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ERIC J. MORGAN

Employment

2015–*present* • **Postdoctoral Scholar — Scripps Institution of Oceanography**

- Supervisor: Dr. Ralph Keeling
- Participating in an airborne campaign over the Southern Ocean, measuring atmospheric oxygen, CO_2, and Ar/N_2 as part of the O_2/N_2 Ratio and CO_2 Airborne Southern Ocean (ORCAS) project

2010–2011 • **Senior Research Technician — Boston University**

- Supervisor: Dr. Robinson Fulweiler
- Managed coastal biogeochemistry lab focusing on trace gas fluxes in sediments
- Primary technician on GC–ECD/FID (gas chromatograph–electron capture detector/flame ionization detector) for analysis of greenhouse gas fluxes from sediment cores
- Supervised student researchers and ordered reagents and supplies; assisted with nutrient analysis, elemental (CHN) analysis, sediment chlorophyll analysis, and field work

2008–2009 • **Adjunct Faculty Lecturer — Simmons University**

- Supervisor: Dr. Michael Berger
- Taught laboratory section of general, organic, and analytical chemistry
- Duties included lecturing, grading, preparing materials, and supervising student work

2005–2008 • **Research Technician — University of Rhode Island**

- Supervisor: Dr. Rainer Lohmann
- Managed laboratory specializing in analysis for persistent organic pollutants (PCBs, PAHs, PBDEs, Dioxins)
- Primary technician responsible for a GC–MS (gas chromatograph–mass spectrometer)
- Ran and maintained the URI/GSO CHN laboratory

Education

2011–2015 • **Dr. rer. nat. | Max Planck Institute for Biogeochemistry / University of Kiel**

- Subject: Biogeochemistry (*magna cum laude*)
- Supervisors: Dr. Jošt V. Lavrič and Prof. Dr. Martin Heimann
- PhD work was completed as a student in the International Max Planck Research School for Global Biogeochemical Cycles, housed at the MPI for Biogeochemistry; degree was conferred by Christian-Albrechts-Universität zu Kiel
- Established an atmospheric observatory for greenhouse gases and atmospheric oxygen in Gobabeb, Namibia
- Conducted atmospheric transport modeling and forward simulations of species of interest (CO_2, APO)
- Investigated air–sea gas exchange of greenhouse gases and oxygen in the Benguela Upwelling System
- Thesis title: *Continuous Measurements of Greenhouse Gases and Atmospheric Oxygen in the Namib Desert*

2005–2007 • **M.S. | University of Rhode Island, Graduate School of Oceanography**

- Subject: Oceanography
- Supervisors: Dr. Rainer Lohmann
- Awards: Recipient of the Corless/Kester Prize in Marine Chemistry, Spring 2007, awarded annually to the student in Chemical Oceanography who gives the best seminar
- Developed passive sampling network for assessment of air–sea and sediment–water fluxes of polychlorinated biphenyls
- Analyzed benthic and pelagic invertebrates and fish for PCB bioaccumulation
- Studied trophic interactions with stable isotope analysis of fish and invertebrate tissue ($\delta^{13}C$, $\delta^{15}N$, $\delta^{34}S$)
- Thesis title: *Passive Sampling of PCB Activities in Narragansett Bay: Bioaccumulation and Exchange Between Reservoirs*

2001–2005 • **B.A. | American University**

- Subject: Environmental Science
- Supervisor: Dr. Stephen MacAvoy
- Awards: Graduated *magna cum laude*, *Phi Beta Kappa*, Dean's List (for high marks) all semesters, Dean's Scholarship (based on high G.P.A.)
- Conducted small research study analyzing the tissue of the giant deep-sea isopod *Bathynomus giganteus* to assess the extent contribution of biomass from hydrocarbon seep communities to the diet of benthic scavengers in the Gulf of Mexico

2001–2005 • **B.A. | American University**

- Subject: Visual Media
- Studied film, photography, graphic design, and motion graphics, with a focus on documentary film

Field Experience

Marine

2013–2014 Visiting Scientist, *FS Meteor*, Cruises M99–M104. Installed automated system for continuous atmospheric measurements of CO_2 and CH_4, and discreet flask samples during a series of cruises around southern Africa. Work on instrument system was done in port only.

2006–2007 Participated in weekly maintenance of sonde arrays in Narragansett Bay (RI, United States), deploying passive samplers for persistent organic pollutants. Work was conducted with small boats.

Participated in weekly fish trawls on the *R/V Cap'n Bert*, assisting with sorting, counting, and identifying demersal fish in Narragansett Bay and Rhode Island Sound. Fish were collected and analyzed as part of a bioaccumulation study.

Chief Scientist, *R/V Endeavor*, Cruise EN–421. Sampled air and water for persistent organic pollutants during transect of the Atlantic Ocean (Crete to United States)

Terrestrial

2012–2014 Participated in installation and subsequent maintenance visits to the Namib Desert Atmospheric Observatory in Gobabeb, Namibia, usually in the capacity of lead scientist.

2010–2011 Sediment coring and water sampling in salt marshes in NE United States. Subsequent analysis included greenhouse gas fluxes, inorganic nutrients, carbon content, chlorophyll.

Airborne

2015 Participated in the NCAR/RAF/NSF O_2/N_2 Ratio and CO_2 Airborne Southern Ocean (ORCAS) project, operating the Medusa flask sampler and Airborne Oxygen Instrument (AO2) on a Gulfstream V. Flights were based out of Punta Arenas, Chile, and focused on the region surrounding the Drake Passage.

2015 Participated in the NCAR/RAF Airborne Research Instrumentation Testing Opportunity (ARISTO) flight test program, operating the Medusa flask sampler and assisting with the Airborne Oxygen Instrument (AO2) over the course of 4 test flights with a C-130.

Publications

Peer-Reviewed Papers

- **Morgan, E.**; Lavrič, J.V.; Seifert, T.; Chicoine, T.; Day, A.; Gomez, J.; Logan, R.; Sack, J.; Shuuya, T.; Uushona, E.G.; Vincent, K.; Schultz, U.; Brunke, E.-G.; Labuschagne, C.; Thompson, R.L.; Schmidt, S.; Manning, A.C.; Heimann, M. Continuous measurements of greenhouse gases and atmospheric oxygen at the Namib Desert Atmospheric Observatory. *Atmospheric Measurement Techniques*, 8(2), 2233–2250, 2015.

- Fagherazzi, S.; Mariotti, G.; **Morgan, E.**; Fulweiler, R.W. The relationships among hydrodynamics, sediment distribution, and chlorophyll in a mesotidal estuary. *Estuarine, Coastal and Shelf Science*, 144, 54–64, 2014.

- Lohmann, R.; Dapsis, M.; **Morgan, E.**; Dekany, V.; Luey, P.J. Determining Air–water Exchange, Spatial and Temporal Trends of PAHs in an Urban Estuary Using Passive Polyethylene Samplers. *Environmental Science and Technology*, 45, 2655–2662, 2011.

- **Morgan, E.** and Lohmann, R. Dietary Uptake from Historically Contaminated Sediments as a Source of PCBs to Migratory Fish and Invertebrates in an Urban Estuary. *Environmental Science and Technology*, 44, 5444–5449, 2010.

- Lohmann, R.; Gioia, R.; Jones, K.; Nizzetto, L.; Temme, C.; Xie, Z.; Schulz-Bull, D.; **Morgan, E.**; Jantunen, L. Organochlorine Pesticides and PAHs in the Surface Water and Atmosphere of the North Atlantic and Arctic Ocean. *Environmental Science and Technology*, 43, 5633–5639, 2009.

- **Morgan, E.** and Lohmann, R. Detecting Air–Water and Surface–Deep Water Gradients of PCBs Using Polyethylene Passive Samplers. *Environmental Science and Technology*, 42, 7248- 7253, 2008.

- MacAvoy, S.E.; Carney, R.S.; **Morgan, E.**; Macko, S.A. Stable isotope variation among the mussel *Bathymodiolus childressi* and associated heterotrophic fauna at four cold-seep communities in the Gulf of Mexico. *Journal of Shellfish Research*, 27(1), 147–151, 2008.

- MacAvoy, S.E.; **Morgan, E.**; Carney, R.S.; Macko, S.A. Chemoautolithotrophic production as a fuel for heterotrophs in hydrocarbon seeps: an examination of mobile benthic fauna and seep residents. *Journal of Shellfish Research*, 27(1), 153–161, 2008.

Dissertations & Non-Refereed Publications

- **Morgan, E.** Continuous Measurements of Greenhouse Gases and Atmospheric Oxygen in the Namib Desert. Ph.D. Thesis, Christian-Albrechts-Universität zu Kiel, 2015.

- **Morgan, E.** Passive Sampling of PCB Activities in Narragansett Bay: Bioaccumulation and Exchange Between Reservoirs. M.S. Thesis, University of Rhode Island, Graduate School of Oceanography, 2007.

- **Morgan, E.** and Lohmann, R. "The PCB Legacy in Narragansett Bay" *Narragansett Bay Journal*, Issue 17, Winter 2010.

In Preparation, Submission, or Review

- **Morgan, E.**; Lavrič, J.; Arévalo-Martínez, D.L.; Bange, H.W.; Steinhoff, T.; Seifert, T.; Heimann, M. Air–Sea Fluxes of Greenhouse Gases, Carbon Monoxide, and Oxygen in the Benguela Current Region During Upwelling Events. *In preparation.*

- **Morgan, E.**; Lavrič, J.; Labuschagne, C.; Brunke, E.-G.; Heimann, M. Seasonally Occurring Anomalies of CO_2, CH_4, and CO, Induced by Biomass Burning and Variability in Atmospheric Transport. *In preparation.*

Presentations

Conferences & Invited Seminars

- **Morgan, E.**; Stephens, B.; Keeling, R.; *et al.* "An Overview of ORCAS: The O_2/N_2 Ratio and CO_2 Airborne Southern Ocean Study". Invited Seminar, SOCCOM Annual Meeting, Scripps Institution of Oceanography, La Jolla, CA, USA, 9 May 2016.

- **Morgan, E.**; Lavrič, J.; Arévalo-Martínez, D.L.; Bange, H.W., Steinhoff, T.; Seifert, T.; Heimann, M. "The Influence of Coastal Upwelling on the Variability of Greenhouse Gases and Atmospheric Oxygen

at Gobabeb, Namibia". Invited Seminar, NOAA/ESRL Global Monitoring Division Carbon Cycle and Greenhouse Gases Group, Boulder, CO, USA, 12 April 2016.

- **Morgan, E.**; Lavrič, J.; Heimann, M. "Seasonal Anomalies of Carbon Dioxide, Methane, and Carbon Monoxide at the Namib Desert Atmospheric Observatory". Invited Seminar, Scripps Institution of Oceanography, La Jolla, CA, USA, 10 September 2014.

- **Morgan, E.**; Lavrič, J.; Heimann, M. "The Spatial and Temporal Representativeness of Atmospheric Observations of Greenhouse Gases at the Namib Desert Atmospheric Observatory". *Geophysical Research Abstracts*, Vol.16, EGU2014-5934. European Geosciences Union (EGU) General Assembly, Vienna, Austria, 28 April 2014.

- **Morgan, E.**; Lavrič, J.; Seely, M.; Heimann, M. "Continuous Measurements of Greenhouse Gases and Related Tracers in the Namib Desert". 29th Annual Conference of the South African Society for Atmospheric Sciences (SASAS), Durban, South Africa, 26 September 2013.

- **Morgan, E.**; Seifert, T.; Lavrič, J. "Diurnal and Intraseasonal Variability of Greenhouse Gases in the Namib Desert". Invited Seminar, Council for Scientific and Industrial Research (CSIR) Natural Resources and the Environment, Cape Town, South Africa, 19 September 2013.

- **Morgan, E.** and Lohmann, R. "Determining the Sources of Polychlorinated Biphenyls to Demersal Fish in Narragansett Bay, R.I., USA". ICES CM 2007/J:15. International Council for the Exploration of the Sea (ICES) Annual Science Conference, Helsinki, Finland, September 2007.

Posters

- **Morgan, E.**; Lavrič, J.; Gerbig, C., Koch, T.; Heimann, M. "Diurnal and Synoptic Variability of Carbon Dioxide and Related Tracers in the Namib Desert". P193. 9th International Carbon Dioxide Conference, Beijing, China, 4 June 2013.

- **Morgan, E.**; Lavrič, J.; Seely, M.; Heimann, M. "The Namib Desert Atmospheric Observatory (NDAO), a new background site for continuous measurements of greenhouse gases and related tracers in southern Africa". 17th WMO/IAEA Meeting on Carbon Dioxide, Other Greenhouse Gases, and Related Measurement Techniques (GGMT-2013), Beijing, China, 13 June 2013.

- **Morgan, E.**; Lavrič, J.; Seely, M.; Heimann, M. "Establishment of an atmospheric observatory for trace gases and atmospheric oxygen in Namibia". *Geophysical Research Abstracts*, Vol.14, EGU2012-5122. European Geosciences Union General Assembly, Vienna, Austria, 24 April 2012.

- **Morgan, E.** and Lohmann, R. "Passive Sampling of Persistent Organic Pollutants in an Urbanized Estuary: Contributions from Different Reservoirs". 7th Passive Sampling Workshop and Symposium at USGS in Reston, VA, USA, April 2007.

- **Morgan, E.**; MacAvoy, S.; Carney, R. "Importance of Chemolithoautotrophic Production to Mobile Benthic Predators in the Gulf of Mexico". *Eos, Transactions American Geophysical Union*, Joint Assembly Supplemental Abstracts, 86(18), JH51E-01. American Geophysical Union (AGU) Joint Assembly, New Orleans, LA, May 2005.