

VITA

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EDUCATION:

1981 B.S. Geology Michigan State University, East Lansing, Mich.
1984 M.S. Geophysics Stanford University, Stanford, California
1986 Ph.D. Geophysics Stanford University, Stanford, California
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ACADEMIC POSITIONS HELD:

2000-present Professor of Geophysics, Department of Geology
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1989-present Director, Geochronology Laboratory, Geophysical Institute,
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1994-2000 Associate Professor of Geophysics, Department of Geology
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1989-1994 Assistant Professor of Geophysics, Department of Geology and
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1986-1989 Post-Doctoral Fellow, Department of Physics, University of
Toronto, Toronto, Ontario, Canada
1985-1986 Laboratory Manager, Stanford Paleomagnetic
Laboratory, Stanford, California
1981-1986 Research Assistant, Department of Geophysics,
Stanford University, Stanford, California
1981 Intern, Lunar and Planetary Institute, Houston, Texas

ADMINISTRATIVE EXPERIENCE (INCLUDING COMMITTEE CHAIRS):

- 2007-present Associate Dean, College of Natural Science and Mathematics,
University of Alaska Fairbanks
- 2007-present Director, Engineering, Science and Technology Experimental Station,
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- 2007 - present Accreditation Evaluator, Northwest Commission of Colleges and
Universities (training completed November 2, 2007)
- 1999-present Outcomes Assessment Coordinator, Department of Geology and
Geophysics, University of Alaska Fairbanks
- 1996-present Member/Chair, Alaska Geologic Mapping Advisory Board, State of
Alaska Department of Natural Resources, Division of Geological and
Geophysical Surveys
- 1995-2003, 2007 Head/Chair, Department of Geology and Geophysics, University of
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- 2004-2006 President-elect and President of UAF Faculty Senate
- 2004-2007 Member, University of Alaska Faculty Alliance
- 2006 - 2007 Co-chair, University of Alaska Fairbanks Vice Chancellor for
Academic Affairs/ Provost search committee, 2006-2007
- 2004-2005 University of Alaska Fairbanks Provost's Academic Leadership
Academy workshop, participant in 2004, discussion leader in 2005
- Member of numerous faculty searches for the Department of Geology and Geophysics
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PROFESSIONAL SOCIETIES:

- Member, American Geophysical Union
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REFEREED PUBLICATIONS (published or in press 1986-2007)

(in many Russian abstracts and articles, Layer is translated from the Cyrillic alphabet as Leier)

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Geothermal Research*, in review.
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Cenomanian/Turonian dinosaur site in northwestern Alaska: A synthetic look at early
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2008

Johnson, C. L., C. G. Constable, L. Tauxe, R. Barendregt, L. L. Brown. R. S. Coe, P. Layer, V. Mejia, N. D. Opdyke, B. S. Singer, H. Staudigel, D. B. Stone, 2008, Recent investigations of the 0.5 Ma geomagnetic field recorded by lava flows, *Geochem. Geophys. Geosyst.*, 9, Q04032, doi:10.1029/2007GC001696.

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1996

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1995

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- 1994
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1993

Solie, D.N., and P.W. Layer, 1993, Evidence of synmagmatic foliation in the Selawik Hills, NW Alaska, based on $^{40}\text{Ar}/^{39}\text{Ar}$ age determinations, Geological Society of America Abstracts with Programs, Cordilleran Section, v. 25, A149.

West, A.W., and P.W. Layer, 1993, $^{40}\text{Ar}/^{39}\text{Ar}$ dating of the McKinley Pluton, Denali National Park, Alaska, Geological Society of America Abstracts with Programs, Cordilleran Section, v. 25, A162.

1992

Reischmann, Th., V. Bachtadse, A. Kroner, and P.W. Layer, 1992, Paleomagnetism and geochronology of a late Proterozoic island arc terrane from the Red Sea Hills, Sudan, EOS, Transactions of the American Geophysical Union, 73, 93.

Layer, P.W., V.S. McConnell and J.C. Eichelberger, 1992, New age constraints on magmatic and hydrothermal activity in central Long Valley caldera, California, EOS, Transactions of the American Geophysical Union 73, 354.

*Hackett, D.J, P.W. Layer, K. Fujita and L. Parfenov, 1992, Geochronology of granites in the Cherskii Range, Yakutia and implications for accretion of terranes to the Siberian Craton, EOS, Transactions of the American Geophysical Union, 73, 1992 Fall meeting supplement, 652.

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Nye, C.J., J.E. Beget, R.J. Motyka and P.W. Layer, 1992, Geology and geochemistry of Mt. Douglas Volcano, eastern Aleutian Arc, Alaska, EOS, Transactions of the American Geophysical Union, 73, 1992 Fall meeting supplement, 645.

1991

York, D., P.E. Smith, R.M. Easton and P.W. Layer, 1992, A laser $^{40}\text{Ar}/^{39}\text{Ar}$ study of single crystals of biotite and hornblende across the Grenville Front, Geological Association of Canada Annual Meeting Program with Abstracts, 16, A136.

*Layer, P.W., and A. Kroner, 1991, Paleomagnetic evidence for Archean plate tectonics, IASPEI Program and Abstracts, XX General Assembly of IUGG, Vienna, 56.

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1990

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1989

*Layer, P.W., and D. York, The $^{40}\text{Ar}/^{39}\text{Ar}$ dating of stromatolite-bearing sediments from the Early Proterozoic Transvaal Supergroup, South Africa, 28th International Geological Congress, Washington DC Abstract Volume 2, 267, 1989.

York, D. P.W. Layer, M. Lopez-Martinez and A. Kroner, Thermal histories from the Barberton Greenstone Belt, Southern Africa, 28th International Geological Congress, Washington DC Abstract Volume 3, 413, 1989.

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*Layer, P.W. and D. York, The $^{40}\text{Ar}/^{39}\text{Ar}$ dating of Early Proterozoic stromatolite-bearing sediments, *EOS Trans. Am. Geophys. U.* 70, 1146, 1989.

1988

Hall, C.M., J.D. Redman. P.W. Layer and D. York, $^{40}\text{Ar}/^{39}\text{Ar}$ ages from a fully automated laser microprobe, *EOS Transactions of the American Geophysical Union* 69, 520, 1988.

1987

*Layer, P.W., C.M. Hall, N.D. McMaster and D. York, Laser Generated $^{40}\text{Ar}/^{39}\text{Ar}$ age spectra of single mineral grains, *EOS Transactions of the American Geophysical Union*, 68, 431, 1987.

*Layer, P.W., A. Kroner, D. York and M. McWilliams, A Paleomagnetic pole and a single grain $^{40}\text{Ar}/^{39}\text{Ar}$ age from the Mbabane Pluton, Swaziland: Evidence for Early Proterozoic cratonic stability, *EOS Transactions of the American Geophysical Union*, 68, 1259-1260, 1987.

*York, D., and P.W. Layer, Correlation between $^{40}\text{Ar}/^{39}\text{Ar}$ ages and sizes of single grains of biotite: Insights into thermal history, *EOS Transactions of the American Geophysical Union*, 68, 1514, 1987.

Kroner, A., P.W. Layer and M.O. McWilliams, Archean palaeomagnetism of the Kaapvaal Craton: Implications for the tectonic evolution of granite-greenstone-gneiss terranes, *International symposium on Tectonic Evolution and Dynamics of Continental Lithosphere*, v 3, Third All China conference on tectonics, p 235, 1987.

1986

Layer, P.W., A. Kroner and M. O. McWilliams, Kaapvaal Craton apparent polar wander in the lower Proterozoic, *EOS Trans. Am. Geophys. U.* 67, 928, 1986.

1985

*Layer, P.W., M. O. McWilliams and A. Kroner, Paleomagnetic evidence for Archean reversals of the geomagnetic field, *International Association of Geomagnetism and Aeronomy Abstracts with Programs*, v. 1, 223, 1985.

*Layer, P.W., M. O. McWilliams and A. Kroner, Archean apparent polar wander recorded in the Kaapvaal Craton, Southern Africa, *International Association of Geomagnetism and Aeronomy Abstracts with Programs*, v. 1, 224, 1985.

1984

*Layer, P.W., M. O. McWilliams and A. Kroner, Evidence for regional magnetic overprinting from the Witwatersrand Basin, South Africa, *EOS Trans. Am. Geophys. U.* 65, 863, 1984.

1983

*Layer, P.W., M. O. McWilliams and A. Kroner, Archean paleomagnetic results from the Kaapvaal Craton, *EOS Trans. Am. Geophys. U.* 64, 689, 1983.

1982

Kroner, A., M.O. McWilliams and P. W. Layer, A provisional Archean APWP for the Kaapvaal Craton, *EOS Trans. Am. Geophys. U.* 63, 912, 1982.

*Layer, P.W., A. Kroner and M. O. McWilliams, Paleomagnetism of the 2813 Ma Usushwana Complex, southern Africa, *EOS Trans. Am. Geophys. U.* 63, 912, 1982.

Chairman/Major Supervisor

Andrew West (M.S. Geology, 1994)

A petrologic and geochronologic study of the McKinley Pluton, Alaska

Daniel Hackett (M.S. Geophysics, left program to become H.S. teacher)

Thesis work involved a geochronologic investigation of the granitic plutons of the Chersky Range, Russia

Thomas Douglas (M.S. Geology, 1997)

Metamorphic histories of the Chatanika eclogite and Fairbanks schist within the Yukon-Tanana terrane, Alaska, as revealed by electron microprobe thermobarometry and $^{40}\text{Ar}/^{39}\text{Ar}$ single grain dating

Ute Adolphs (Ph.D. Geophysics, 1998)

Snow and Ice Thickness Distributions in the South Polar Pacific Ocean

Todd Dallegge (Ph.D. Geology, 2002)

*Application of $^{40}\text{Ar}/^{39}\text{Ar}$ chronostratigraphy to geologic problems in
Yellowstone caldera and Cook Inlet basin*

Walt Munly (Ph.D. Geology, 2004)

*An investigation into $^{40}\text{Ar}/^{39}\text{Ar}$ radiogenic dating and X-ray analysis of shales
and clays from northern Alaska.*

Dan Jones (M.S., Geology, active)

Excess argon in El Chichon volcanic rocks

Jeff Benowitz (Ph.D. Interdisciplinary Geology and English, active)

Uplift of the central Alaska Range

Member of 17 M.S. and 10 Ph.D. thesis committees

COURSES TAUGHT

Spring Semester 1990

GEOS 605 Geochronology

3 credits, 3 contact hours, 3 students enrolled

Spring Semester 1991

GEOS 430 Statistics and Data Analysis in Geology

3 credits, 3 contact hours, 12 students enrolled, 3 audit

GEOS 692 Advanced Topics in Geochronology

2 credits, 2 contact hours, 3 students enrolled, 1 audit

Spring Semester 1992

GEOS 430 Statistics and Data Analysis in Geology

3 credits, 3 contact hours, 4 students enrolled, 1 audit

GEOS 605 Geochronology

3 credits, 3 contact hours, 13 students enrolled, 1 audit

Spring Semester 1993

GEOS 430 Statistics and Data Analysis in Geology

3 credits, 3 contact hours, 18 students enrolled

Spring Semester 1994

GEOS 430 Statistics and Data Analysis in Geology

3 credits, 3 contact hours, 11 students enrolled

Fall Semester 1994

GEOS 605 Geochronology

3 credits, 3 contact hours, 5 students enrolled

Spring Semester 1995

GEOS 430 Statistics and Data Analysis in Geology

3 credits, 3 contact hours, 11 students enrolled

Spring Semester 1996

GEOS 430 Statistics and Data Analysis in Geology
3 credits, 3 contact hours, 12 students enrolled

Fall Semester 1996

GEOS 605 Geochronology
3 credits, 3 contact hours, 8 students enrolled

Spring Semester 1997

GEOS 430 Statistics and Data Analysis in Geology
3 credits, 3 contact hours, 19 students enrolled
GEOS 475/675 Presentation Skills for Geoscientists (co-taught with R. Newberry)
2 credits, 4 contact hours, 14 students enrolled

Fall Semester 1997

GEOS 482 Seminar
1 credit, 1 contact hour, 4 students enrolled
GEOS 493 Independent Study
2 credits, 6 contact hours, 1 student enrolled

Spring Semester 1998

GEOS 430 Statistics and Data Analysis in Geology
3 credits, 3 contact hours, 14 students enrolled
GEOS 475/675 Presentation Skills for Geoscientists (co-taught with R. Newberry)
2 credits, 4 contact hours, 9 students enrolled
GEOS 692 Tectonics of Russia (co-taught with R. Newberry)
2 credits, 2 contact hours, 9 students enrolled

Fall Semester 1998

GEOS 605 Geochronology
3 credits, 3 contact hours, 6 students enrolled

Spring Semester 1999

GEOS 430 Statistics and Data Analysis in Geology
3 credits, 3 contact hours, 11 students enrolled
GEOS 475/675 Presentation Skills for Geoscientists (co-taught with R. Newberry)
2 credits, 4 contact hours, 5 students enrolled

Fall Semester 1999

GEOS 482 Seminar
1 credit, 1 contact hour, 4 students enrolled

Spring Semester 2000

GEOS 430 Statistics and Data Analysis in Geology
3 credits, 3 contact hours, 21 students enrolled
GEOS 475/675 Presentation Skills for Geoscientists (co-taught with S. Fowell)
2 credits, 4 contact hours, 5 students enrolled

Fall Semester 2000

GEOS 605 Geochronology

3 credits, 3 contact hours, 5 students enrolled

GEOS 482 Seminar

1 credit, 1 contact hour, 3 students enrolled

Spring Semester 2001

GEOS 430 Statistics and Data Analysis in Geology

3 credits, 3 contact hours, 15 students enrolled

GEOS 475/675 Presentation Skills for Geoscientists (co-taught with S. Fowell)

2 credits, 4 contact hours, 13 students enrolled

Spring Semester 2002

GEOS 430 Statistics and Data Analysis in Geology

3 credits, 3 contact hours, 14 students enrolled

GEOS 475/675 Presentation Skills for Geoscientists (co-taught with J. Gardner)

2 credits, 4 contact hours, 8 students enrolled

Fall Semester 2002

GEOS 605 Geochronology

3 credits, 3 contact hours, 7 students enrolled

Spring Semester 2003

GEOS 430 Statistics and Data Analysis in Geology

3 credits, 3 contact hours, 19 students enrolled

GEOS 101X The Dynamic Earth (co-taught with Rainer Newberry)

4 credits, 6 contact hours, 40 students enrolled

Fall Semester 2003

GEOS 482 Seminar

1 credit, 1 contact hour, 7 students enrolled

Spring Semester 2004

GEOS 430 Statistics and Data Analysis in Geology

3 credits, 3 contact hours, 20 students enrolled

GEOS 101X The Dynamic Earth (co-taught with Rainer Newberry)

4 credits, 6 contact hours, 70 students enrolled

Fall Semester 2004

GEOS 605 Geochronology

3 credits, 3 contact hours, 10 students enrolled

Spring Semester 2005

GEOS 430 Statistics and Data Analysis in Geology

3 credits, 3 contact hours, 17 students enrolled

GEOS 101X The Dynamic Earth (co-taught with Rainer Newberry)

4 credits, 6 contact hours, 75 students enrolled

Paul W. Layer

Spring Semester 2006

GEOS 430 Statistics and Data Analysis in Geology

3 credits, 3 contact hours, 5 students enrolled

GEOS 101X The Dynamic Earth (co-taught with Rainer Newberry)

4 credits, 6 contact hours, 70 students enrolled

FUNDED PROPOSALS

The timing of a Middle Pleistocene glacial episode in Beringia by the $^{40}\text{Ar}/^{39}\text{Ar}$ dating of the Lava Creek Basalts, Seward peninsula, Alaska, submitted April 1990 to Faculty Small Grants Program, UAF, \$5000.

Acquisition of a High-sensitivity $^{40}\text{Ar}/^{39}\text{Ar}$ dating system for the University of Alaska Fairbanks, submitted March 1992 to the National Science Foundation, \$120,000.

Acquisition of a High-sensitivity $^{40}\text{Ar}/^{39}\text{Ar}$ dating system for the University of Alaska Fairbanks, submitted March 1992 to the UAF Chancellor for partial matching of the NSF grant, \$30,000 .

Acquisition of a High-sensitivity $^{40}\text{Ar}/^{39}\text{Ar}$ dating system for the University of Alaska Fairbanks, submitted December 1992 to the UA Presidents Natural Resources Fund for partial matching of the NSF grant, \$40,000 .

Investigation of Alaska's Geologic resources and hazards through high precision $^{40}\text{Ar}/^{39}\text{Ar}$ dating, submitted March 1992 to the Alaska Science and Technology Foundation, \$89,156.

Mesozoic to present day tectonics of the eastern Sakha Republic, Russia: A cooperative research proposal with the Yakut Science Center, submitted September 1992 to the National Science Foundation, co-principal investigators, David B. Stone and Kazuya Fujita, \$85,429

Research experience for undergraduates in the geosciences, submitted September 1992 to the National Science Foundation, co-principal investigators Doug Christensen and David Stone, amount \$90,000.

Mesozoic to present day tectonics of northeastern Russia: A cooperative research proposal with the Yakut Science Center and NEISRI, submitted September 1994 to the National Science Foundation, co-principal investigators, David B. Stone and Kazuya Fujita, \$140,707

Integrated geologic studies to extend our understanding of ANWR into other parts of the Brooks Range, the subsurface of the North Slope and adjacent parts of the circumarctic, submitted May 1995 to various oil companies, amount requested per company: ~\$40,000, co-principal investigators, C. Hanks, W. Wallace, K. Crowder (funded for \$80,000).

Research experience for undergraduates in the geosciences, NSF, began 1/96 for 3 years, co-principal investigator, Douglas Christensen, amount \$147,973, continued through 2005.

Mesozoic to present day tectonics of northeast Russia: A cooperative research program with the Yakut Science Center and NEISRI, 6/1/97 1 year, Paul Layer David Stone, Kazuya Fujita, PI, , OPP, NSF, \$26,207

$^{40}\text{Ar}/^{39}\text{Ar}$ geochronology of gold deposits in the Yana-Kolyma belt, NE Russia, submitted 1/98 to Placer Dome Inc. 1 year, co-principal investigator Rainer Newberry, \$12,000

Collaborative Research: Geomagnetic field for the last 5 Ma co-PI with D. Stone and researchers from other universities, \$69,192 from NSF

Upgrade for the VG-3600 Mass Spectrometer, \$120,000 from NSF. Start date July 1, 2002.

Collaborative Research: The record of recharge and storage in the El Chichon magma system through Ar isotopic and experimental petrologic constraints, with J. Gardner, UT Austin, \$136,963 2 years, start date July 1, 2004

A long-term effort to determine $^{40}\text{Ar}/^{39}\text{Ar}$ ages of Alaskan mineral deposits: proposal for \$20,000 from the USGS submitted with R. Newberry start date October 1, 2004.

Geochronology Laboratory operations support, \$70,000. This is the annual budget for the geochronology laboratory, with funding coming from various contracts and general fund support for the Geophysical Institute.

In addition to these funded proposals, I have submitted an average of two proposals per year to the National Science Foundation for research support some of which have not been funded.

Conferences attended (1994 – 2005 only)

* as presenter, % as session organizer, # as recruiter

2007

*El Chichon workshop, San Cristobal de las Casas, Mexico

2006

American Geophysical Union
GSA Cordilleran meeting

2005

American Geophysical Union

2004

*Alaska Miners Association Annual Meeting, Fairbanks, Alaska
*% American Geophysical Union

2003

*Alaska Geological Society Technical Conference, Fairbanks, Alaska
*American Geophysical Union

2002

*2002 Pacific Section AAPG/Western Region SPE Conference, Energy Frontiers: A 2002 Perspective, A Joint Conference of Geoscientists and Petroleum Engineers, May 18-23, 2002, Anchorage Alaska
*3rd Biennial Workshop on Subduction Processes, Fairbanks, AK
*American Geophysical Union

2001

Alaska Geological Society Technical Conference, Fairbanks, Alaska
*American Geophysical Union

American Association for Higher Education 9th annual conference on faculty roles and rewards, Tampa, Florida

2000

#Geological Society of America, Reno, Nevada
American Geophysical Union

1999

%Alaska Geological Society Technical Conference, Fairbanks, Alaska
*American Geophysical Union
Meeting for Chairs and Heads of Earth Science Departments sponsored by the American Geophysical Union, Washington DC

1998

#Geological Society of America, Toronto, Canada
Alaska Geological Society Technical Conference, Anchorage, Alaska

1997

*#Geological Society of America, Salt Lake City, Utah
*%American Geophysical Union, San Francisco, California
Meeting for Chairs and Heads of Earth Science Departments sponsored by the American Geophysical Union, Washington DC

1996

*American Geophysical Union, San Francisco, California

1995

*Alaskan Anthropological Conference, Anchorage, Alaska
*Geological Society of America, Cordillerian Section, Fairbanks, Alaska
*American Geophysical Union, San Francisco, California

1994

*International Conference on Arctic Margins, Russian Academy of Sciences, Magadan, Russia
*Eighth International Conference on Geochronology, Cosmochronology and Isotope Geology, Berkeley, California
*Nordic Winter Meeting in Lulea, Sweden,

March 2008.