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PROFESSIONAL SUMMARY

More than 45 years of experience leading and managing professional projects, including: directing Civil Applications Committee; organizing and operating US House of Representatives Oceans Caucus; directing National Research Council's Polar Research Board; serving as vice president and chief scientist of a geological consulting company; and conducting terrestrial and marine scientific and monitoring investigations related to understanding Earth surface processes, environmental protection, global change investigations, and natural hazards response.

More than 30 years of experience in a variety of positions serving in multiple capacities representing Federal Civil Community and Department of the Interior interests in interactions with the Intelligence Community.

More than 50 years of experience conducting remote sensing, geological, geophysical, and marine research, and leading field investigations and remote expeditions at multiple locations around the world, including Antarctica, Alaska, the Arctic, Indonesia, and Hawaii.

Extensive editing, writing, and public speaking experience including for 10 years serving as Editor for the Geological Society of America's (GSA) monthly news-magazine *GSA Today*, Arctic Council Web Master, authoring or co-authoring more than 450 peer reviewed abstracts, maps, journal articles, reports, websites, DVDs, and books; and preparing and presenting more than 200 public lectures in a broad and diverse variety of venues.

Adjunct and visiting professor experience, during a period spanning 50 years, teaching classroom and online university-level remote sensing and geology courses and laboratories at five universities.

Links to five Molnia Public Lectures presented in 2003, 2008, 2009, 2016, and 2017 are below:

2017 - <https://www.usgs.gov/media/videos/usgs-public-lecture-warm-ice-dynamics-rapidly-changing-glaciers>

2016 - <https://youtu.be/q6Npu0xGSIA>

2009 - <https://www.usgs.gov/media/videos/usgs-public-lecture-series-baked-alaska-whats-happening-glaciers-alaska>

2008 - <https://www.usgs.gov/media/videos/pubtalk-22008-alaskas-rivers-ice>

2003 - <https://www.usgs.gov/media/videos/pubtalk-122003-whats-happening-alaskas-glaciers>

PROFESSIONAL EXPERIENCE

US Geological Survey (USGS), Department of the Interior (DOI), 12/1983 – Present
Senior Science Advisor for National Civil Applications, Reston, VA – 12/2013 – Present:
(2013-2016 – full-time employee; 2016-2019 – National Defense Authorization Act (NDAA) intermittent employee; June 2019 – present – USGS Emeritus Program)

- Support Chief, National Civil Applications Center (NCAC) and USGS Senior Management with respect to issues related to remote sensing, civil applications, and Federal Civil Community – Intelligence Community interactions.
- Provide advice on and participate in the use of remotely-sensed geospatial data from multiple sources, including open sources, commercial vendors, and US National Imagery Systems for use in Federal Agency scientific and geospatial research and mission area activities.
- Develop presentations and training to inform and educate Federal Civil Community scientists and researchers and the external community about the benefits resulting from the use of US National Imagery Systems Data and related geospatial data in accomplishing Agency missions.
- Facilitate and coordinate research activities of a group of US Government scientists and image analysts.
- Support Global Fiducials Program Working Group activities and participate in interagency committees such as Environmental Security Working Group (ESWG), Historical Imagery Declassification Panel, and *Geospatial Intelligence Review* Editorial Board.
- Organize and lead field investigations and digital remote-sensing investigations in support of Global Fiducials Program at select locations, including: Malaspina Glacier, Alaska; Bering Glacier, Alaska; Glacier Bay, Alaska; Fire Island National Seashore, NY; and East Timbalier Island, LA.

Executive Director, Civil Applications Committee (CAC), Reston, Virginia – 3/2006 - 12/2013

- Directed activities of the interagency committee that serves as liaison between Federal Civil Community and Defense and Intelligence Community concerning use and access to US National Imagery Systems Data and resources.
- Ensured that access to US National Imagery Systems Data protected sources and methods; did not violate civil rights, civil liberties and personal privacy of US citizens; and occurred in an efficient and timely manner.
- Managed a \$2M annual budget and a staff of as many as eight.
- Ensured that CAC members had access to near-real-time data and information for conducting agency missions, planning, and responding to national and international natural disasters such as wildfires, earthquakes, and volcanic eruptions.
- Participated in US Department of State Environmental Bilateral Agreement with the Government of Chile, serving as a Subject Matter Expert on glaciers and water resources (2009-2014)

Senior Research Geologist, Reston, Virginia – 6/2002 - 3/2006

- Conducted both classified and unclassified research regarding Earth surface dynamics, climate change, coastal and shallow marine processes, fiord and glacial-marine sedimentation, temperate glaciers, and remote sensing, using multiple data sources and multi-media for outreach and information distribution.

Senior Legislative Fellow, Oceans Caucus, US House of Representatives, Washington, DC, 3/1999 - 6/2002

- Detailed by the Office of the Secretary of the Interior to the Office of Congressman Curt Weldon (R – PA) to provide scientific expertise and to organize and operate the House of Representatives Oceans Caucus.
- During the 106th and 107th Congresses, launched the Ocean Caucus to establish policy and provide information to Congress about critical ocean issues including national security, international borders, sustainable fisheries, and oceanographic research.

USGS International Programs, Deputy Chief, Office of the Chief Geologist, USGS, Reston, VA 10/1987 - 6/2002

- Developed more than a dozen new international cooperative programs and implemented international agreements;
- Represented USGS and the DOI on interagency and international committees on environment, Arctic policy, global change, Antarctic environmental protection, remote sensing, ocean pollution, and international data management.
- Arctic Council Web Master – 1999-2000
- Developed and coordinated a US-Canada-Mexico tri-lateral agreement focused on sharing data across the three countries and produced a borderless aeromagnetic map of North America.
- Coordinated the Federal Government remote sensing investigation of damage caused by Hurricane Mitch; directed global change research activities; and organized and chaired three international Arctic workshops dealing with pollution and radioactive waste.

Senior Program Officer & Acting Executive Director, Polar Research Board (PRB), National Research Council (NRC), National Academy of Sciences, Washington, D.C. 4/1985 - 10/1987

- Loaned to NRC by USGS Director under an Interdepartmental Personnel Act (IPA) agreement to directed activities of the NRC's polar research advisory group, its twelve-member board, and multiple working groups.
- Responsible for initiating, planning, organizing, and conducting studies used by Federal Agencies, and field monitoring, investigations, and expeditions.
- Antarctic Treaty Nations, the Scientific Committee on Antarctic Research and private foundations; responsible for the activities of NRC Committee on Permafrost, Committee on Glaciology, Committee on Remote Sensing of Ice and Snow, Committee on Polar Ocean Research Platforms, and Committee on Arctic Solid-Earth Geosciences.

Deputy Chief for Data Production and Distribution, USGS Earth Resources Observation Systems (EROS) Data Center, Sioux Falls, SD 12/1983 - 4/1985

- Managed day-to-day activities of 100 employees involved in digital mapping, and the processing and distribution of satellite imagery and aerial photography products.
- Responsible for the acquisition and management of large digital geochemical and geophysical data bases (RASS and NURE), evaluation of new remote sensing technologies and instrumentation - Side Looking Airborne Radar (SLAR), Large Format Camera (LFC), video data storage, etc., and in the marketing and public awareness of USGS remote sensing programs and products.

Marine Environmental Science Associates, Inc. (MESA²), Northridge, CA 2/1982 - 12/1983

Vice President and Chief Geologist

- Managed day-to-day activities of more than 50 employees involved in digital mapping, and the processing and interpretation of marine seismic and geophysical data, satellite imagery, and aerial photography.
- Performed marine geophysical and geological consulting and research, marine regional and site-specific mapping, marine surveying, hazards analysis, studies for platform and pipeline installations, and evaluations of resource potential of offshore oil and gas lease sale areas.

US Geological Survey (USGS), Department of the Interior (DOI), 7/1974 - 2/1982
Research Geologist, Menlo Park, California

- As Chief Scientist of Environmental Studies of the Eastern Gulf of Alaska and North Aleutian Shelf Projects, planned, managed, participated in, and analyzed results from marine geological and geophysical research projects and cruises / field studies in the Gulf of Alaska, Bering Sea, and Alaskan coastal zone environments.
- Research included analysis of the geology of Alaskan continental margin, interpretation of coastal and offshore processes, remote sensing, assessment of marine mineral resources, definition and identification of marine geohazards, sea floor mapping, producing side-scan-sonar mosaics, glacier studies, and investigation of glacial-marine sedimentary processes.
- USGS - NRC Associate Program Advisor – 1978-1982

U.S. Bureau of Land Management (BLM), Pacific Outer Continental Shelf Office, Los Angeles, CA 9/1973 - 7/1974

Geological Oceanographer

- Prepared geological and oceanographic chapters of BLM environmental impact statements related to proposed leasing of Federal outer continental shelf oil and gas tracts in California, Oregon, Washington, and Alaska.
- Prepared data summaries and performed systematic evaluations of information required in formulating extent and potential value of candidate outer continental shelf areas being considered for inclusion in future lease offerings.
- Monitored contracts and oversaw contractor data and information submissions.

Amherst College, Amherst, MA and Mt. Holyoke College, South Hadley, MA 5/1972 - 9/1973

Visiting Assistant Professor of Geology

- Taught stratigraphy, marine geology, and introductory geology courses
- Supervised summer field program activities in North Carolina
- Oversaw two senior theses, and conducted research on Connecticut River hydrology and flooding

South Carolina Educational Television Network, Columbia, SC 10/1970 - 8/1972

Science Editor

- Prepared and presented as many as three on-air science stories each week as part of a live news and commentary show, *9:30 Newsroom*.
- Co-wrote and participated in a week-long series of live broadcasts and interviews from Kennedy Space Center, Florida, during the April 1972 Apollo 16 Mission.

Lamont Geological Observatory [now Lamont–Doherty Earth Observatory], Columbia University, Palisades, NY 9/1965 – 2/1966 & 9/1966 - 4/1967

Geophysical Technician

- Collected geological and geophysical data on National Science Foundation-funded research cruises: Antarctica on US Antarctic Research Program (USARP) icebreaker *USNS Eltanin* (Eltanin21) and Round-the-World on *RV Robert Conrad* (Conrad 11).
- Responsibilities included data collection using marine air gun seismic system, stable-table gravimeter, and ocean-bottom-camera photographic system.

EDUCATION

University of South Carolina – Ph.D. 1972 - Geological Oceanography (Climate History)

Cornell University – 1969-1970 (Ph.D. program – departed following 1969-1970 campus riots)

Duke University – M.A. 1969 – Geology (Carbonate Sedimentation)

Harpur College, State University of New York (now Binghamton University) – B.A. 1967 – Geology

CERTIFICATIONS

Certified Professional Geologist (PG) – State of California Board of Professional Engineers, Land Surveyors, and Geologists - Certificate # 3917 – 1985 - present

Previously - Registered Professional Geologist in Georgia and Alaska

Previously - Certified Professional Geological Scientist # 6553 - American Institute of Professional Geologists

AWARDS

The Explorers Club – Lowell Thomas Award (Career Achievement in Science and Exploration) - 2019

Department of the Interior Meritorious Service Award – 2016

National Geospatial-Intelligence Agency (NGA) Unit Service Award– 2016

Certificates and Letter of Appreciation, NGA – 2013 & 2014

USGS Eugene A. Shoemaker Award for Lifetime Achievement in Scientific Communications – 2011

USGS Shoemaker External Communications Award – 2010

Public Service Award, Geological Society of America (GSA) – 2009

Namesake for Molnia Bluff, Dry Valleys, Antarctica (Advisory Committee on Antarctic Names) – 2005

USGS Shoemaker External Communications Award – 2004

DVD Association - DVD Excellence Award - Duane Marquis Government DVD Award – 2003
Distinguished Service Award, GSA – 2000
USGS Shoemaker External Communications Award – 1999
NSF Certificate of Appreciation – 1995
Alaska Department of Natural Resources - Certificate and Letter of Appreciation – 1995
Secretary of Interior's Volunteer for Science Award - 1993
Elected Fellow-GSA -1982
Elected National Fellow - The Explorers Club – 1980
Elected Member - Sigma Xi Scientific Research Honor Society - 1969
US Antarctic Service Medal - 1968
Multiple awards for 'Best Paper' and 'Best Presentation'
Scholarships from State of New York, private foundations, National Science Foundation, and all academic institutions attended.

GRANTS / CONTRACTS / PERMITS

US National Park Service Research Permit - Glacier Bay National Park - 2019-2023
US National Park Service Research Permit – Wrangell St. Elias Bay National Park - 2015-2018
US National Park Service Research Permit - Kenai Fjords National Park - 2004-2007
US National Park Service Research Permit - Glacier Bay National Park - 2003-2006
US National Park Service Grants for Research in Alaskan National Parks - 2003-2006
Asian Development Bank Funded Contracts for work with the Government of Indonesia - 1996-1998
ONR Contracts for Russian Far East Radioactive Contamination Workshops - 1995-1996
NSF Small Grant for Exploratory Research (SGER)- 1993-1994
DOI, DOE, EPA, NOAA, & NSF contracts for three Workshops on Arctic Contamination - 1993-1996
USGS Climate Program Grant - 1993-1995, 1978-1981
SHELL, ARCO, EXXON, and Minerals Management Service Contracts - 1982-1983
NOAA OCSEAP Program Contract - 1975-1981
Merrill Foundation Trust Grant - 1973-1974

PROFESSIONAL SOCIETY POSITIONS HELD

US Geospatial Intelligence Foundation (USGIF) Certification Governance Board - 2016-present
American Association for the Advancement of Science (AAAS) Nominations Committee - 2009-2012
US Global Change Program Committee on Climate Change and Variability - 2009-2010
GSA Publication Committee - 2007- 2010 & 1991-1997
Councilor, GSA - 2003-2007
AAAS Steering Committee - Consortium of Affiliates of International Programs - 1996-1999
President, International Division - GSA – 1994-1995; Vice-President – 1993-1994
Editor – *GSA Today* – 1990-1999
The Explorers Club – 1980-present – National Fellow- Secretary - Explorers Club Washington Group - 2018-2019 Secretary; Chair - 2020-present

ACADEMIC AFFILIATIONS

Adjunct Professor, Delta State University, MS – 2018-present - courses: 1) Introductory Remote Sensing, 2) Advanced Remote Sensing, 3) Capstone Course (Individual Research Projects)
Adjunct Professor, University of Alaska Fairbanks – 2006-present
Adjunct Professor, Duke University - Nicholas School of the Environment – 1988-2014
Adjunct Professor, University of Idaho – 1984-2004
Research & Teaching Staff - Juneau Icefield Research Project (JIRP), Juneau, AK – 1975-2013
Adjunct Professor, California State University, Northridge – 1982-1983