

Dr. MATTHEW J. LA FORCE
Department Chair Engineering Sciences
Clackamas Community College
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EDUCATION

Post Doctoral Fellow *Stanford University* Jan. 2000 – Sept 2000
Research Topic: Temporal Bioaccessibility of Arsenic, Chromium, and Lead.
Mentor: Scott Fendorf

Ph.D. Soil Science/Soil Chemistry *University of Idaho* Jan. 2000
Dissertation Title: Seasonal Cycling of Redox-Active Metal(loid)s within Mining-
Impacted Wetlands.
Major Professor: Scott Fendorf

M.S. Geology *University of Idaho* Dec. 1996
Thesis Title: The Effects of Simulated Dredging and Flooding on Trace-Element Rich
Sediments in Lake Coeur D'Alene and the Coeur D'Alene River, Idaho.
Major Professor: Kenneth Sprenke

B.S. Geology/Environmental Sciences *Cortland College* Aug. 1994
Minor in Biological Sciences
Senior Thesis Title: A Geophysical Investigation of the Port Leyden Nelsonite.
Major Professor: Robert Darling

PROFESSIONAL EXPERIENCE

Department Chair Engineering *Clackamas Community College* 2008, 2011-Present
Director Oregon Backflow Training *Clackamas Community College* 2008-Present
Professor *Clackamas Community College* Sep. 2006-Present
Assistant Professor *San Francisco State (SFSU)* Aug. 2001 - 2006
Post Doctoral Scientist/Instructor *Stanford University* Jan. 2000 - Sept. 2000
Visiting Researcher *Stanford University* Mar. 1999 -Dec. 2000
Teaching and Research Assistant *University of Idaho* Aug. 1995 - Jan. 1999

COURSES INSTRUCTED

Fifty courses instructed over 25 years at University of Idaho, Stanford, San Francisco State University and Clackamas Community College.

-All teaching evaluations have been excellent and are available upon request.

Water Distribution I, Water Treatment I-II, Mathematics For Water and Wastewater Operation, Water and Wastewater Operations I-III, Environmental Chemistry I and II, Elementary and Aquatic Microbiology, Wastewater Collections, Hydraulics, Geostatistics, Contaminant Hydrogeology, Hydrogeology, Environmental Geology, Planetary Climate Change, Introductory Geology, Soil Science

Matthew La Force's Curriculum Vitae

HONORS AND AWARDS

Western Soil Science Society of America	
1 st place oral presentation	June 2000
Pacific Division of AAAS	
1 st place oral presentation	June 2000
American Association for Advancement of Science (AAAS)	
1 st place oral presentation	June 1996
Pacific Division of AAAS	
Sunshine Mining Award for Excellence in Geosciences	June 1996
Pacific Division of AAAS	
Robert I. Larus Travel Award	June 1996
<i>Sigma Xi</i> Excellence in Research and Writing, SUNY Cortland	May 1994

PROFESSIONAL ORGANIZATIONS AND EDITORIAL AFFILIATIONS

Board of Directors/Educational Representative
 Oregon Environmental Services Advisory Council
Member of Oregon DEQ Operator Certification Program Advisory Committee
Member of Oregon Water and Education Foundation
Member of Waterworks Short School Clackamas Community College
Member of the Oregon Cross Connection Specialist Regional Subcommittee
Member of USC Foundation For Cross Connection Control
Director Oregon Backflow Training Program
President West Linn Youth Lacrosse
Vice President West Linn Youth Lacrosse
Past President of Western Soil Science Society of America
Past Secretary/Treasurer of Western Soil Science Society of America
Past Executive Committee Member - American Association of Advancement of Sciences
 -Pacific Division
Ad hoc reviewer for *Applied Geochemistry*, *Environmental Science and Technology*,
Journal of Environmental Quality, and *Soil Science Society of America Journal*.

PUBLICATIONS

Book Chapters

Hansel, C.M., M.J. LaForce, S.E. Sutton, and S. Fendorf. 2002. Ecosystem Dynamics of Zinc and Manganese within a Mine-Waste Impacted Wetland. In S. Wood and R. Hellmann (Eds.) "Water-Rock Interactions, Ore Deposits, and Environmental Geochemistry, A Tribute to David A Crerar", Geochemical Society Special Publication, Geochemical Society of America. 411-454.

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Research Articles

- Fendorf, S.E., M. La Force, and G.C. Li. 2004. Temporal Changes in Soil Partitioning and Bioaccessibility of Arsenic, Chromium, and Lead. *J Environ Qual* 33: 2049-2055.
- C.M. Hansel, M.J., La Force, S.E. Fendorf and S. Sutton. 2002. Spatial and temporal association of As and Fe species on aquatic plant roots. *Environ. Sci Technol.* 36:1988-1994.
- La Force, M.J., C.M. Hansel, and S.E. Fendorf. 2002. Seasonal transformation of manganese in a Palustrine Emergent Wetland. *Soil Sci. Soc. Am. J.* 66:1377-1389.
- Bostick, B.C., C.M. Hansel, La Force, M.J., and S.E. Fendorf. 2001. Seasonal fluctuations in Zn speciation within a contaminated wetland. *Environ. Sci. Technol.* 35:3823-3829.
- La Force, M.J., G.C. Li, and S.E. Fendorf. 2000. Arsenic speciation, seasonal transformations, and co-distribution with iron in a mine waste palustrine emergent wetland. *Environ. Sci. Technol.* 34:3937-3943.
- La Force, M.J. and S.E. Fendorf. 2000. Solid phase iron characterizations during common selective sequential extractions. *Soil Sci. Soc. Am. J.* 64:1608-1614.
- La Force, M.J., C.M. Hansel, and S.E. Fendorf. 2000. Constructing simple wetland sampling devices. *Soil Sci. Soc. Am. J.* 64:809-811.
- La Force, M.J., S.E. Fendorf, G.C., Li, and R.F. Rosenzweig. 1999. Redistribution of trace elements from contaminated sediments of Lake Coeur d'Alene during oxygenation. *J. Environ. Qual.* 28:1195-1201.
- Harrington, J.M., M.J. La Force, W.C. Rember, S.E. Fendorf, and R.F. Rosenzweig. 1998. Phase associations and mobilization of iron and trace elements in Coeur d'Alene Lake, Idaho. *Environ. Sci. Technol.* 32:650-656.
- La Force, M.J., S. Fendorf, G.C. Li, G.M. Schneider, and R.F. Rosenzweig. 1998. A laboratory evaluation of trace element mobility from flooding and nutrient loading of Coeur d'Alene river sediments. *J. Environ. Qual.* 27:318-328.

Matthew La Force's Curriculum Vitae

Professional Papers

- C. Oze, M.J. La Force, C. Wentworth, D.K. Bird and R. Coleman. 2002. Assessing mineral weathering and chromium geochemistry in the Willow Core, Santa Clara County, Ca. United States Geologic Survey Open File Report 2002
- M.J. La Force, J. Neiss. 2002. Assessing serpentine soil geochemistry and distribution. Inspiration Point, Presidio, San Francisco, Ca. Open File Report 2002

INVITED PRESENTIONS AND LECTURES

- La Force, M.J., and S.E. Fendorf. 1996. Trace element mobility in the Coeur d'Alene Basin. Northwest Science Association. Spokane, WA.
- Fendorf, S.E., M.J. La Force, and C.M. Hansel. 2000. Trace element cycling within wetland ecosystems. Peninsula Geologic Society Meeting, Stanford, CA.
- La Force, M.J., and S.E. Fendorf. 2000. Arsenic speciation and co-distribution with Fe in a palustrine emergent wetland. Western Soil Science Society of America, Ashland Or.
- La Force, M.J. 2002. 4th Biennial San Francisco Ecological Restoration Conference. San Francisco Recreation and Parks Department. Hosted workshop on native soils and bioremediation. Randall Museum.
- La Force, M.J. 2002. Sustainable Park Workshop Series. San Francisco Recreation and Parks Department. Hosted workshop on diagnostic soil properties and the 12 soil orders. Randall Museum.
- La Force, M.J. 2003. The geochemistry of serpentine soils at inspiration point. San Jose State Geology Department.
- Invited Guest Lecture, Stanford University. 2001. Science of Soils. Created and implemented pedology and Keys to Soil Taxonomy lectures.
- Invited Guest Lecture, Stanford University. 2001. Science of Soils. Created and implemented pedology and Keys to Soil Taxonomy lectures.
- Invited Guest Lecture, Taylor Middle School. Implemented a guest lecture on rock and mineral identification. I encouraged students to appreciate the importance of the geosciences.
- Invited Guest Lecture, Sequoia High School. I implemented a guest lecture on soil formation and agriculture.

Matthew La Force's Curriculum Vitae

Papers presented at professional meetings

- La Force, M.J., R. Hay, and B. Darling. 1994. A geophysical investigation of the Port Lyeden Nelsonite. Geological Society of America, Binghamton, NY.
- La Force, M.J and S.E. Fendorf. 1996. Trace element dynamics in the Coeur d'Alene Basin. Northwest Science Association. Spokane, WA.
- La Force, M.J, G.C. Li, and S.E. Fendorf. 1996. Trace element cycling from dredging of Lake Coeur d'Alene, Idaho. Pacific Division American Association for Advancement of Science. San Jose, CA.
- La Force, M.J, G.C. Li, and S.E. Fendorf. 1996. Trace element mobility as a consequence of dredging Lake Coeur d'Alene, Idaho. American Association for Advancement of Science. Seattle, WA.
- La Force, M.J, G.C. Li, and S.E. Fendorf. 1997. Trace element mobility from flooding and nutrient loading of Coeur d'Alene River sediments. Soil Science Society of America. Anaheim, CA.
- La Force, M.J, G.C. Li, E.A. Rochette, and S.E. Fendorf. 1998. Trace element attenuation within a mine waste contaminated wetland. Soil Science Society of America. Baltimore, MD.
- Bostick, B.C., La Force, M.J, C. M. Hansel, and S.E. Fendorf. 1998. Localized structure of Zn in reducing environments. Soil Science Society of America. Baltimore, MD.
- La Force, M.J, C. M. Hansel, and S.E. Fendorf. 1999. Iron and As mobility in a contaminated wetland. Stanford Synchrotron Radiation Laboratory Users Conference. Stanford, CA
- La Force, M.J, B. Wielinga, G.C. Li, and S.E. Fendorf. 1999. Redox dynamics of trace elements in wetland soils. Soil Science Society of America. Salt Lake City, UT.
- La Force, M.J., and S.E. Fendorf. 2000. Arsenic speciation, seasonal transformations, and co-distribution with iron in a mine waste palustrine emergent wetland. Western Soil Science Society of America. Ashland, OR.
- La Force, M.J. M. Barnett, P.J. Jardine, and S.E. Fendorf. 2000. The effects of residence time on contaminant bioavailability. Soil Science Society of America. Minneapolis, MN.

Matthew La Force's Curriculum Vitae

La Force, M.J. M. Barnett, P.J. Jardine, and S.E. Fendorf. 2001. The effects of residence time on contaminant bioavailability. Western Soil Science Society of America. Moscow, Id.

Jim Neiss, M.J. LaForce. 2002. Influences of non native plants on the geochemical influences of a serpentinite soil. Presidio, San Francisco, Ca. Geological Society of America. Corvallis, OR

Erdmann Rogge and Matthew J. La Force. 2002. Hydrostratigraphy of the Westside Groundwater Basin, San Francisco and San Mateo Counties, California American Geophysical Union. San Francisco California.

Erdmann Rogge and Matthew J. La Force. 2003. Hydrostratigraphic Units of the Westside Groundwater Basin, San Francisco and San Mateo Counties, California. American Association for Advancement of Science Pacific Division and Western Soil Science Society of America Abstract and Programs. San Francisco State University, Ca 19.

Charlotte Hedlund and Matthew J. La Force. 2003. Hydrogeology and Geochemistry of the Montara Moss Beach Aquifer System Geological Society of America. Geologic Society of America Abstract and Programs. Puerto Vallarta, Mx. A-25.

Matthew J. La Force and Megan Simpson. 2004. Background Trace Element Concentrations in the Franciscan Complex. WSSA/PDAAAS, Logan Utah.

GRANTS

M. La Force. 2011. \$28,000. Future Connects. City of Portland. Funded

Nurmi, J.T and La Force, M.J. 2012. \$129,481. EPA Small Water System Grant. CCC WET Online Course for Small water systems. Submitted.

M. LaForce and J. Lewis. 2008. \$~2,500. CCC Foundation Mini-grant for multiprobe use at ELC. Funded and then funding rescinded by CCC.

M. La Force and K. Grove. 2006. \$24,948. Hydrostratigraphic investigation of the North Westside Basin of San Francisco and northern San Mateo Counties. San Francisco Public Utilities Commission.

L. White, K. Grove, M. La Force, R. Pestrone, D. Dempsey, O. Garcia, and T. Garfield, 2005. \$205,218. Opportunities to Enhance Diversity in the Geosciences program, "Reaching Out to Communities and Kids with Science in San Francisco-SF-ROCKS". National Science Foundation. Funded

Matthew La Force's Curriculum Vitae

- M.J. LaForce, B.Manning, A. Ichimura, and S. Bollens. 2005. \$192,100. Acquisition of a powder X-ray diffraction instrument for environmental analysis and educational outreach. National Science Foundation: Major Research Instrumentation program. Funded.
- L. White, K. Grove, M. La Force, R. Pestrone, D. Dempsey, O. Garcia, and T. Garfield, 2004. \$279,118. Opportunities to Enhance Diversity in the Geosciences program, "Reaching Out to Communities and Kids with Science in San Francisco-SF-ROCKS". National Science Foundation. Funded
- M.J. LaForce. 2004. \$5,000. Determination of the pre-1890 paleolake bottom of the eastern arm of Mountain Lake, Presidio, California. Presidio Trust. Funded.
- L. White, K. Grove, M. La Force, R. Pestrone, D. Dempsey, O. Garcia, and T. Garfield, 2003. \$263,863. Opportunities to Enhance Diversity in the Geosciences program, "Reaching Out to Communities and Kids with Science in San Francisco-SF-ROCKS". National Science Foundation. Funded
- M.J. LaForce and J. Caskey. 2002. \$20,600. Geochemical and Surficial soils/geologic boundary mapping at the Presidio. Presidio Trust. Funded.
- M.J. LaForce. 2001. 5,000\$. Evaluation of nutrient levels in Elkhorn Slough. SFSU mini grant. Funded.
- M.J. LaForce and K. Strathmann. 2001. 10,465\$. Study of soils and geologic boundaries at Inspiration Point, Presidio Ca. Presidio Trust. Funded.
- C. Oze, M.J. LaForce, R. Coleman, and D.K. Bird. 2001. 6,740\$. Assessing mineral weathering and chromium geochemistry in the Willow Core, Santa Clara County, CA. United States Geologic Survey. Funded.
- M.J. LaForce. 2001. 306,022\$. Assessing benthic and planktonic habitats via microbial enumerations coupled with sediment and porewater geochemical analysis of Elkhorn Slough. Monterey Bay National Marine Sanctuary. Not Funded.
- M.J. LaForce and B. Manning. 2001. 279,032\$. Field and laboratory investigation of selenium cycling and speciation in the San Joaquin River. United States Department of Agriculture-National Research Initiative. Not Funded.
- M.J. LaForce and B. Manning. 2001. 1,042,984\$. Field and laboratory investigation of selenium cycling and speciation in San Francisco Bay and the San Joaquin River. CALFED. Not Funded.

Matthew La Force's Curriculum Vitae

M.J. LaForce, B.Manning, A. Ichimura, and S. Bollens. 2004. \$192,100. Acquisition of a Powder X-ray Diffraction Instrument for Environmental Analysis and Educational Outreach. NSF:MRI program. Funded.

L. White, K. Grove, R. Pestrong, N. Garfield, D. Dempsey, and M.J. LaForce. 2003. 1,200,000\$. Reaching Out to Communities and Kids with Science in San Francisco: SF ROCKS. NSF. Funded.

M.J. LaForce. 2001. 306,022\$. Assessing benthic and planktonic habitats via microbial enumerations coupled with sediment and porewater geochemical analysis of Elkhorn Slough. Monterey Bay National Marine Sanctuary. Not Funded.

M.J. LaForce and L. White. 2001. 208,901\$. Hydrologic Investigation of the Islais Creek Watershed. Prop 13 CALFED Drinking Water Program. Not Funded.

M.J. LaForce and B. Manning. 2001. 279,032\$. Field and laboratory investigation of selenium cycling and speciation in the San Joaquin River. United States Department of Agriculture-National Research Initiative. Not Funded.

STUDENT ADVISING-* committee member

Erdmann Rogge. 2003. MS thesis: Hydrostratigraphy of the Westside Groundwater Basin, San Francisco and San Mateo Counties, California

Charlotte Hedlund. 2003. MS thesis: Hydrogeology and Geochemistry of the Northern Groundwater Basin, San Mateo County, California

Megan Simpson. 2004. MS thesis: Investigating Background Trace Element Concentrations in the Franciscan Complex San Francisco, California

Peter Gorman. 2004. MS thesis: Temporal and Spatial Variability of Hydraulic Conductivity in the Russian River Streambed, Sonoma County, California.

Andrew Matthew. Expected 2005. MS thesis: A Geochemical and Geophysical Investigation of the Serpentine Soils at the Presidio, San Francisco, Ca.

*Kasha Parker. Fall 2004. MS thesis: Surficial Sediment Distribution and Changes in the Central San Francisco Bay Along the Southeastern Tiburon Peninsula.

*Chimi Yi. Expected Fall 2004. Depositional and Deformational History of the Colma and uppermost Merced Formations along the coast of San Francisco
Doug Wood. Senior Thesis 2001. Determination of the bioavailability to humans of the metals As, Cr, and Pb with respect to soil ingestion.

Jim Neiss. Senior Thesis 2002. The geochemistry of serpentine soils at Inspiration Point Presidio, San Francisco, Ca. Fall 2002.

*Joe Petsche. Senior Thesis 2003. Delineation of Sub-surface Serpentinite Boundaries with the San Francisco Presidio.

*Mahasringha M. Monroe. Senior Thesis 2003. Late Pleistocene Uplift Along the Seal Cove Fault Using Emergent Marine Terraces, Moss Beach, California.

Jane Duxbury. Senior Thesis 2004. Determination of the Pre-1890 Paleolake Bottom of the Eastern Arm of Mountain Lake, Presidio, California.

REFERENCES

John Lewis
Emeritus Engineering Science Department Chair
Clackamas Community College
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Oregon City OR 97045

Dr. James Nurmi
Water Quality Instructor
Engineering Science Department Chair
Clackamas Community College
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Oregon City OR 97045