shells. Rensselaer Polytechnic Institute (RPI).
- 2011 Invited Speaker Environmental archives from bivalve shell geochemistry. European Institute for Marine Studies (IUEM), Brest (France)
- 2011 Invited Speaker Land-use impacts on estuarine functioning in the Low Countries over the past millennium. Colgate College.
- 2010 Invited Speaker Reconstructing ancient hydrology from Belgian mussel shell geochemistry. Union College Chemistry Seminar Series.
- 2010 Invited Speaker 800 years of garbage: Reconstructing ancient hydrology from Belgian shell middens. University of Florida at Gainesville.
- 2010 Invited Speaker 800 years of garbage: Reconstructing ancient hydrology from Belgian shell middens. University of North Carolina at Wilmington.
- 2009 Invited Speaker Trace element proxies of environmental change in bivalve shell carbonate: the good, the bad and the ugly. Dauphin Island Sea Lab, Alabama.
- 2009 Keynote Speaker 800 years of garbage: Mussel shells from Belgian middens reveal environmental change over the past millennium. Bivalve Workshop, Brussels, Belgium.
- 2008 Invited Speaker 800 years of garbage - a geochemical analysis of mussel shells from Belgian middens. Syracuse University.

- 2008 Invited Speaker Mussels from Brussels: An 800 year precipitation record from the Belgian coast. Rhodes College.
- 2008 Keynote Speaker Biological archives: environmental proxies from sub-daily to multi-decadal scales. Université de Bretagne Occidentale, Brest (France) - GIS Europôle Mer kick-off meeting.
- 2007 Invited Speaker A geochemical analysis of *Mytilus edulis* shells from the Belgian coastal area spanning the past 800 years. Workshop on stable isotopes in archaeological midden shells: High-resolution paleoclimatic and -environmental archives, McMaster University, Hamilton, Canada.

*Service to the community*

- 2016 Session Co-Chair High-resolution geochemical proxies of global change: progress, problems, and utility. 2016 Ocean Sciences Meeting, New Orleans, LA.
- 2014 Session Co-Chair with David Goodwin (Denison) & Alan Wanamaker (ISU). High-resolution geochemical proxies of global change: progress, problems, and utility (session 192) Geological Society of America Annual Meeting, Vancouver, British Columbia.
- 2014 Summer Workshop organizer: Stable Isotopes in Environmental Research and Undergraduate Research Training. Two-day workshop at Union College with 19 attendees (June 19-20).
- 2014-2017 Expert Panel member, Flemish Science Foundation (FWO). Evaluate PhD, Post Doc, and research project proposals for the FWO. Typically more than 100 proposals per year, with reports due for about 25 per year.
- 2014 Session Co-Chair with Fred Andrus (U Alabama) Coastal archives of climate change and ecosystem processes. Session 24c. Goldschmidt 2014, Sacramento, CA.
- 2014 Session Co-Chair with Alan Wanamaker (ISU) Proxy records for understanding coastal and oceanic processes and their preservation in present and past. Session 99. 2014 Ocean Sciences Meeting, Honolulu, HI.
- 2013-16 4<sup>th</sup> International Sclerochronology Conference (Maine, USA) – Organizing committee.
- 2011-13 3<sup>rd</sup> International Sclerochronology Conference (Bangor, Wales) – Organizing committee.
- 2013 Symposium Co-Chair with Donald Rodbell (Union) and P. Thompson Davis (Bentley University) Climate change in space and time. Geological Society of America Northeastern Meeting (session received 55 abstracts).
- 2012 Session Co-Chair with Miriam Katz (RPI), Beth Christensen (Adelphi), & Alicia Kahn (Rutgers/Chevron) Oceans and climates through earth history: from proxy reconstructions to model assessments. Geological Society of America Annual Meeting, Charlotte, NC (session received 33 abstracts).
- 2012 Session Co-Chair with Alan Wanamaker (ISU). High-resolution geochemical proxies of global change: progress, problems, and utility. 2012 Ocean Sciences Meeting, Salt Lake City, UT (session received 31 abstracts).
- 2009-12 Geological Society of America Committee on Research Grants Member-at-Large.
- 2009-10 2<sup>nd</sup> International Sclerochronology Conference (Mainz, Germany) – Organizing committee.
- 2010 Session Co-Chair Advances at the frontiers of paleoproxy validation. American Geophysical Union Fall meeting, San Francisco CA.

- 2009 Session Co-Chair with Alan Wanamaker (Bangor, UK/ ISU). High-resolution terrestrial and marine geochemical proxies of global change: progress, problems and utility. Geological Society of America Annual Meeting, Portland, OR (session received 45 abstracts).
- 2008 Session Co-Chair with Ann Goewert (UNC). Chemical and isotopic composition of carbonate skeletons: Seasonal environmental and climate records. American Geophysical Union Fall meeting, San Francisco CA.
- 2008 Session Co-Chair with Anouk Verheyden (SUNY Orange). The Potential of isotopic and elemental composition of tree-rings in climatic and environmental reconstruction. American Geophysical Union Fall meeting, San Francisco CA.
- 2008 Session Co-Chair with David Goodwin (Denison) & David Kesler (Rhodes). Freshwater paleoclimate archives. Geological Society of America Annual Meeting, Houston TX.
- 2008 Session Co-Chair with Bernd Schöne (Mainz, DE) & Dorothee Hippler (Amsterdam, NL). Sclerochronology: A powerful tool for environmental reconstruction. European Geophysical Union General Assembly, Vienna, Austria.
- 2007 Session Co-Chair with Anne Cohen (WHOI), Jess Adkins (Caltech) & Daniel McCorkle (WHOI). Frontiers in biomineralization research: processes, geochemical signatures, and responses to global change. American Geophysical Union Fall meeting, San Francisco CA.
- 2006 Session Co-Chair with Peter K. Swart (U Miami). Paleoceanography and Paleoclimatology General Contributions. American Geophysical Union Fall meeting, San Francisco CA.

*Service to Union College*

- 2018-19 Ad-hoc tenure committee Union College
- 2017-20 Program Director, Environmental Science, Policy and Engineering [incl. 2018 program study]
- 2016 Faculty Review Board Sub-committee, Triennial Merit Review
- 2016 Faculty Marshal Graduation commencement June 2016
- 2015-16 Task Force (Chair), Tasked to investigate Common Curriculum science requirement.
- 2015-17 Search Committee, Tenure track line in Environmental Engineering
- 2015 Department Liaison, Notice-Choose-Tell Advising tool
- 2015 Committee member, General Education Board (1 term)
- 2013 Junior Faculty Focus Group (Chair), Dean of Academic Departments and Programs Search
- 2012-2016 Committee member, Green Fee Grant Committee
- 2011-2013 Committee member, Library Liaison Committee (3-year term minus two terms for sabbatical)
- 2011-now Pre-major and major advising
- 2010-now Geology Club Co-Advisor, Advise and work with club officers to conduct activities such as Travelogues, Petrified Sea Gardens cleanup, Hurricane Isabel Schoharie cleanup, t-shirt design, etc.
- 2010-now Committee member, Environmental Science, Policy, and Engineering Program Steering Committee

*Service to Vassar College*

- 2009-2010 Pre-major and major advising
- 2008-2010 Committee member, The Vassar Farm Oversight Committee.

### *Professional development*

- 2016 Workshop Participant, Geosciences Atom Probe Tomography (APT) Workshop, University of Alabama
- 2013 Workshop Participant, 3rd International Workshop on Clumped Isotopes, Harvard University.
- 2009 Workshop Participant, Teaching Paleontology in the 21<sup>st</sup> Century, National Association of Geoscience Teachers, Cornell University.

### *Reviewing*

- ongoing (> 130 manuscripts/ proposals):
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| National Science Foundation (US)                       | Trees - Structure and Function                      |
| National Geographic Research Grants                    | Journal of the American Water Resources Association |
| Netherlands Organization for Scientific Research (NWO) | Limnology and Oceanography                          |
| Research Corporation for Science Advancement           | Marine and Freshwater Research                      |
| German Science Foundation (DFG)                        | Marine Ecology Progress Series                      |
| Graduate Women in Science National Fellowship Program  | Marine Geology                                      |
| Biogeosciences (EGU)                                   | Marine Pollution Bulletin                           |
| Bulletin of Marine Science                             | Nature Geosciences                                  |
| Chemical Geology (~12 reviewer award)                  | Palaeogeography, Palaeoclimatology, Palaeoecology   |
| Earth and Planetary Science Letters                    | Palaaios  |
| Estuaries and Coasts                                   | Paleoceanography                                    |
| Geo-Marine Letters                                     | Plos One  |
| Geochemical Journal                                    | PNAS  |
| Geochemistry, Geophysics, Geosystems                   | Quaternary International                            |
| Geochimica et Cosmochimica Acta                        | Quaternary Research                                 |
| Geology  | Quaternary Science Reviews                          |
| Geophysical Research Letters                           | Rapid Communications in Mass Spectrometry           |
| Isotopes in Environmental & Health Studies             | Scientia Marina                                     |
| ICES Journal of Marine Science                         | Scientific Reports (Nature)                         |
| Journal of Geophysical Research-Biogeosciences (AGU)   | Talanta   |
| Journal of Molluscan Studies                           | Terra Nova  |
| Journal of Shellfish Research                          | Transactions of the American Fisheries Society      |
|  | Proceedings of the Geologists' Association          |

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## **PROFESSIONAL AFFILIATIONS**

- American Geophysical Union (member since 2001)
- The Geochemical Society (member since 2002)
- The Geological Society of America (member since 2003; Fellow since 2018)
- National Association of Geoscience Teachers (member since 2007)
- New York Paleontological Society (member since 2011)
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**Appendix – Full list of published abstracts** (§ = undergraduate students, \* = graduate students):

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153. §Chormann, A.G., **D.P. Gillikin**, \*D.L. Thatcher, A.D. Wanamaker Jr., V.J. Polyak, Y. Asmerom (2019) Calibrating hydroclimate proxies in a southern Portuguese speleothem. Geological Society of America Abstracts with Programs. Vol. 51, No. 1, doi: 10.1130/abs/2019NE-327947
152. §Bennett, H.I., **D.P. Gillikin**, D.H. Goodwin, §E. Cilia, §H. O'Hora, §M. Fratian, §E. Carrigan, A.D. Wanamaker Jr. (2019) A multi-species survey of nitrogen isotopes in marine mollusk soft tissues from a North Carolina coastal system: An indicator of anthropogenic nitrogen loading? Geological Society of America Abstracts with Programs. Vol. 51, No. 1, doi: 10.1130/abs/2019NE-327937
151. §O'Hora, H., **D.P. Gillikin**, D.H. Goodwin, §H.I. Bennett, §E. Cilia, §M. Fratian, §E. Carrigan, A.D. Wanamaker Jr. (2018) Carbon dynamics in a marsh-dominated estuarine system. Geological Society of America Abstracts with Programs. Vol. 51, No. 1, doi: 10.1130/abs/2019NE-327957
150. Warner, N., \*T.J. Geeza, **D. P. Gillikin**, T. Tasker, P. Piotrowski, B. McDevitt, F. Dorman, K. Van Sice (2018) Accumulation of oil and gas wastewater contaminants in freshwater bivalves. 2018 Fall AGU meeting. Abstract H14B-03.
149. \*Katz, S.A., **D.P. Gillikin**, D.T. Rodbell, H. Cheng (2018) Climatic and hydrologic variability recorded in a Mid- to Late-Holocene central NY speleothem. Geological Society of America Abstracts with Programs. Vol. 50, No. 6, doi: 10.1130/abs/2018AM-321397
148. §O'Hora, H., **D.P. Gillikin**, D.H. Goodwin, §H.I. Bennett, §E. Carrigan, §E. Cilia, §M. Fratian, A.D. Wanamaker Jr. (2018) Biogeochemical cycling in a salt marsh estuarine ecosystem in coastal North Carolina. Geological Society of America Abstracts with Programs. Vol. 50, No. 6, doi: 10.1130/abs/2018AM-318133
147. §Bennett, H.I., **D.P. Gillikin**, D.H. Goodwin, §E. Cilia, §E. Carrigan, §M. Fratian, §H. O'Hora, A.D. Wanamaker Jr. (2018) Nitrogen isotopes in marine mollusks as indicators of nitrogen loading in coastal North Carolina. Geological Society of America Abstracts with Programs. Vol. 50, No. 6, doi: 10.1130/abs/2018AM-318143
146. §Cilia, E., **D.P. Gillikin**, D.H. Goodwin, §H.I. Bennett, §E. Carrigan, §M. Fratian, §H. O'Hora, A.D. Wanamaker Jr. (2018) Detecting sources of eutrophication in coastal North Carolina using  $\delta^{15}\text{N}$  values of sea grasses and algae. Geological Society of America Abstracts with Programs. Vol. 50, No. 6, doi: 10.1130/abs/2018AM-318292
145. \*Graniero, L.E., D. Surge, **D.P. Gillikin** (2018) Evaluating oxygen and carbon isotope ratios in *Rangia cuneata* as a paleoenvironmental proxy. Geological Society of America Abstracts with Programs. Vol. 50, No. 6, doi: 10.1130/abs/2018AM-324245
144. §Fratian, M., D.H. Goodwin, **D.P. Gillikin**, §H.I. Bennett, §E. Carrigan, §E. Cilia, §H. O'Hora, A.D. Wanamaker Jr. (2018) Using stable isotopes to reconstruct growth of the hard clam *Mercenaria mercenaria*. Geological Society of America Abstracts with Programs. Vol. 50, No. 6, doi: 10.1130/abs/2018AM-323535
143. §Carrigan, E., D.H. Goodwin, **D.P. Gillikin**, §H.I. Bennett, §E. Cilia, §M. Fratian, §H. O'Hora, A.D. Wanamaker Jr. (2018) Salinity and water oxygen isotope records of hydrologic variability in Jarrett Bay, North Carolina, USA. Geological Society of America Abstracts with Programs. Vol. 50, No. 6, doi: 10.1130/abs/2018AM-322503
142. **Gillikin, D.P.**, A. Verheyden, E. Crampe, S. Bouillon (2018). Isotope Dendrochronology of African Mahogany (*Entandrophragma cylindricum*) from the Central African Republic as a Hydroclimate Proxy. AGU Chapman Conference on Hydrologic Research in the Congo Basin.
142. Kelemen, Z., **D.P. Gillikin**, A. Yambélé, S. Bouillon (2018) Reconstructing the river water isotope record for the Oubangui River during the past century. AGU Chapman Conference on Hydrologic Research in the Congo Basin.
142. Yambélé, A., Z. Kelemen, A.V. Borges, **D.P. Gillikin**, S. Bouillon (2018) A synthesis of the biogeochemistry and hydrology of the Oubangui River AGU Chapman Conference on Hydrologic Research in the Congo Basin.

141. Geeza, T.J., **D.P. Gillikin**, N. Warner (2018). Trace and major element ratios in *Elliptio dilatatus* shells as indicators of surface water quality in western Pennsylvania. Geological Society of America Southeastern Meeting.
140. **Gillikin, D.P.**, D.H. Goodwin, J. LeFeuvre, A.D. Wanamaker (2018). Using clamshells to reconstruct past climate variability – A test from coastal North Carolina. 2018 Ocean Sciences Meeting, Portland, OR. Abstract PC14C-0557.
139. §Herbert, J.N., **D.P. Gillikin**, §J.B. Molloy, §T. Lama Sherpa, and D.T. Rodbell (2018). Investigating the causes of eutrophication in high Andean lakes (Junín region, Peru) through nitrogen isotope analysis of sediment cores. Geological Society of America Northeastern Meeting.
138. §Chormann, A.G., §H.E. O’Hora, §H.I. Bennett, §A.C. Been, §A. Gallego, §S.K. Williams, §J.N. Herbert, §H.F. Barnes, §J.N. Maung, §A.C. McReynolds, §A.E. Pagano, §S.M. Hickernell, §A.P. Ludlam, §M. Pope, A. Verheyden, and **D.P. Gillikin** (2018). Lateral exchange of mangrove sediment porewater dissolved inorganic carbon to coral reef ecosystems. Geological Society of America Northeastern Meeting.
137. Katz, S.A., **D.P. Gillikin**, D.T. Rodbell, and H. Cheng (2018). High-resolution paleo-hydrologic speleothem record from central New York, Schoharie County. Geological Society of America Northeastern Meeting.
136. §Barnes, H., **D.P. Gillikin**, S.A. Katz, and H. Cheng (2018). An isotopic investigation of a partially recrystallized aragonite stalagmite from central New York. Geological Society of America Northeastern Meeting.
135. §Ammirato, J., **D.P. Gillikin**, D.T. Rodbell, S.A. Katz, and H. Cheng (2018). Replication of a speleothem stable isotope record of South American summer monsoon variability over the last ~6 ka from the central Peruvian Andes. Geological Society of America Northeastern Meeting.
134. §Treacy, K., A. Verheyden, **D.P. Gillikin**, and S. Bouillon (2018). High-resolution stable oxygen isotope profiles of a tropical tree, *Colophospermum mopane*, from northern Botswana. Geological Society of America Northeastern Meeting.
133. Thatcher, D.L., A.D. Wanamaker, R.F. Denniston, Y. Asmerom, C. Ummenhofer, V.J. Polyak, F. Hasiuk, J. Haws, and **D.P. Gillikin** (2018). Stalagmite laminae as a climate proxy: Decoding 1200 years of Iberian climate. Geological Society of America North-Central Meeting.
132. Thatcher, D.L., A.D. Wanamaker, R.F. Denniston, Y. Asmerom, C. Ummenhofer, V.J. Polyak, F. Hasiuk, J.A. Haws, and **D.P. Gillikin** (2018). Changes in hydroclimate in Iberia in the last 1200 years: insights from speleothem records from western Portugal. Geological Society of America North-Central Meeting.
131. \*Durham, S.R., **D. P. Gillikin**, D.H. Goodwin, and G.P. Dietl, (2017). LA-ICP-MS line scans of shell Mg/Ca ratios as a rapid, cost-effective alternative to stable isotope analysis for oyster sclerochronology. Geological Society of America Annual meeting Abstracts with Programs. Vol. 49, No. 6.
130. Kornecki, K., M. Katz, F.M.G. McCarthy, M.F. Schaller, **D.P. Gillikin**, and J.C. Stager, (2017). Calibrating paleo-biomonitoring in Lake George, NY sediments with modern geochemical and limnological measurements. Vol. 49, No. 6.
129. Verheyden, A., §E. Crampe, **D.P. Gillikin**, (2017). High-resolution microsampling of tree rings for stable isotope analysis in tropical trees. 2017 Advances in Stable Isotope Techniques and Applications Workshop.
128. **Gillikin, D.P.**, \*Z. Kelemen, §C.E.R. Puleio, \*D. Vanhove, §M.J. King, and S. Bouillon (2017). African freshwater bivalve shells as hydroclimate proxies. Goldschmidt 2017.
127. Verheyden, A., §E. Crampe, **D.P. Gillikin**, and S. Bouillon (2017). Isotope dendrochronology of African Mahogany (*Entandrophragma macrophyllum*) from the Central African Republic as a hydroclimate proxy. Goldschmidt 2017.
126. Kornecki, K., Katz, M.E., **Gillikin, D.P.**, Schaller, M.F., and Stager, C. (2017). Microfossils in Lake George, NY sediments: Calibrating paleo-biomonitoring with long-term measurements. North American Micropaleontology Section Geologic Problem Solving with Microfossils Conference



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