BIOGRAPHICAL SKETCH

SIGMA XI NOMINATION	Dr. Elizabeth L. Ambos

A. PROFESSIONAL PREPARATION

Smith College	Northampton, MA	Geology (*magna cum laude)*	A.B.	1977
University of Hawai'i – Mānoa	Honolulu, HI	Marine Geology & Geophysics	M.S.	1980
University of Hawai'i – Mānoa	Honolulu, HI	Marine Geology & Geophysics	Ph.D.	1984
U.S. Geological Survey NRC Post-Doctoral Awardee	Menlo Park, CA	Exploration Seismology	1984-1986	
University of Southern California Post-Doctoral Appointment	Los Angeles, CA	Exploration Seismology	1985-1988	

B. APPOINTMENTS

Independent Consultant – Ambos Consulting	(2019-present)
Council on Undergraduate Research (Washington, DC) Executive Officer	(2012-2019)
California State University (including Long Beach (LB)) (Various, CA)	(1989-2012)
Assistant Vice Chancellor for Research Initiatives and Partnerships	(2006-2012)
Associate Vice President for Research and External Support (LB)	(2003-2007)
Professor of Geological Sciences (LB)	(1998-2012)
Acting Dean of Graduate Studies (LB)	(2002-2003)
Associate Dean for Academic Initiatives (LB)	(2001-2003)
Acting Associate Dean for Instruction (LB)	(1998-2001)
Associate Professor of Geological Sciences (LB)	(1993-1998)
Assistant Professor of Geological Sciences (LB)	(1989-1993)
National Science Foundation, Ocean Drilling Program (Arlington, VA)	
Associate Program Director	(1992-1993)
GeoResearch, Staff Geologist (LB)	(1987-1989)

C. REPRESENTATIVE PUBLICATIONS

1. Malachowski, M., **Ambos, E. L.**, Karukstis, K., Kinzie, J., & Osborn, J. (Eds.). 2024. *Transforming Academic Culture and Curriculum: Integrating and Scaffolding Research throughout Undergraduate Education.* Routledge, https://www.routledge.com/9781032581675.
2. Mieg, H., **Ambos, E. L**., Brew, A., Galli, D., & Lehmann, J. (Eds.). 2022. *The Cambridge Handbook of Undergraduate Research*. Cambridge University Press, https://doi.org/10.1017/9781108869508
3. Malachowski, M., Osborn, J., Karukstis, K., Kinzie, J., & **Ambos, E. L.** 2020. "Scaffolding Research into Undergraduate STEM Curricula and Cultures: An Emerging Model for Systemic Change." In: White, K., Beach, A., Finkelstein, N., Henderson, C., Simkins, S., Slakey, L., Stains, M., Weaver, C., & Whitehead, L. (Eds.) *Transforming Institutions: Accelerating Systemic Change in Higher Education.* http://openbooks.library.umass.edu/ascnti2020/chapter/malachowski-etal/
4. **Ambos, E. L.**, 2020. "Undergraduate Research in the United Status: Diversity, Growth, and Challenges", in: Nancy H. Hensel and Patrick Blessinger (Eds.), *International Perspectives on Undergraduate Research*, Palgrave Macmillan, pp. 19-38. https://doi.org/10.1007/978-3-030-53559-9
5. **Ambos, E. L.,** 2015." Promoting Student Engagement", in *Operationalizing Stewards of Place: Implementing Regional Engagement and Economic Development Strategies* (Richard Dunfee and Ashish Vaidya (Eds). American Association of State Colleges and Universities (AASCU). http://www.aascu.org/FreePublications/
6. Malachowski, M., Osborn, J., Karukstis, K., & **Ambos, E. L.** (Eds). 2015. "Enhancing and Expanding Undergraduate Research: A Systems Approach." *New Directions for Higher Education*, San Francisco, CA, no. 169, https://doi.org/10.1021/bk-2018-1275.ch015 .

7. **Ambos, E. L.**, Wiley, M., and Allen, T. 2008. “Romancing the Muse: Faculty Writing Institutes as Professional Development”, *To Improve the Academy*, Jossey-Bass, v. 27, pp. 135-149.
8. Wechsler, S., Whitney, D. J., **Ambos, E. L**., Rodrigue, C. M., Lee, C. T., Behl, R. J., Larson, D. O., Francis, R. D., and Holk, G. 2005. “Enhancing Diversity in the Geosciences”, *Journal of Geography*, 104, 4 (July/August), pp. 141-149.
9. Arnold, J. E., **Ambos, E. L.**, and Larson, D. O. 1997. “Geophysical Surveys of Stratigraphically Complex Island California Sites, New Implications for Household Archaeology”, *Antiquity*, V. 71, pp. 157-168.
10. **Ambos, E. L.**, Mooney, W. D., and Fuis, G.S. 1995. “Seismic Refraction Measurements Within the Peninsular terrane, South Central Alaska”, *Jour. Geophys. Res*., v. 100, pp. 4079-4095.
11. Fryer, P., **Ambos, E. L.**, and Hussong, D. M. 1985. “Origin and Emplacement of Mariana Forearc System Seamounts”, *Geology*, 13, pp. 774 777.

D. Research Leadership (Grants – last 10 years)

2016 **Ambos, E. L.**, and Malachowski, M., Osborn, J., Karukstis, K., and Kinzie, J., Integrating and Scaffolding Research into Undergraduate STEM Curricula: Probing Faculty, Student, Disciplinary, and Institutional Pathways to Transformational Change, NSF-DUE 16-25354, $1,400,435, 2016-2023.

2016 Genet, R., Kenney, J., **Ambos, E. L**., and Collins, D., Student Research Within Communities of Practice, NSF-DUE 16-10350, $298,949, 2016-2019.

2015 **Ambos, E.L.**, COLLABORATIVE RESEARCH: WIDER: Improving Undergraduate Education Through Community Building and Adoption of an Evidence-Based Practice to Evaluate Undergraduate Research, NSF-DUE 13-47727, $127,273, 2015-2019.

E. Leadership and Professionalism: Synergistic Activities

1. My tenure at CUR encompassed design and implementation of two successive strategic plans, completion of a merger with another organization, building an international network of colleagues devoted to research advancement, and substantial growth and diversification of the organization’s advocacy initiatives, programming, membership, and assets. Undergraduate research is a signature high-impact practice that provides substantial benefits to students, increasing retention, graduation, and post-graduate aspirations. CUR seeks to broaden access to undergraduate research through various strategies, such as pan-disciplinary research and scaffolding research throughout the curriculum.
2. Over the last three decades I have designed and implemented more than 90 professional development events for higher education faculty and administrators, on diverse topics, including scholarly writing, undergraduate research, research compliance, and grant proposal preparation; and served as PI or CO-PI on multiple grants from the NSF and NASA.
3. I have co-led a variety of undergraduate research-related programs, including summer intensive research experiences in geosciences (including geography and archaeology), and the Southern California Conferences for Undergraduate Research (SCCUR).
4. I have managed academic research compliance functions at two academic institutions, and have expertise in human subjects’ protocols, research integrity and ethics, and other areas pertinent to professional development needs in STEM research and education topics.
5. Long-standing engagement with digital learning approaches, including work with NSDL (National Science Digital Library) and MERLOT (Multimedia Educational Resources for Learning and Teaching), Co-led the creation of a MERLOT (http://www.merlot.org) learning community for NSF-funded Robert Noyce Scholars from 2008-2012.

F. Commitment to Diversity and Inclusiveness

A consistent theme of my career has been deep engagement with diversity, inclusion, and equity initiatives and outcomes. In addition to the work with undergraduate research, my teaching and administration at CSU Long Beach included collaboration with disabled student support systems. My work as Associate Vice President of Research at CSU Long Beach led to the first Title V grant for the institution, establishing it formally as a Hispanic-Serving Institution. In addition, I provided administrative support for CSU Long Beach's NAGPRA committee, leading to substantial repatriation of tribal artifacts. While serving as CUR's Executive Officer I was honored to be part of the expert committee for ARIS, and the advisory committees for the Community College Undergraduate Research Initiative (CCURI) and the Pell Institute of the Council for Opportunity in Education.

G. MENTORING

Another career theme that threads through my endeavors is the importance of mentorship, of students, and also of faculty and administrative colleagues. In addition to mentoring undergraduates in independent study, and graduate students in their thesis work, I worked with a team of geology, geography, and archaeology colleagues to bring a major NSF award to the CSU Long Beach campus. The Geoscience Diversity Enhancement Program (GDEP) provided mentored interdisciplinary undergraduate summer research experiences for historically underrepresented students and faculty colleagues at area community colleges and high schools. Regarding faculty mentorship, while at CSU Long Beach, I co-created a faculty scholarly writing institute that provided supportive mentoring and editing experiences for faculty engaged in writing research grants and peer-reviewed journal articles. While at the CSU Chancellor's office, I worked across the 23-campus system to provide a number of grant writing and coaching institutes and co-created several research-themed affinity groups for faculty of similar disciplines (a prominent example is the COAST initiative).

H. MAJOR AWARDS, FELLOWSHIPS, INVITED LECTURESHIPS, AND HONORS

2023–2025	**Associate Director**, AGISFL Constituency, Sigma Xi
2016–2020	**Advisory Committee member,** Pell Institute
2015–2019	**Steering Committee**, World Congress on Undergraduate Research
2013–2019	**Steering Committee**, Australasian Conference for Undergraduate Research
2008–2010	**Chair** (elected), Board of the Southern California Conferences for Undergraduate Research (SCCUR); also served on SCCUR board from 2004-2010
2001–2003	**Chair of Steering Committee** (elected) for DLESE (Digital Library for Earth System Education); also served as member of DLESE Steering Committee (1999-2003)
1994–2000	**Director-at-Large** Sigma Xi
1994–1995	**NASA-ASEE Summer Faculty Fellow**

I. MAJOR CAREER CONTRIBUTIONS AND LEGACY

- **SOME SIGNIFICANT RESEARCH FINDINGS**: part of team that first proposed the existence of low-velocity/serpentinized zones in forearcs (Doctoral work – e.g. Ref. #11), as well as unveiling complex subduction-zone related structures in Alaskan crust and upper mantle (post-doctoral work – e.g. Ref. #10). One of the first researchers routinely applying ground-penetrating radar to archaeological investigations (e.g. Ref. #9).

- **ESTABLISHMENT OF SIGNIFICANT INSTITUTIONS**: helped establish the Southern California Conferences for Undergraduate Research (SCCUR); was the founding assistant vice chancellor for research for the CSU system, leading the organization of research affinity groups, as well as collaborative grant-acquisition and research management activities.

- **INFLUENCE ON SCIENTIFIC POLICY WITH NATIONAL OR GLOBAL IMPACT:** while at CUR, I was invited to give testimony at several National Research Council meetings on the importance of undergraduate research investments, particularly for underrepresented groups. Also, I was a co-founder of the World Congress on Undergraduate Research. The first Congress was held at Qatar University in 2016, the second at University of Oldenburg in 2019, and after a Covid-related hiatus, the third congress was held at the University of Warwick in 2023.