CURRICULUM VITAE

John C. Behrendt

Fellow Emeritus
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Also:
Scientist Emeritus
U.S. Geological Survey
Boulder, CO

EDUCATION

Ph.D., Geophysics, University of Wisconsin, Madison, 1961
Dissertation: Geophysical Studies of the Filchner Ice Shelf Area of Antarctica
M.S., Geology, University of Wisconsin, Madison, 1956
B.S., Physics, University of Wisconsin, Madison, 1954

PRESENT RESEARCH OBJECTIVES

My recent Antarctic research, along with that of others, appears to show a causal relation between late Cenozoic rifting, volcanism, and rift shoulder mountain uplift with the coincident growth and instability of the Antarctic Ice sheet. Recent papers by me and coauthors have shown an indication of active volcanism beneath the West Antarctic Ice Sheet (WAIS) and Holocene volcanism on the Ross Sea continental shelf. The aerogeophysical program, of which I was one of the principal investigators, is continuing to provide significant new information relating to the relationship of the West Antarctic rift system and the stability of the West Antarctic Ice Sheet. This in turn is relevant to past (late Cenozoic) and future climate change and possible sea level rise.

I am presently working on a paper arguing that loss of ice mass from the WAIS, particularly as revealed by GRACE satellite data over the past decade possibly results in decompression melting of the upper mantle beneath WAIS. This in turn might result in volcanic activity beneath the WAIS and provide a positive feedback to an increase in subglacial melting such as observed in Iceland.

RESEARCH EXPERIENCE

Institute of Arctic and Alpine Research, University of Colorado 1996-Present

1996-present Senior Research Scientist,

1996-2006, Fellow

2006-present Fellow Emeritus

West Antarctic Ice Sheet studies.

U.S. Geological Survey 1964-1995
1977-1995 Research Geophysicist, Coordinator for Antarctic Research, Denver

1978-1983 Coordinator of Charleston Earthquake Research
1972-1977 Research Geophysicist and Branch Chief Atlantic and Gulf of Mexico Marine Geology, Woods Hole, MA
1970-1972 Research Geophysicist, Denver
1968-1970 Research Geophysicist, Monrovia, Liberia
1964-1968 Research Geophysicist, Denver

1958-1964 Project Associate, Geophysical and Polar Research Center, University of Wisconsin, Madison

1956-1958 Assistant Seismologist, Arctic Institute of North America, Ellsworth Station, Antarctica

Invited speaker at more than seventy national and international meetings and workshops, 1982-present.

Principal investigator on NSF grants for Antarctic research 1963, 1965, 1978, 1983-1984, 1984-1985, 1988-1989, 1990-1991, 1991-1993, 1993-1999.

ANTARCTIC FIELD WORK
13 trips
1956-1963 Oversnow seismic, gravity and magnetic traverses, aeromagnetic surveys
1965-1966 Aeromagnetic, gravity, and seismic surveys
1978-1979 Aeromagnetic and radar ice sounding survey
1983-1984 Marine seismic, magnetic gradiometer and gravity survey
1984-1985 Aeromagnetic survey
1988-1989 Marine seismic survey
1990-1991 Aeromagnetic survey
1991-1992 Aerogeophysical survey
1994-1995 Aerogeophysical survey
2002-2003 Marine geophysical survey\

Other research: Great Lakes, 1985-1991; Charleston Earthquake investigations, 1978-1986; Atlantic Margin, 1972-1990, West Africa, 1968-1973, Rocky Mountains, 1964-1972.

Retired from the USGS in 1995 after 31 years primarily in Denver. During USGS career I made oversnow, airborne, and surface geophysical investigations pertaining to geologic and glaciological problems in Antarctica, Rocky Mountains, West Africa, and marine geophysical research on Atlantic continental margins of U.S. and West Africa. I have worked on Antarctic research continually since the late 1950's when I spent 18 months in the Filchner Ice Shelf area and am presently a PI on airborne geophysical studies of the West Antarctic Ice Sheet. I lived for two years in Liberia, West Africa working on a USAID geological/geophysical program.

ADMINISTRATIVE AND ADVISORY EXPERIENCE

Geologist-in-charge, U.S. Geological Survey, Woods Hole, MA, 1972-73
I managed about 25 scientists, technicians and support staff in Atlantic marine and coastal research. In addition I represented the USGS on the campus of the Woods Hole Oceanographic Institution and continued this as branch chief (below).

Chief Branch of Atlantic and Gulf of Mexico Geology, Woods Hole, MA
January, 1974 - September, 1977
In this capacity I headed a new marine branch of geologists, geophysicists, geochemists, palentologists, hydrologists, physical oceanographers and a large staff of technical support people. The original staff of

about 50 people grew to about 175 during my tenure with other offices in Corpus Christi, TX, San Juan, P.R., and Reston, VA. I was responsible for developing and managing a scientific research program of geologic framework and environmental hazards investigations primarily on the U.S. Atlantic and Gulf of Mexico continental margin. This was a traditional USGS rotating administrative assignment, after which, I returned primarily to active research in Denver.

Scientific advisor and member of U.S. Delegations to 24 international Antarctic Treaty Consultative Meetings 1977-1995
I participated in negotiations of scientific and environmental provisions of the Convention on the Regulation of Antarctic Mineral Resource Activities (which although adopted, never entered into force) and the Environmental Protocol to the Antarctic Treaty and its Annexes.

Member of several NAS-NRC panels over the years which prepared reports on future Antarctic and marine research

Coordinator of Charleston Earthquake Studies 1978-1986
In the course of this multidisciplinary research program, I chaired a committee and was senior author of a report that resulted in a significant change in the USGS position on earthquake hazards along the eastern seaboard of the United States.

Chair U.S.-Canadian seismology committee of the Great Lakes International Multidisciplinary Program of Crustal Evolution (GLIMPCE), 1985-1990

Member of Science Advisory Committee, USGS Geologic Division, 1988-1991

Panel Member many panels (national and international) and ad hoc advisory committees over the years on multidisciplinary scientific research

SOCIETIES

American Geophysical Union, Geological Society of America (fellow), Society of Exploration Geophysics, American Association for Advancement of Science (fellow), American Polar Society (President 2007 – 2010)

AWARDS

Department of Defense Antarctic Service Medal with Winter Over Bar, 1965

Department of Interior Meritorious Service Award, 1992

First Felice Ippolito Gold Medal for his Antarctic research by the Italian Antarctic Research Program and the Academia Nazionale dei Linceia in 1999.

In 2003 elected a Fellow of the American Association for the Advancement of Science for distinguished contributions to the understanding of crustal controls on the Antarctic Ice Sheet and for efforts to protect and manage Antarctica for the scientific benefit of all nations, 2003.

2011, Distinguished Alumni Award, Dept. of Geosciences, Univ. of Wisconsin, Madison.

BIBLIOGRAPHY

Books:

"Innocents on The Ice; A Memoir of Antarctic Exploration, 1957" , 1998.

"The Ninth Circle; A Memoir of Life and Death in Antarctica, 1960-62" , 2005.

Scientific Publications:
> 300 refereed articles and > 200 abstracts of talks presented

2016 works

Behrendt, J.C., 2016, GLIMPCE seismic reflection evidence of deep-crustal and upper mantle intrusions and magmatic underplating associated with the Midcontinent Rift system (MRS) of North America – another look. Abstracts of 2016 GSA Meeting.

Behrendt, J. C., and LeMasurier, W.E., 2016, Positive Feedback Between West Antarctic Ice Sheet (WAIS) Deglaciation, Decompression-melt-induced Volcanism and Resultant sea-level rise, Abstracts 2016, WAIS Meeting.

Behrendt, J. C., and LeMasurier, W.E. 2016,The Potential for Positive Feedback Between West Antarctic Ice Sheet (WAIS) Deglaciation, Decompression-melt-induced Volcanism and resultant sea-level rise, Abstracts 2016, AGU Meeting

2017 works

Behrendt, John C., Wesley LeMasurier,Wesley, 1917, The potential for positive feedback between deglaciation of the West Antarctic Ice Sheet, decompression-melt-induced subglacial volcanism and resultant sea-level rise, Abstracts of International Glaciological Society Symposium on, Polar Ice, Polar Climate, Polar Change, 14-19 August, Boulder, Colorado, USA.