William Harbert

URL: *http://harbert.geology.pitt.edu*
E-mail: harbert at pitt.edu
Phone: 412-624-8874
FAX: 412-624-3914

FACULTY ADVISOR:

Dr. Allan Cox†

EDUCATION:

Ph.D., *Geophysics*, Stanford University Stanford University, April 1987,
Mitchell Earth Sciences Building,
Room 360
397 Panama Mall
Stanford, CA 94305-2215
Tel: 650.723.4746
Fax: 650.725.7344

M.S., *Exploration Geophysics*, Stanford University, January 1983

B.S., (First Major) *Mathematics-Geology*,

B.S., (Second Major) *Geophysics*,

Western Washington University, August 1981
Geology Department
516 High Street
Western Washington University
Bellingham, WA 98225-9080
Tel: 360-650-3582
Fax: 360-650-7302

Ph.D. THESIS TITLE:

Tectonics of Alaska, plate tectonics of the Pacific basin, and paleomagnetism of the Aleutian arc.

CORPORATE TRAINING:

American Heart Association

Heartsaver First Aid (including use of AEDs)

Earth Resource Mapping Incorporated

Level One--Land Information Applications

Environmental Systems Research Incorporated

Introduction to ARC/INFO
Network, Tin, Cogo, ArcStorm and ArcScan
Customizing ARC/INFO with AML
Programming MapObjects with Visual Basic
Working with MapObjects Internet Map Server
Introduction to Programming ArcObjects with VBA
Advanced ArcObjects Component Development I
Advanced ArcObjects Component Development II (.NET)

---

†Deceased

Creating and Editing Geodatabase Features with ArcGIS (for ArcEditor and ArcInfo)

Exploring the VBA Environment

Introduction to ArcGIS 9 Geospatial Analyst

Learning ArcGIS 9 Spatial Analyst

Working with ModelBuilder

Halliburton

ProMAX 2D/3D

SeisSpace Promax.

Hampson-Russell, A CGGVeritas Company

Data Loading Workshop

STRATA Workshop

AVO Workshop

EMERGE Workshop

ION GMG

MESA Field

MESA Professional

MESA Expert

Kansas Geological Survey and GEOMETRICS

MASW (Multichannel analysis of surface waves) Workshop. Taught by Dr. Julian Ivanov (Kansas Geological Survey).

GAMIT/GLOBK

GAMIT/GLOBK Workshop. Taught by Professor Robert King (MIT) and Professor Thomas Herring (MIT)

Parallel Geoscience Corporation

A Lab Course in Seismic Reflection Processing. Taught by Professor Roger Young (University of Oklahoma)

PetRos EiKon Technologies

EMIGMA V 7.5 Near Surface Electromagnetic Interpretation

EMIGMA V 7.5 Airborne—FEM Electromagnetics

Safety Plus LLC

Safety Orientation

Seismic Micro Technologies, Inc.

Geophysical Interpretation - 2d/3d PAK

Power Tools for Geologists - EarthPAK

Society of Exploration Geophysics, Continuing Education

Planning and Operating a Land 3D Seismic Survey

AVO: Seismic Lithology

Seismic Fluid Detection, Reservoir Delineation and Recovery Monitoring

Ohio University

Hydrogen Sulfide Safety Certification Training

ORACLE

Introduction to ORACLE: SQL and PL/SQL using procedure builder

University of Pittsburgh

1998 Russian Summer Language Institute

U.S. Department of Labor, Mine Safety and Health Administration (MSHA)

Hazard Training

EXPERIENCE:

8/09-present	Professor, *Department of Geology and Planetary Sciences*, University of Pittsburgh. Teach classes, conduct research in geophysics, geographical information systems and plate tectonics, serve on university committees.
4/09-present	Member, *Academic Advisory Committee to the Pennsylvania Department of Conservation and Natural Resources (DCNR)* on the assessment of geological sequestration of carbon dioxide.
9/08-present	Voting Member, University of Pittsburgh *University Planning and Budgeting Committee*.
11/07-present	Resident Institute Fellow, NETL-*Institute for Advanced Energy Solution (IAES)*.
7/07-present	Voting Member, *University of Pittsburgh Senate Council*.
9/06-present	Voting Member, elected School of Arts and Sciences representative, *University of Pittsburgh Faculty Assembly*.
9/99-present	Co-Director*, Alfred E. Sloan Professional Masters of Science in Geographical Information Systems and Remote Sensing*, University of Pittsburgh.
9/95-present	Co-Director, *Undergraduate Certificate in Geographical Information Systems* at the University of Pittsburgh.
8/06-12/07	Stakeholder, Carbon Management Advisory Group, Department of Conservation and Natural Resources, Commonwealth of Pennsylvania. Draft report focused on carbon management for the commonwealth.
9/94-9/08	Associate Professor, *Department of Geology and Planetary Sciences*, University of Pittsburgh. Teach classes, conduct research in GIS, geophysics, paleomagnetism and plate tectonics, serve on university committees.
9/98-present	Associate Member, *Penn State Astrobiology Research Center* (PSARC), provide expertise in projects focused on Astrobiology.
10/90-present	Adjunct Faculty, *Russian and Eastern European Studies*, University of Pittsburgh.
10/88-present	Research Associate, *The Carnegie Museum of Natural History*, Pittsburgh, Pennsylvania. Complete magnetostratigraphic studies of important fossil localities.
3/05-3/07	ORISE Research Associate, *National Energy Technology Laboratory*, Department of Energy, Pittsburgh, PA.
3/02-6/05	Chairman, *Department of Geology and Planetary Science*, University of Pittsburgh.
3/02-3/03	ORISE Research Associate, *National Energy Technology Laboratory*, Department of Energy, Pittsburgh, PA.
9/02-11/02	Full Voting Member, *Governor's Commission on Mine Voids and Mine Safety*. Investigate Mine Voids and Mine Safety, hold public hearings, complete a detailed report for the Governor of Pennsylvania.

9/88-9/94 Assistant Professor, *Department of Geology and Planetary Sciences*, University of Pittsburgh. Teach classes and conduct research in paleomagnetism and plate tectonics.

7/90-9/90 Foreign Scientist, supported by *Academy of Sciences of the U.S.S.R*. Conduct paleomagnetic field work in the Koryakia region of northeastern USSR.

8/89-10/89 Exchange Scientist, *Academy of Sciences of the U.S.S.R – U.S. National Academy of Sciences*, Conduct paleomagnetic field work in the Chita region of eastern Siberia.

8/87-8/88 Research Associate, *National Research Council*. Conduct research on the paleolatitude of Wrangellia.

6/87-7/88 Visiting Scholar, *Department of Geophysics*, Stanford University. Conduct research in plate tectonics and paleomagnetism.

9/86-7/87 Computer Systems Manager, *Geophysics Department*, Erebus VAX(750), Stanford University. Maintain VAX 750, oversee responsibilities for all aspects of hardware, software and supplies.

1/83-6/87 Research Assistant, *Geophysics Department*, Stanford University. Conduct independent research into paleomagnetic and plate tectonics problems.

1/84-3/84 Teaching Assistant, *Geophysics Department*, Stanford University. Aid in the teaching of GP190-Plate Tectonics.

6/82-9/82 GFA-5, *United States Geological Survey*, Menlo Park, CA. Migration of multichannel seismic data on VAX 11/780. Thermal and AF demagnetization of paleomagnetic samples collected from Aleutian Islands.

6/81-9/81 Graduate Geophysics Student, *Phillips Petroleum Company*, Denver CO. Seismic, magnetic and gravity interpretation and prospecting.

9/80-5/81 GFA-5, *United States Geological Survey*, Menlo Park, CA. Paleomagnetic sampling and demagnetizing of samples collected from the Okanagon region of Washington state.

7/80-8/80 Geophysics Student, *Phillips Petroleum Company*, Bartlesville, OK. Processing seismic data of Phillips PIC group.

6/79-9/79 Geologic and Geophysical Field Assistant, *Cominco American*, Noatak Camp, Alaska. AMT, IP, also some surveying with HP survey Instrument, also soil sampling and core splitting.

6/78-8/78 Geophysical field assistant, *Cominco American*, Kogolaktuk Camp, Alaska. MAX-MIN, Turam, soil sampling and core splitting.

6/76-9/76 Medical and safety staff, *Juneau Icefield Research Program*, Alaska, Mass-balance study of Cathedral glacier, some surveying (T-2, T-3).

6/75-8/75 NSF sponsored student, *Juneau Icefield Research Project*, Alaska, Some use of T-2 survey instrument.

HONORS:

2004: Fulbright Hays Award, Contemporary Mongolia project.

1990: Foreign Scientist, Academy of Sciences of the U.S.S.R.

1990: Outstanding Service Certificate, U.S. National Committee for the International Union of Geodesy and Geophysics and the American Geophysical Union.
1989: Exchange Scientist, Academy of Sciences of the U.S.S.R -- National Academy of Sciences.
1987-1988: Research Associate, National Research Council.
1987-1988: Visiting Scholar, Department of Geophysics, Stanford University.
1984: Honorable Mention: Best Student Talk: Pacific Section American Association of Petroleum Geologists, 59th annual meeting.
1976: Honors Group, 35th Annual Science Talent Search, for Westinghouse Science Scholarships and Awards.
1976: National Junior Science and Humanities participant, one of five representatives from Washington State to attend convention held at Georgetown University, May 19-22.
1976: First Place Award, Washington State Science Talent Search, during competition held in Richland, Washington.
1976: Selected as one of two Washington state delegates to attend the National Youth Science Camp in West Virginia. (Declined due to prior commitment to Juneau Icefield Research Project).

CHAIRED SESSIONS:

1. American Geophysical Union, Fall Meeting, 1999, *Tectonics of the Kamchatka Peninsula and Northern Pacific Basin: New Results II.*
2. American Geophysical Union, Spring Meeting, 1999, *Geographical Information Systems and Remote Sensing Methods applied to Tectonics.*
3. American Geophysical Union, Spring Meeting, 1996, *Tectonics of the Circum Pacific and Atlantic*.
4. American Geophysical Union, Spring Meeting, 1994, *Tectonics of Asia-New Paleomagnetic Perspectives*.
5. Geological Society of America, National Meeting, 1993, Wednesday, *Computers in Geology*.
6. American Geophysical Union, Spring Meeting, 1990, Wednesday, *Apparent PolarWander Path II*.
7. American Geophysical Union, Fall Meeting 1988, *Pre-Cenozoic Circum-Pacific Paleomagnetism*.
8. American Geophysical Union, Spring Meeting 1987, *Terrane Motions II: Case Histories*.
9. American Geophysical Union, Fall Meeting 1985, *Circum-Pacific Paleomagnetism and Tectonics*,

RESEARCH AWARDS:

EAR-8915840, Upgrading the Paleomagnetic Research at the University of Pittsburgh, with V. A. Schmidt.

EAR-8916442, Paleomagnetism of the Olutorsky Peninsula and Kuul Suture Zone, Northeast USSR.

EAR-9104752, Upgrading the Paleomagnetic Research at the University of Pittsburgh, with V. A. Schmidt.

EAR-910003P, Computer visualization of Steens Mountain Geomagnetic Reversal.

EAR-9219271, Tectonics and paleomagnetism of the Kamenskoye-Penzhinskaya Guba Regions, Koryak Superterrane, Northeastern Russia.

ATM950006P, Atmospheric heating in the pre-Cambrian atmosphere as a function of atmospheric composition.

EAR-9706446, Tectonics and Paleomagnetism of Kamchatka Peninsula Composite Terranes, Northeastern Russia.

EAR-9700174, Enhancing geoscience education and public outreach: Partnership between the University of Pittsburgh and the Carnegie Museum of Natural History, with Rosemary Capo, David Crown, Harold Rollins and Jack Donahue.

EAR-9940717, Upgrading the Paleomagnetic Laboratory at the University of Pittsburgh.

NASA-ERS-1 SAR Award, Paleomagnetism and tectonics of the Penshinskiya Khrebet using high resolution SAR data, northern Kamchatka Peninsula, USSR (more than 100 full resolution ERS-1/2 SAR scenes, 32 Space Shuttle SIR-C SAR images).

NASA-ASTER Award, Urban Monitoring of Cities of the former Soviet Union using NASA ASTER Data, with M. Ramsey

Hewlett International Grant Program, Urban Monitoring of Cities of the former Soviet Union using NASA ASTER Data.

Alfred E. Sloan Foundation, 2001-2003, A New Professional Masters in Geographical Information Systems. Grant Award to Associate Dean Steve Husted, Geology and Planetary Science portion to William Harbert.

Department of Energy, 2002, National Energy Technology Laboratory, University Partnership Fellowship (12 month GSR MS graduate student Paula Grgrich).

ARCUS, 2002 (Arctic Research Consortium of the United States), Visiting Scientist Award.

National Energy Technology Laboratory, Department of Energy, 2003, National Energy Technology Laboratory, University Partnership Fellowship (12 month GSR MS graduate student Mark Zellman).

National Energy Technology Laboratory, Department of Energy, 2003 and 2004, National Energy Technology Laboratory, University Partnership Fellowship (12 month GSR Ph.D.graduate student Brian Lipinski).

National Energy Technology Laboratory, Department of Energy, 2004, National Energy Technology Laboratory, University Partnership Fellowship (6 month GSR MS graduate student Kevin Warner).

Pennsylvania Department of Transportation ($2.13 million), May 12, 2004 – May 10, 2007, Interstate – 99, Environmental Research, Research Associate (non – PI).

National Energy Technology Laboratory, Department of Energy, 2005/2006, Environmental Geophysics.

National Energy Technology Laboratory, Department of Energy, 2005, GIS Technologist 12 month GSR in support of Environmental Geophysics.

National Energy Technology Laboratory, Department of Energy, 2007, Reflection Seismic.

National Energy Technology Laboratory, Department of Energy, 2007, Rock Physics.

National Energy Technology Laboratory, Department of Energy, 2007, Risk Assessment.

OTHER AWARDS:

Seismic Micro Technologies, Kingdom Suite+

Landmark, ProMAX 4D, and many other geophysical processing and visualization software packages.

Veritas Hampson-Russell, GLID3D, Elog, Geoview, View3D and other geophysical processing and visualization software packages.

Schlumberger, Petrel and all associated modules.

GX Technology, Earthwave.

Environmental Systems Research Inc., Arc/Info Workstation and all modules

INVITED LECTURES:

1. November 18 1990: *Computerized study of geophysical phenomena*: Computers In Academia lecture series, University of Pittsburgh.
2. December 1, 1992: *Plate tectonics and paleomagnetism of southern Alaska and northeastern Russia*: Department of Geological Sciences Seminar Series, Cornell University.
3. February 18, 1993: *Paleomagnetism of Koryak region, northeastern Russia*: Department of Geological Sciences Seminar Series, Michigan State University.
4. November 4, 1993: *Geological interpretation of Kamchatka, Russia: Constraints from digital residual magnetics, synethetic aperature radar, LANDSAT MSS, digital elevation models, paleomagnetism and previous geological studies*: Department of Geological Sciences Seminar Series, University of Tennessee.
5. January 23, 1996, *What is GIS and why is it important to Russia?*, Center for Russian and East European Studies, Unversity Center for International Studies, University of Pittsburgh.
6. November 18, 1998: *Tectonics of Kamchatka*, Department of Geology and Geophysics, Yale University.
7. March 5, 1999: *Tectonics of Kamchatka*, Geophysical Institute, University of Texas at Austin.
8. January 21, 2000: *Geographical Information Systems and Scientific Collaboration*, Honors College, University of Pittsburgh.
9. September 8, 2000: *Web-based GIS on UNIX and NT Servers*, California University of Pennsylvania, Southpointe Center.
10. October 25, 2000: *Paleomagnetic Perspectives on Accretionary Tectonics*, Geodynamics Seminar, The Pennsylvania State University.
11. January 22-24, 2001: *Arctic GIS Workshop, Reality Roundtable Panelist*, Arctic Research Consortium of the United States (ARCUS), Seattle, Washington.
12. May 11, 2001: *GIS and Visualization*, (two presentations) Mid Atlantic Planetarium Society (MAPS) Meeting, Carnegie Museums (Science and Natural History), Pittsburgh, PA.

13. November 22, 2002: *Serving on the Governor's Commission Investigating Mine Voids and Mine Safety: A Personal Perspective,* Friday Afternoon Lecture, University Honors College.
14. January 25, 2005: "*Life of a Tsunami and Geospatial Analysis of this Coastal Hazard*", panel member in the GSPIA Policy Forum"Tsunami: Causes, Impact, and Response" forum.
15. February 21, 2005: "*Paleomagnetism and Plate Tectonics*", Department of Geography, Geology and the Environment, Slippery Rock University.
16. March 11, 2005: "*Paleomagnetic Perspectives on Accretionary Tectonics: Examples from Kamchatka, Russia*", Department of Geology, University of Akron.
17. April 13, 2005: *"GPS Fundamentals; an informal and rambling review of a revolutionary technology",* Southwest Pennsylvania Chapter of the Sierra Club.
18. August 26, 2005: *"A Web-based Course in the Spatial Analysis of Geohazards using ArcGIS 9.x and 8.x",* 6th Annual Central Appalachian Geo-Spatial Conference, California University of Pennsylvania.
19. October 27, 2005: *"Review of Kamchatka Peninsula Accretionary Tectonics As Constrained By Paleomagnetic Data and an overview of Environmental Geophysics at the University of Pittsburgh",* The Alumni/Shell Oil Company Distinguished Lecture Series, Michigan State University.
20. January 12, 2006: "*Electromagnetic Environmental Geophysics at the University of Pittsburgh*", Department of Geology and Planetary Science Colloquium, University of Pittsburgh.
21. May 25, 2007: "*Geospatial Analysis of Geohazards*", Advances in Spatial Information Science Research Symposium, School of Information Sciences, University of Pittsburgh, Pittsburgh, PA.
22. September 6, 2007: "*Sequestration 101: An overview*", Department of Geology and Planetary Science Colloquium, University of Pittsburgh.
23. October 11, 2007: "*Reflection Seismic and Rock Physics investigations relevant to carbon dioxide sequestration*", Science 2007, University of Pittsburgh.
24. November 2, 2007: "*Concepts and geophysical research at the University of Pittsburgh relevant to CO_2 Sequestion: What, why and when*", Friday Afternoon Lecture, University Honors College, University of Pittsburgh.
25. January 30, 2007:"*A geophysical perspective regarding Russian gas and oil deposits and European energy requirements*", Center for Russian and East European Studies, University of Pittsburgh.
26. January 15, 2009: "*Pennsylvania's Carbon Management Plan, a presentation and discussion*", Department of Geology and Planetary Science Colloquium, University of Pittsburgh.
27. January 16, 2009: "*Pennsylvania's carbon management plane: How much carbon do you use and what do we do about it?*", Friday Afternoon Lecture, University Honors College, University of Pittsburgh.
28. February 3, 2009, "*Russian Energy Update: 2009*", Center for Russian and East European Studies, University of Pittsburgh.
29. June 23, 2009, "*Direct detection of subsurface CO_2*", U.S. Department of State (DOS), Climate Roadshow, National Energy Technology Laboratory.

PROFESSIONAL SOCIETIES-MEMBERSHIP:
Member: Society of Exploration Geophysics (SEG)

SERVICE ACTIVITIES:
Voting Member, University Planning and Budget Committee (9/08-9/11)
Arts and Sciences Nominating Committee (AY 2008)
Voting Member, Senate Council, University of Pittsburgh (7/1/07-6/30/09)
Voting Member, Faculty Assembly (School of Arts and Sciences representative), University of Pittsburgh (2006-2009).
Arts and Sciences Nominating Committee (AY 2008), School of Arts and Sciences elected representative.
School of Arts and Sciences Marshal, University of Pittsburgh 2005 Commencement Convocation.
Arts and Sciences Council (9/04- 4/05). Appointed representative of the Natural Sciences Departments at the University of Pittsburgh.
ECAC- Specialized Computer Laboratories working group (Chair 9/98-9/99).
ECAC- Computing Laboratories (2/93-9/99).
ECAC- Faculty Computing (2/93-9/99).
Information Technologies Steering Committee (ITSC) (2/93-5/96).
Executive Committee on Academic Computing (ECAC) (2/93-5/96).
Senate Computer Usage Committee (Chair 2/93-5/96).
Senate Computer Usage Committee (90-93).
ECAC Advanced Technologies subcommittee (88-5/96).
University of Pittsburgh Tenure Council.
Arts and Sciences Faculty Grants Committee.

Multiple SciTech/GIS Day Carnegie Museum of Science presentations (meet multiple classes of 6-12 grade students presenting GIS science).
Scientific review of "Everyday Science" Radio Program scripts.
Peer review service to the Journal of Geophysical Research, Geological Society of America, Geophysics International, Earth and Planetary Science Letters, and Tectonophysics, Geophysics International.
Multiple years of Docent Training: Carnegie Museum of Natural Sciences.
Peer review of National Science Foundation and other Federal agencies proposals.
Appointed Commissioner on the Governor's Commission on Mine Voids.

Service on recent Ph.D. committees outside of GPS within the University of Pittsburgh:

Cai, Guoray, 1999, A Spatial Modeling Approach to Telecommunications Infrastructure Assessment, Ph.D. thesis, School of Information Sciences, University of Pittsburgh, 149 pp.
Okumura, Hideyuki, 1999, The Relationship Between Structure and Magnetic Properties in Ultra-Fine Grained/Nanostructured FePd Alloys, Ph.D. thesis, Department of Material Sciences, School of Engineering, University of Pittsburgh, 437 pp.

Ku, Cheng-Yu, 2001, Modeling of Jointed Rock Masses Based on the Numerical Manifold Method, Ph.D. thesis, Department of Civil and Environmental Engineering, School of Engineering, University of Pittsburgh, 221 pp.

OTHER SERVICE ACTIVITIES:

Past Faculty Advisor, Beta Chapter, ΣΓΕ, Earth Sciences Honor Society

COURSES TAUGHT:

0030 Introduction to Geography
0045 Natural Sciences (team member, second term)
0840 Restless Earth (Honors section)
1400 Introduction to Geophysics
1410 Applied Geophysics
1445 Introduction to Geographical Information Systems and GPS Methods
1447 Well Logging
1905 Topics in Geographical Information Systems: Undergraduate Independent Research Project.
2110 Plate Tectonics
2430 Paleomagnetism
2446 Advanced GIS/GPS and Computer Methods for Earth Scientists
3940 Topics in Geophysics
3945 Topics in Geographical Information Systems
3946 Advanced ArcObjects Programming using Visual Basic .NET 2003
7840 Restless Earth (External studies)