

CURRICULUM VITA

JAMES B. HARSH

Department of Crop and Soil Sciences
Washington State University
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Residence:

5621 Johnson Rd
Pullman WA 99163
(509) 334-3034

DATE OF BIRTH: October 27, 1951

WSU APPOINTMENT: 35% Teaching 65% Research

FACULTY SPECIALIZATION: Soil Chemistry

EDUCATION

Ph.D. Soil Chemistry: December 1983; University of California, Berkeley

M.S. Soil Chemistry: June 1980; University of California, Berkeley

B.S. Conservation of Natural Resources: June 1974; University of California, Berkeley

PROFESSIONAL EXPERIENCE

Professor/Soil Scientist: July 1, 2000 to present;
Department of Crop & Soil Sciences, Washington State University

Associate Professor/Associate Soil Scientist: July 1, 1990 to July 1, 2000;
Department of Crop & Soil Sciences, Washington State University

Assistant Professor/Assistant Soil Scientist: September, 1983-July, 1990
Department of Agronomy and Soils, Washington State University

Graduate Research/Teaching Assistant: July 1977 to September, 1983;
Department of Plant & Soil Biology, University of California, Berkeley

PROFESSIONAL AND CIVIC ACTIVITIES

Soil Science Society of America
Clay Minerals Society
Mineralogical Society of America
American Chemical Society
Environmental Sciences Division of ACS
American Geophysical Union

PROFESSIONAL RECOGNITION

WSU College of Agriculture and Home Economics Faculty Excellence in Research Award—2000
UC Berkeley Academic Senate Citation: Distinguished Teaching Assistant, 1982-3.
Clay Minerals Society Best Student Paper Award, 1982 Annual Meeting, Hawaii.
Caroline Meeks Memorial Scholarship, July-August, 1982 \$1100.
UC Berkeley Chancellor's Patent Fund Dissertation Research Grant, 1982 \$1500.

RESEARCH

RESEARCH INTERESTS

The chemistry of soil mineral surfaces; physicochemical factors affecting the availability and mobility of ions; the chemistry of noncrystalline soil materials; the synthesis of soil mineral analogs; biogeochemistry of the rhizosphere.

CURRENT PROJECTS

- (1) We are studying the formation and ion exchange properties of aluminosilicate minerals likely to form below caustic waste tanks containing radionuclides and metals at the Hanford Site. We are examining the effect of neof ormation of colloidal materials under the Hanford waste tanks on the sorption and transport of selected radionuclides with a current focus on technetium. In a joint project with Dr. Markus Flury, we are also looking at the transport of colloidal material at a variety of scales, including in the field at Hanford.
- (2) With collaborators from geology, plant pathology, and environmental science, we are examining the role of microorganisms and biofilms in the mobilization of plant nutrients. One project is focused on the transport of Ca, Mg, and K from primary minerals to trees in the presence of fungi and bacteria and the role of solution composition in the plant-microbe-mineral system. The second project will determine the extent of Fe and Mn reduction by rhizosphere bacteria in dryland wheat systems.

SERVICE

COMMITTEES

Crops and Soils Committees

Search committees for Postdocs in soil microbiology and mineralogy.

Agronomy and Soils Club Faculty Advisor since Fall, 1984

Student Faculty Fall Get-Together Committee, 1984-1987

Graduate Studies Committee, 1986-7

Purchase committee for autoanalyzer

Undergraduate Teaching Committee, 1984-5

Attended nearly all Soils Preliminary exams since 1983

Recruitment Committee 1984-1987

Koehler replacement job description committee, 1988

Secretaries appreciation committee, 1989 - 1991

Soil Amendment Registration, indefinite

Search Committee for Soil Fertility Specialist, 1993-5

Search Committee for Soil Physicist Position, 1995-1996

Chair Joe Yenish Tenure Advisory Committee 1996-1999

Member Joe Yenish Tenure Advisory Committee, 1999-2004

Member Dr. B.K. Baik Tenure Advisory Committee, 2005-

Member Soil Pedology Search Committee, 2005-

Appointed Graduate Coordinator of CSS Spring, 2006

Revision of CSS Major Committee, 2006-7.

Recruitment Committee, 2010-

Ann-Marie Fortuna Tenure Advisory

Arron Carter Tenure Advisory

David Brown Promotion Mentoring Committee

CAHNRS Committees

CAHNRS Library Committee, 1988-1991; 1995-
CAHNRS Name Change Committee, Chair 1996-1997
CAHNRS Curriculum Committee for the Applied Biology Degree, 1998-1999.
Teaching Equipment and Scheduling Committee for New Building, 2005

WSU Committees, Centers, Consortia, and Meetings

WSU Graduate School representative on numerous preliminary and final exams
WSU Water Quality Proposal Committee (W. Funk, chairman), 1987
WSU Hazardous Waste Curricula Meeting, 1984
WSU Acid Deposition Consortium, 1985-1988
WSU Hazardous Waste Research Group Member
Elected to WSU Faculty Senate Library Committee 4/27/89
Elected Vice-chair and secretary of Sen. Lib. Comm. 5/90
WSU Search Committee for Library Head, Acquisitions/Serials
Ad-hoc Committee for Maintaining Resources in the Science Libraries, 8/92-
Elected to WSU Faculty Senate for a three year term, Aug., 1993
Participant in WSU Center for Multiphase Environmental Research
Elected to Graduate Studies Committee, 1998-2000.
Chair of the Graduate School's Student Travel Grant Award Committee, 1998-2001.
Member of the Graduate School's Student Travel Grant Award Committee, 1998-2003.
Member of the Faculty Advisory Committee for the WSU/NSF IGERT program
Member of the Graduate School Faculty Academy
Appointed to Misconduct Pre-review committee January, 2006 (completed)
Judge for Honors College Final Projects, 2008
Elected to Faculty Status Committee, 2011

National Committees

National Advisory Committee for the Molecular Sciences Research Center at PNNL
NCR-174 Committee for Synchrotron Radiation Sources for the Agricultural and Environmental Sciences
Associate Editor for Journal of Environmental Quality 1993-1999
Associate Editor for Arid Soil Research and Rehabilitation 1999-
Member of M.L. & Christie Jackson Soil Science Award Committee, 1997-1999
Chair, M.L. & Christie Jackson Soil Science Award Committee, 1998-1999.
DOE-EMSP Review Panel, 2002
USDA NRI Soil Processes Program Review Panel, 2005
NC-1187 Multistate Project: Particulate Matter, Chair, 2010-

REVIEWS

Manuscripts:

Crops and Soils Department (41)
Horticulture Department (3)
Soil Science Society of America (38)
Journal of Environmental Quality (15+): current associate editor 1995-2000
Clays Clay Minerals (7)
Clay Minerals (1)
Journal of Agronomic Education (2)
Univ. of Idaho Soils Department (3)
Univ. of Washington College of Forest Resources, Water Resources Research, Dirasat, Geoderma (2)
Soil Science (3)
CRC Press, SSSA monographs, CRC Press, Geochim. Cosmochim. Acta, Chemistry of Materials, Adv.
Trace Subst. Res., Journal Colloid Interface Sci., Proc. of Heavy Metals in Environment Colloids
and Surfaces, Arid Soils, J. Soil and Sediment Contamination

Univ. Wyoming Soils Dept. (1)
USDA Salinity Lab (1)
Arid Soil Research and Rehabilitation (3); associate editor 1999-2002
Research Award: Dean Hesterberg, North Carolina State University
Promotion to Full Professor: Dean Hesterberg, North Carolina State University

Proposals and projects

Crop and Soil Sciences Department (11)
WSU Water Research Center (numerous)
Montana State University Soils Department (1)
University of Idaho Soils Department (1)
University of Idaho Water Research Center (1)
EPSCoR in Idaho (1)
US Dept. of Energy Proposal (1)
USDA Competitive and NRI Grant Proposals (14)
National Science Foundation Surficial Processes Program in Earth Sci. (8)
National Science Foundation Ecosystems Study Program (1)
National Science Foundation Biogeochemistry (3)
Montana Agricultural Experiment Station CRSS project review (1)
Oxford University Press (1)
Sigma Xi Student Paper Competition (2)

MEETINGS, CONFERENCES, SEMINARS, COURSES

+#American Chemical Society National Meeting, March, 1983
+*West Coast Water Chemistry Winter Carnival, January, 1984
+Western American Chemical Society Meeting, June, 1984
+Soil Science Society of America Annual Meeting, November, 1984
Invited participant in Andisol in PNW field trip involving five PNW universities and the Soil Conservation Service
STEEP Conference, 1984
Conservation Tillage and Integrated Pest Management Demonstrations, 1985-7
WSU Radiation Safety Course, 1984
+*1985 International Clay Conference, Denver, Colorado, 1985
X-ray diffraction workshop at Inter. Clay Conf., Denver, 1985
Invited participant in the 1st Internat'l Soil Correlation Meeting, 1986
+*Soil Science Society of America National Meeting, November, 1986
+*#@Soil Science Society of America National Meeting, November, 1987
+Clay Minerals Society National Meeting, September, 1988
+*@Soil Science Society of America National Meeting, November, 1988
+*International Clay Conference of AIPEA, Strasbourg, France, Aug-Sept. 1989
+*Soil Science Society of America National Meeting, October, 1990
+#American Chemical Society National Meeting, April, 1991
All Agronomy & Soils Teaching Retreats, 1984-90
All Agronomy & Soils/Crops & Soils faculty retreats
Agronomy and Soils Washington field trips 1984-5
+#Second International Symposium On Plant-Soil Interactions at Low pH, 1990
Invited Participant in Argonne Nat'l Lab. Workshop on Applications of Synchrotron Radiation in the Agricultural Sciences. 1990.
Invited Participant in Batelle Workshop to develop a Molecular and Environmental Science Research Center.
+*French Clay Group Annual Meeting. Paris, France. March, 1992.
+#Belgian Clay Group Annual Meeting. Louvain-la-Neuve, Belgium. May, 1992.

#Seminar given to SCPA, a French Potassium Company, Oct., 1991.
#Seminar given to the Center for Surface Chemistry and Catalysis of the Catholic University of Leuven, Belgium. May 21, 1992.
#Seminar given to the National Institute for Agronomic Research, Versailles, France. July 10, 1992.
#Seminar given to the SCPA (Societe Commerciale des Potasses et de L'Azote), Center for Research, d'Aspach le Bas, France. May 18, 1992.
+*Soil Science Society of America and Clay Minerals Society Joint National Meeting, November, 1992 (2 oral presentations)
Attended conference on mine reclamation, Spokane, 5/18/93.
Attended WSU workshop on promoting human diversity in federal programs. 4/20/93.
Attended WSU Sexual Harassment Training. Spring, 1993.
Attended S-9, soil mineralogy, pre-meeting workshop, SSSA, 1994
+*#Soil Science Society of America National Meeting, November, 1994
+*Third International Conference on the Biogeochemistry of trace elements. Paris, France. May, 1995
Studied soil sites in Ticino Valley, Switzerland as a collaborator in a Swiss National Science Foundation project, May, 1995
+*Pacific Division, AAAS and WSSSA. Vancouver, B.C. June, 1995.
+*#Soil Science Society of America National Meeting, November, 1997
+*Soil Science Society of America National Meeting, November, 1998
+*Soil Science Society of America National Meeting, November, 1999
#EMSP National Workshop, Atlanta GA April 2000
EMSL Tutorial on Methods in Nanoscience, June, 2000.
+*Soil Science Society of America National Meeting, November, 2000
EMSP National Workshop, Richland WA November, 2000.

+Professional meeting
*Volunteered paper given
#Invited paper given
@Chaired session

OTHER SERVICE

Obtained \$10,000 from WSU Provost's Special Equipment Fund for update of the IL 451 Atomic Absorption Spectrophotometer to a 951 AA.
Obtained a used IL 457 AAS from the WSU Chemistry Department as well as \$1100 from CAHE teaching budget for parts, supplies, and installation.
Participated in the NSF Young Scholars Program, 1988.
Participated in ACS National Chemistry Week demonstrations for 6th grade students, 1994

HONARIUMS

From the College of Forestry at the University of Washington--\$200.
From the Center for Surface Chemistry of Materials, Catholic University, Leuven, Belgium--Travel expenses.
From Batelle Memorial Institute (PNNL) \$1500 for continuing participation on the Environmental and Molecular Science Laboratory Advisory Committee

CONTINUING EDUCATION

Quantitative Mineral Analysis of Clays and Other Minerals. Denver, CO, July 1985. Organized by the Clay Minerals Society.
Magnetic Resonance Methods in Clay Science Workshop. Grand Rapids, MI, Sept., 1988. Clay Minerals Society.

Writing Across the Curricula Workshop. Sponsored by WSU. August, 1988.

Invited participant in Argonne National Laboratory Workshop: "Synchrotron X-ray sources and New Opportunities in the Agricultural and Related Sciences, 1991."

Enrolled in French 101 Fall and Spring semesters, 1990-1.

Participated in Synchrotron Radiation in the Environmental Sciences Workshop. SLAC, Stanford CA 5/24-25/93.

Participated in workshop on phytoremediation in Seattle WA June, 1997.

Chosen as participant in a WSU/CSS/CAHNRS Grant Writers Workshop for academic year 2005-2006.

TEACHING

Appointed to Graduate Faculty November 7, 1984

Undergraduate

Soils 421, Soil Chemistry, 3 cr., I 1983 (18); I 1984 (27); I 1985(23); I 1986 (20); II 1988 (25); II 1989 (20); II 1990 (24); II 1991 (15); II 1993 (25); II 1994 (30); II 1995(23); II 1996(28); II 1997(25); II 1998; II 1999; II 2000; II 2001; I 2003; II 2005 (5); II 2006 (9); II 2007; II 2008; II 2009; II 2010 (8)

Overall rating 83-95: 4.30*

Soils 422/442, Soil Analysis, 3 cr., I 1984 (8); I 1985 (6); I 1986 (10); II 1989 (13); II 1993 (taught as Soils 503) (11); II 1994 (21); II 1995 (10); II 1996 (11); II 1997(22); II 1998 (9); II 1999; II 2000; II 2001; II 2002; I 2005 (7); I 2006 (15); I 2007; I 2008; I 2010 (8);

Overall rating 84-89: 3.8

Ratings for 93: 4.6; 94: 4.2

Soils 499, Special Problems, 2 cr., I 1985; II 1986; 3 cr., II 1987, I 2009 (8); I 2010 (1)

Graduate

Soils 522/521, Advanced Soil Chemistry, 3 cr., II a/y 1984 (6); II 1986 (14); I 1988 (10); 1993 (8); 1998 (6); II 2000; II 2001; II 2002; II 2003; II 2005(5); II 2006; II 2007; II 2008; II 2009

Overall rating 84-89: 4.3

Rating for 93: 4.6

Soils 514/502/600, Advanced Topics, 1 cr., I 1983 (9); II 1985 (6); I 1990 (8); II 1991 (8); II 1992 (6);

Soils 512/501, Seminar, 1 cr., I 1984 (5); II 1985 (2); I 1994 (2); II 1995 (2)

Soils 503, Adv. Soil Analysis. 1988 II (2); 1989 I (2); 1995 (1); 2006 (4); 2007 (4); 2008 (2); 2010 (10); 2011 (3);

Soils 502, CSS State Tour 2008 (12); 2011-soil chemistry (2)

Soils 505, Teaching Practicum. 1996. II (1); 2010 (1)

Soils 503, Vadose Zone Processes, 2 cr.: Spring 2011 (17)

Contributed four hours of lecture to Agricultural Engineering 551 on irrigation and drainage water quality.

Collaborated in the teaching of a module on the Kesterson Reservoir problem for AgHE 404, Ethics in Agriculture: 1987 I; 1988 I.

Participated in the 1988 WSU summer workshop: "Writing Across the Curricula".

Participated in the 1990 WSU workshop on the Case Study Teaching Method.

Participated in the 2008 CAHNRS Experiential Learning Workshop.

Participated in Geology 595 seminar course taught by Kent Keller. (Gave seminar and attended all seminars given by students).

* Ratings are based on a scale from 1 to 5.

Graduate Student Committees:

Chair:

M.S.

M. Mohammad, M. S., 1986

X. Shihe, M. S., 1988

T. Murarik, M. S. (disenrolled, 1991)

C. Sherony, M.S., 1999

M. Powell, M.S. (disenrolled)

T. Thomas, M.S. (2002)

G. Wellfinger, M.S., (2002)

J. Latimer, M.S. (2010)

Yahya Alwahaibi (2011)

Ph.D.

X. Shihe, Ph.D., 1991

C. Su, Ph.D., 1992

E. Rochette, Ph.D., 1994

H. Dion, Ph.D. 2001

K. Mashal, Ph.D. (2003)

A. Wooten, Ph.D. (withdrew)

L. Wendling, Ph.D. (2004)

M. Grant, Ph.D. (current)

J. Dickson, Ph.D. (current)

M. LeTourneau (current)

Member:

M. S.

C. Root, 1984

S. Feldman, 1990

A. Stodola, 1986

Y. Cheng, 1987

A. Bumaya, 1987

PhD.

Y. Nor, 1984

C. Hunter, 1988

S. Rahimi, 1986

T. Brown, 1986

R. Lehman, 1986

D. Mathaba, 1986	J. Zachara, 1987
M. Sukop, 1989	G. Tuxhorn, 1989
P. Kennedy, 1991	S. McGeehan, 1992
D. Wulf, 1988	N. Ghazi, 1990
J. Lafer, 1991	B. Danesh, 1990
P. Vanasten, 1990	D. Yates, 1993
R. Beyke, 1991	M. Mohammed, 1993
C. Perillo, 1991	D. Holford, 1997
P. Kaczmarcyck, 1991	P. Stanton, 1998
R. Crum, 1992	C. Guo, 1994
P. Boellier	R. Roe, 1995
S. Dilly, 1995	S. Feng, 1996
J. Brantner, 1995	S. Loyland, 2000
J. Schnabel, 1996	R. O'Brien, 2000
C. Albanese, 1997	R. Wong (withdrew)
K. Labno, 2001	D. Wellman, 2004
D. Cox, 1998	J. Mejias, 2005
J. Martin, 1998	C. Gillaspie, 2003
M. Lugo, 2000	M. Douglas, 2004
L. Walls, 1999	S. Czigany, 2004
J. Havig, 2002	B. Ketchum, 2005
K. Cherrey, 2002	J. Mon, 2006
H. Kurosaki, 2003	R. Payne, 2006
S. Gebremariam, 2010	J. Shang, 2008
I. Wildey, 2002	K. Rod
T. Brown, 2006	A. Choiniere
S. Wetterau	S. Gebremariam, 2011
S. Al-Khader (Jordan)	R. Bricklemyer
	M. Boggs
	Z. Liu
	N. Chatterjee
	S. Aramrak
	G. Birkhauser
	W. Suliman
	A. Dohnalkova