
Michael Brody

Areas of Qualification

Committed educator and a subject matter expert in the environmental sciences, with specific knowledge of environmental health, assessment and policy, environmental futures, climate change, and international environmental capacity building

Employment History

Academia

- US Fulbright Program
 - Fulbright Short Term Specialist to Tyumen State University, Russia, Summer 2019
 - Fulbright Scholar to the National University of Uzbekistan, Tashkent; September 2017 – January 2018.
 - Taught short courses on Climate Change, Pollution & Health
 - Lectured at 8 regional universities across Uzbekistan
 - Presented at International Workshop on *Innovations in Marginal Water Resources Use for Resilient Agriculture and Food Security*, Tashkent
- Adjunct Professor, Department of Environmental Science, and Senior Research Fellow, Center for Environmental Policy, American University, Washington, DC, 2012–present (ongoing)
 - Teach courses, *Environmental Risk Assessment, & Climate Science and Risk*
- Visiting Professor, Kazakh National Agrarian University, Almaty, 2019 & 2014
 - Taught a 2-week course “Green Economy – Climate Change, Renewable Energy” to a group of 15 students from 4 countries at KazNAU’s Winter International School.
 - In 2014 taught 2-week intensive inter-disciplinary course on global environmental issues, pollution and climate change to regular KazNAU students
- Visiting Professor, American University of Central Asia, Bishkek, Kyrgyzstan – Summer 2018
 - Member of scientific organizing committee for *Conservation Asia 2018*, held at AUCA, August 2018; (Asian chapter of the Society for Conservation Biology)
 - Organized & presented at panel on Climate Change in Central Asia
 - Developed curriculum for a future Master’s in Environmental Science
 - Ongoing cooperation for research grants in the area of air pollution and health
- Review Editor, UN Environment Program, Global Environmental Outlook – *GEO 6*
- Visiting Lecturer, Department of Geography, Belarus State University, Minsk, February 2018
- Visiting Professor, Siberian Federal University, Krasnoyarsk, Russia. Taught introduction to climate science and environmental risk assessment in field program; July 2017.
- Visiting Professor, Kazakh National Medical University, Almaty, Kazakhstan, 2011–2014

- Created curricula & taught short-term intensive courses on environmental risk assessment
- Scientific advisor for a graduate student
- Lectured to various classes on numerous environmental topics such as climate change and health, nanotechnology and the environment
- Lectured at University conferences & workshops on topics such as air quality monitoring and management, risk assessment of pesticide use, nanotechnology & the environment
- Guest lecturer and consultant in Uzbekistan on environmental issues, 2014-2016
 - Meetings on environmental issues with Universities, National Academy of Sciences, Uzbek Environmental Agencies, NGO
- Coordinating Lead Author (one of several) for UN Environment Programme GEO-6; 6th *Global Environmental Outlook*, North American Region (2015-2016)
 - Analyzed long-term environmental consequences from technology change, population and economic growth
- Facilitator, Global Environmental Issues, *Global Village*, Lehigh University, Bethlehem, PA, July 2015
 - Led half-day session on global environmental issues for a group of international business students at Lehigh for a leadership training program
- Professor/Trainer, CRDF Global, *English for Specific Purposes*, Petrozavodsk and Archangelsk, Russia, 2013 (as part of team of trainers)
 - Designed short course on environmental issues in Russia to help young researchers improve their English communication and presentation skills for international conferences and journals
 - Used readings from newspapers and websites on Russian environmental issues to facilitate case study, team-based exercises in English
 - Assigned and evaluated seminar presentations
- Speaker, *Climate Change & Sustainability*, Public Diplomacy Program, US Department of State, Indonesia, October 2013
 - Gave presentations and led discussions at Universities, Government Agencies, NGOs and a high school, during a 2-week period across Indonesia

Academic/Technical Conference and Workshop Participation:

- Invited Speaker, *Water Resources Management in Central Asia*, to be held at the American University of Central Asia, Bishkek, Kyrgyzstan, June 2019
- Member of Scientific Committee, Panel Organizer & Presenter, *Conservation Asia 2018*, Society of Conservation Biology, Asia Chapter, August 2018, held at American University of Central Asia, Bishkek, Kyrgyzstan
- Association of Environmental Studies and Sciences (AESS) 2018 (held at AU). Panel chair and presenter - *Innovative Curriculum in Environmental Sciences*

- Clean Air Roundtable, International Clean Air Awareness Week, Lead technical presenter, Bishkek, April 2018
- American Studies Symposium, International University of Kyrgyzstan, Bishkek, May 2018
- Keynote Presenter, International Visitors Leadership Program, April 2018, Washington DC (IVLP tour organized by World Learning)
- Presenter, International Workshop on *Innovations in Marginal Water Resources Use for Resilient Agriculture and Food Security*, Tashkent, Uzbekistan, December 2017
- Member organizing committee for AESS 2016 meeting held at AU; organized and moderated panel on climate finance, speaker on environmental outlooks on a second panel
- Member of organizing committee, *Workshop on Biodiversity and Climate Change*, Nazarbayev University, Astana, Kazakhstan, April 2015
 - Presentation on status of climate change in Central Asia
- Moderator for panel, *Food Security and Gender in Kazakhstan*, annual meeting, Central Eurasian Studies Society, November 2016, Princeton University
- Member of organizing committee for the conference at hosted by the AU Center for Israel Studies, “Israel and Water Scarcity, Innovation and Cooperation” March 2014

Consulting

- Short Term Consultant, World Bank, Washington DC (periodic)
 - Analysis of environmental degradation in the Lao PDR (2018-2019, ongoing)
 - Analysis of air pollution effects in the Western Balkans & Poland (2018)
 - Analysis of environmental degradation in Bolivia (2015 – 2016)
 - Organized seminars on air quality monitoring & indoor air pollution
- Associate/Scientist, Abt Associates, Bethesda, MD, 2012–2017 (& formerly Stratus Consulting)
- Environmental Defense Fund – supported an EPA funded Methane to Markets project in Russia. 2012-2013
- Picarro, Inc. – marketing advanced sensor technologies to potential clients in Russia. 2012
- Consultant, Center for Ecological Innovation, Moscow, Russia, 2012

US Federal Government

- Senior Environmental Scientist, U.S. Environmental Protection Agency, Washington, DC, 1989 - 2012
- Fishery Biologist, U.S. Department of the Interior/Minerals Management Service, Vienna, VA, 1988–1989
- Biological Oceanographer, U.S. Fish and Wildlife Service, Slidell, LA, 1983–1988

- Texas A&M Sea Grant Fellow, National Oceanic and Atmospheric Administration, Washington, DC, 1982–1983
- **Education**
 - University of Texas, PhD, Zoology/Ecology, 1980
 - University of Michigan, BS, Zoology, 1972

Professional Experience

Dr. Brody has broad international scientific networking experience with a focus on the former Soviet Union, especially Russia, Ukraine, Kazakhstan, Uzbekistan and Kyrgyzstan, as well as Africa. He has extensive public and private sector consulting experience, having partnered with the World Bank, the United States Agency for International Development (USAID), the State Department, the Organization for Economic Co-operation and Development (OECD), the United Nations Environment Programme (UNEP), the North American Commission for Environmental Cooperation (NACEC), and Governments in Africa and Eastern Europe. He organized the groundbreaking *Technology Market Summit*, a cooperative effort of the EPA and American University to better mobilize private capital in support of the environment. Dr. Brody was an invited speaker to the Environmental Defense Fund/EPA workshop on global methane and the natural gas industry held in October 2012 in Moscow, Russia.

As a consultant for the Center for Ecological Innovation, Dr. Brody provided expert guidance on a Russian sustainable forestry project for Russian environmental and forestry scientists, economists, and journalists. He made presentations to media and youth forums on the climate change situation in the United States with an emphasis on forestry issues and the federal government response to date.

For the EPA

- Served as senior agency/interagency expert advisor on environmental risk assessment & management, environmental futures, technology-driven environmental changes, and advanced strategic planning tools. Invited participant to the USAID/State Department Symposium on Future Development Challenges. Invited consultant to the State Department's Project Horizon; provided expert advice on environmental futures and strategic planning. Organized EPA-wide futures network & conducted training in futures methods, and co-led EPA futures scenario project.
- Led the emerging issues team for EPA Strategic Plans 2006–2011 and 2009–2015. Planned, organized, and led EPA workshops focusing on new technologies. Chaired panels on

emerging technologies and issues, EPA Innovations Symposium, and National Council of Science and the Environment meetings, 2005–2006.

- Served as expert international environmental project advisor with field experience in 17 countries. Designed and managed environmental capacity-building project with Government of Ukraine to modernize policies and approaches to environmental protection. Created Center for Environmental Health Risk Assessment in Kyiv, Ukraine. Served as advisor to World Bank for a project to disseminate EPA risk-based planning methods in Ukraine.
- Designed and provided ongoing expert oversight of civilian environmental research project with scientists from former chemical weapons institute in Russia, under the auspices of the International Science and Technology Center in Moscow.
- Member of the U.S. Delegation to the UN Economic Commission for Europe Environment for Europe Ministerial Meeting in Kiev, Ukraine, 2003. Invited speaker at the World Bank side event; presented on use of risk assessment to set environmental priorities. Organized U.S. government-led panel discussion on environmental projects in Ukraine.
- Developed U.S. positions and recommendations for Organization of Economic Cooperation and Development's *Environmental Strategy for the First Decade of the 21st Century* and for the 2001 Environment Ministerial Meeting in Paris
- Chaired *Emerging Trends in North America* project, North American Commission for Environmental Cooperation, Montreal, Canada.
- International Environmental Capacity Building - Organized/delivered training in regulatory risk assessment/management and cost-benefit analysis for participants in the Czech Republic, Poland, Slovak Republic, and Indonesia.
- International Climate Change Projects - managed cooperative agreements and monitored projects with governments of Tanzania and Malawi for interagency U.S. Country Studies Global Climate Change Programs. Primary author of published methodological guidance for the assessment of climate change effects on fisheries for both the U.S. Country Studies Program and the United Nations Environment Programme. Developed and delivered training course in fisheries assessment and climate change in Zimbabwe.

Recent Presentations on Air Pollution & Climate Change

- Clean Air Roundtable, Bishkek, Kyrgyzstan, May 2018

- Climate Change in Central Asia, Bishkek, Kyrgyzstan, May 2018
- Air Pollution & Health, Climate Change, Core part of Fulbright curriculum, Uzbekistan, 2017
- General Science of Climate Change, Siberian Federal University, July 2017
- Indoor Air Pollution, World Bank, 2016 - 2017
- Air Quality Monitoring, World Bank, 2016

Foreign Languages

- Working ability in Russian, including lectures and periodic scientific translation

Publications

- Golub A. & Brody M. 2017. Uncertainty, climate change, and irreversible environmental effects: application of real options to environmental benefit-cost analysis. *J Environ Stud Sci* DOI 10.1007/s13412-017-0436-7
- UNEP. 2016. GEO-6 Regional Assessment for North America. United Nations Environment Programme, Nairobi, Kenya. [Coordinating lead author for Chapter 4, Contributing author, Chapters 1 & 3].
- Brody M., Golub A., 2014. Improving Air Quality and Health in Kazakhstan: Monitoring, Risk Assessment and Management. In: *Vestnik KazNMU*, #3(1). Kazakh National Medical University. Almaty, Kazakhstan.
- Caldwell J., Serdyuk A., Turos O., Petrosian A., Kartavtsev O., Avaliani S., Golub A., Strukova E., Brody M. 2013. Risk Assessment Capacity Building Program in Zaporizhzhia Ukraine: Emissions Inventory Construction, Ambient modeling, and Hazard Results. *J. Env. Prot.* 4, doi:10.4236/jep. 2013
- Kenessariyev U., Golub A., Brody M., Dosmukhametov A., Amrin M., Erzhanova A., Kenessary D., 2013. Human Health Cost of Air Pollution in Kazakhstan. *J. Env. Prot.* 4, 869-876 doi:10.4236/jep.2013.48101
- Brody, M., Caldwell, J. & A. Golub. 2007. Developing Risk-based Priorities for Reducing Air Pollution in Urban Settings in Ukraine; in: *Strategies for Clean Air and Health (2005)*. L. Craig, D. Krewski, J. Shortreed, J. Samet (eds.) Proceedings of the AIRNET Annual Conference/NERAM International Colloquium Nov. 5-7, 2003, Rome, Italy. pp. 268. ISBN 0-9684982-4-8
- Gallagher, K., Benson, W.H., Brody, M., Fairbrother, A., Hasan, J., Klaper, R., Lattier, D., Lundquist, S., McCarroll, N., Miller, G., Preston, J., Sayre, P., Seed, J., Smith, B., Street, A.,

- Troast, R., Vu, V., Reiter, L., Farland, W., Dearfield, K. 2006. Genomics: Applications, Challenges and Opportunities for the U.S. EPA. *Human and Ecological Risk Assessment* 12(3):572-590.
- Brody, M., Hlohowskyj, I. 1998. Fisheries; in: *Handbook on Methods for Climate Change Impact Assessment and Adaptation Strategies*. UN Environment Programme. Version 2.0
 - Brody, M, Hlohowskyj, I., & R. Lackey. 1996. Fisheries Vulnerability and Adaptation Assessment. In: *Vulnerability and Adaptation Assessments: An International Handbook*. Benioff, R., Guill, S., & J. Lee (eds.) Environmental Science and Technology Library. Kluwer Academic Publishers. Boston.
 - Brody, M., 1996. Development and Evaluation of Adaptation Measures for Fisheries. Ch. 4.10 in: Benioff, R. & Warren, J. *Steps in Preparing Climate Change Plans: A Handbook*. U. S. Country Studies Program. V 1.0. Washington DC.
 - Hlohowski, I., Brody, M. & R. Lackey. 1996. Methods for assessing the vulnerability of African fisheries resources to climate change. *Journal of Climate Research* 6:97-106.
 - Bingham, G., Bishop R., Brody, M. et al. 1995. Issues in ecosystem valuation: improving information for decision making. *Ecological Economics* 14:73-90
 - Brody, M. & MJ Kealy, (eds.) 1995. Foreword to Special Issue: Issues in ecosystem valuation: improving information for decision making. *Ecological Economics* 14:67-70.
 - Heinz, G, Brody, M. & L. Blus. 1994. How valuable are the results of models and laboratory studies when extended to field situations? Chapter 52 in: *Wildlife Toxicology and Population Modeling: Integrated Studies of Agroecosystems*, R.J. Kendall and T.E. Lacher, Jr., Eds., Lewis Publishers, Chelsea, MI.”
 - Brody, M.S. 1991. Variation in reproductive effort in the isopod, *Armadillidium vulgare*. In: *Crustacean Issues Vol (7): Crustacean Egg Production*. Wenner, A. & A. Kuris (eds.). A.A. Balkema, Rotterdam.
 - Soniat, T., L.E. Smith, and M. Brody. 1989. Mortality and condition of the American oyster in Galveston Bay. *Contributions in Marine Science* 31:77-94.
 - Conner, W.H. and M.S. Brody. 1989. Rising water levels and the future of southeastern Louisiana's swamp forests. *Estuaries* 12:318-323.
 - Brody, M., L. Pearlstine, W. Conner, and W. Kitchens. 1988. Modeling bottomland forest and wildlife habitat changes in Louisiana's Atchafalaya Basin. In: Sharitz, R.R. and J.W. Gibbons (eds.). *Freshwater wetlands and wildlife: Perspectives on natural, managed and degraded ecosystems*. DOE-CONF 860326. Office of Scientific and Technical Information, U.S. Department of Energy, Oak Ridge, TN.
 - Soniat, T. and M. Brody. 1988. Field validation of a habitat suitability index model for the American oyster. *Estuaries* 11:87-95.

Environmental Protection Agency & Government Reports

- Nanotechnology White Paper. Report to the Science Policy Council, US Environmental

- Protection Agency. Washington DC. February 2007. (EPA 100-B-07/001).
- Potential Implications of Genomics for Regulatory and Risk Assessment Applications at EPA. Prepared for the US Environmental Protection Agency by members of the Genomics Task Force, a workgroup of EPA's Science Policy Council. EPA 100/B-04/002. December 2004. Washington, DC 20460. (co-author)
 - Managing Ecological Risks at EPA: Issues and Recommendations for Progress. (EPA/600/R-94/183) (co-author)
 - Ecological Risk: A Primer for Risk Managers (EPA 734-R-95-001) (co-author)
 - Modeling future losses of bottomland forest wetlands and changes in wildlife habitat within a Louisiana basin. In: A Review of Ecological Assessment Case Studies from a Risk Assessment Perspective (EPA/630/R-92/005). (co-author)
 - Framework for Ecological Risk Assessment. February 1992. (EPA/630/R-92/001). (co-author)
 - Turner, R.E. and M.S. Brody. 1983. Habitat suitability index models: Northern Gulf of Mexico brown shrimp and white shrimp. U.S. Dept. of Interior. Fish Wildl. Serv. FWS/OBS-82/10.54. 24 pp.