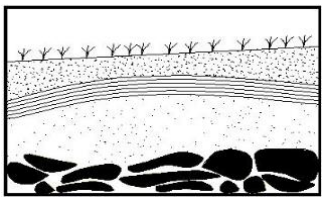

Lanchester Soil Consultants, inc.

325 East Avondale Road **610.637.4118**
West Grove, PA 19390
www.soildude.com soildude@comcast.net

Russell L. Losco, M.A., P.G., C.P.S.S.

Summary of Education & Experience

Mr. Losco is a seasoned soil scientist and geologist with over 34 years of experience in soil mapping, site investigation, geomorphology, soil testing, on-site wastewater disposal and recycling testing and design, environmental investigation and soil and geologic research. He is an adjunct faculty member at the Delaware County Community College and at West Chester University. He is active in research and publishes regularly and is the lead author of the **PAPSS Manual for Soil Investigation in Pennsylvania** and the upcoming book **The Bold Travelers Guide to the Geology of Costa Rica** as well as numerous scientific papers and a chapter in the book **Soils and Human Health**. Mr. Losco has handled high-definition soil mapping and geomorphological analysis projects ranging in size from less than one acre to several thousand acres. He has accurately and consistently mapped upland, urban and alluvial soils, correcting and updating published maps. Through original research he has discovered unique geologic features in the Delmarva Peninsula and previously unknown processes in soil development. In collaboration with the United States Environmental Protection Agency, he has developed and implemented a protocol for characterizing and mapping urban soils for use in green infrastructure and urban renewal.

EDUCATION:

I**ndiana University of Pennsylvania** - Bachelor of Arts in Anthropology/Archaeology - 1981

West Chester University - Master of Arts in Physical Science-Earth Science - 2009
Graduate Assistant in Department of Geology and Astronomy 2007-2009

University of Delaware - Graduate Coursework in Soil Science - 1995-96

Delaware Valley College - Coursework in Soil Science - 1992-93

Temple University - Coursework in Plant Science - 1996-97

Gloucester County College - Coursework in Chemistry - 1983-84

Glassboro State College (now Rowan University) - Graduate Coursework in Genetics - 1985

Cecil Community College - Coursework in AutoCAD - 2001

CREDENTIALS:

SSSA Certified Professional Soil Scientist	#22586
Pennsylvania Professional Geologist	#PG004953
Delaware Department of Natural Resources And Environmental Control Class 'A' Percolation Tester License	#2202
Class 'B' Sewage System Designer License	#2202
Class 'D' Site Evaluator License (Soil Scientist) License	#2202
Pennsylvania Department of Environmental Resources Certified Sewage Enforcement Officer	#01941
Pennsylvania Registered Sanitarian	#255

PROFESSIONAL AFFILIATIONS:

Pennsylvania Association of Professional Soil Scientists
Associate Member 1994 to 1997
Professional Member 1997 to Present
Board of Directors Member 2003 to 2012
Vice President 2004, 2012
President 2005, 2006

Mid-Atlantic Association of Professional Soil Scientists
Member 2016-Present

Soil Science Society of America / American Society of Agronomy
Member 1994 to Present
Member of SSSA S493 Hubert J. Byrd Sr. Scholarship Committee 2012-Present
Chair of SSSA S493 Hubert J. Byrd Sr. Scholarship Committee 2012-2014

Pennsylvania Council of Professional Geologists
Member 2008 to present
Board of Directors Member 2015 to 2020

Pennsylvania Association of Sewage Enforcement Officers
Member 1988 to Present
Director-At-Large for Delaware and Philadelphia Counties
February 1993 to February 1997

Geological Society of America
Member 2006 to Present

DISTINCTIONS AND ACHIEVEMENTS:

Awarded 2015 United States Environmental Protection Agency Scientific and Technological Achievement Award – Honorable Mention for Research on Understanding the Nature of Urban Soils and Their Role in Stormwater and Sewer Management

Member of Soil Certification Task Force to Develop New Soil Credentialing Program for the Soil Science Society of America, 2016

Associate Editor Soil Survey Horizons
2008 to 2012

Member of West Chester University of Pennsylvania
Professional Science Master's Program Advisory Board

Assistant Coach of West Chester University of Pennsylvania Soil Judging Team 2010 & 2014

Member of Advisory Committee to Develop Performance Objectives for Soil Scientist Examinees – Soil Science Society of America, 2012

Nominated for the Gould Award for Teaching Excellence at Delaware County Community College – 2012

1993 Northeast Regional Collegiate Soil Judging Contest
Individual High Score - 10th Place

Professional Background:

Adjunct Professor West Chester University of PA	August 2015 to Present West Chester, PA
Adjunct Professor Delaware County Community College	August 2011 to Present West Grove, PA
Principal Soil Scientist & Geologist Lanchester Soil Consultants, Inc.	July 1993 to Present West Grove, PA
Environmental Designer/ Soil Scientist James C. Kelly & Associates, Inc.	July 1989 to July 1993 Glen Mills, PA
Environmental Health Specialist Chester County Health Department	March 1987 to July 1989 West Chester, PA

May 16, 2021

PAPSS
c/o Bruce Willman, CPSS

Reference: PAPSS Pennsylvania Soil Certification Board

Dear PAPSS:

This cover letter and resume are in response to the PAPSS Board's request for Certified Professional Soil Scientist volunteers to be chosen for the Pennsylvania Soil Certification Board, which will work in conjunction with the Soil Science Society of America per the Memorandum of Understanding relative to certification of soil scientists in the State of Pennsylvania.

I am a proud Delaware Valley University graduate and have worked as a consulting soil scientist for the past 19 years in Southeastern Pennsylvania. I received my national Certified Professional Soil Scientist (CPSS) certification in 2008 and am a member of the Pennsylvania Association of Professional Soil Scientists (PAPSS). In the past 19 years I have seen soil science become a very integral part in land development, redevelopment, nutrient management, and sustainability projects. As a consulting soil scientist, I have worked on many different types of projects that have needed on-lot sewage disposal, stormwater management systems, and/or geotechnical investigations completed in order to provide the necessary soil science information/recommendations to aid in site approvals. I have performed work throughout central and eastern Pennsylvania, as well as other adjacent states when needed.

Thank you for your consideration and please let me know of any questions you may have regarding my qualifications, or if you need any more information.

Respectfully Submitted,

Matthew C. Hostrander, CPSS, SEO
Professional Soil Scientist

MATTHEW C. HOSTRANDER, CPSS, SEO

900 QUARRY ROAD, PERKASIE, PA 18944
HOME # 215-855-6120 · CELLULAR # 215-778-5284
EMAIL – mhostrander@vw-consultants.com

RELEVANT WORK EXPERIENCE

March 2017 - Present — VW Consultants, LLC — Quakertown, PA
Professional Soil Scientist

Provide project management and technical field expertise for on-lot sewage disposal systems, stormwater infiltration testing, and various other soil related consulting services within the company. Responsibilities include soil log profiling; soil mapping or remapping efforts; pre- and post-construction stormwater infiltration studies; on-lot sewage disposal system testing, planning and design for residential, commercial and institutional projects; subsurface geotechnical investigations; alluvial and floodplain soil studies; and Act 537 sewage facilities plan preparation. Proficient in USDA and USCS soil classification systems.

June 2002 - March 2017 — Gilmore & Associates, Inc. — New Britain, PA
Soil Services Manager

Provide project management and technical field expertise for the geotechnical and environmental departments within the firm. Manager responsibilities include soil log profiling; soil mapping or remapping efforts; pre- and post-construction stormwater infiltration studies; on-lot sewage disposal system testing, planning, design, and drafting; subsurface geotechnical investigations; alluvial and floodplain soil studies; construction inspections; pavement design investigations; municipal ordinance creation and review; Act 537 sewage facilities plan preparation; and review of on-lot sewage disposal planning modules and stormwater infiltration reports and designs for municipal clients.

EDUCATION

1998 – 2002 — Delaware Valley University — Doylestown, PA
Bachelor of Science Degree – Agronomy and Environmental Science
Specialization – Soils and Environmental Science
Cumulative GPA – 3.85/4.0 Graduation – May 2002

OTHER EXPERIENCE

- Organized and presented educational discussions to local school students, college students, and other professionals about the importance of soil and a professional soil scientist's role in preventing soil erosion and water quality degradation.
- Proficient in AutoCAD, numerous retaining wall design software, and the Microsoft Office Suite.
- Attended numerous seminars and conferences that aid in professional development in the soil science and environmental fields.
- Health & Safety Committee member for five years while at Gilmore & Associates.

ASSOCIATIONS/CERTIFICATIONS

Certified Professional Soil Scientist
Soil Science Society of America (SSSA) - Member
Pennsylvania Association of Professional Soil Scientists (PAPSS) - Member
Pennsylvania Association of Sewage Enforcement Officers (PASEO) - Member
Certified Pennsylvania Sewage Enforcement Officer
Bucks County Council Member of Penn State Extension
OSHA confined space trained, ladder safety, fall protection, electrical and trench safety trained, CPR, and AED.

REFERENCES AVAILABLE UPON REQUEST

Patrick J. Drohan, Ph.D.

116 ASI Building, Ecosystem Science and Management Department
The Pennsylvania State University, E-mail: pjd7@psu.edu, Phone: 814-863-4246

Professional Preparation

Rutgers University	Natural Resource Management	B.S.	1992
The Pennsylvania State University	Environmental Pollution Control	M.S.	1996
The Pennsylvania State University	Soil Science	Ph.D.	2000

Appointments

2013-present	Associate Prof., The Pennsylvania State University, Dept. Ecosys. Sci. & Mgmt.
2007-2013	Assistant Prof., The Pennsylvania State University, Dept. Crop and Soil Sciences
2006-2007	Director, Pine Lake Institute for Env. and Sust. Studies, Hartwick College
2004-2006	Assistant Prof., University of Nevada Las Vegas, Geoscience
2003-2004	Assistant Prof., University of Nevada Las Vegas, Environmental Studies
2000-2003	Assistant Prof., Shepherd University, WV, Inst. for Environmental Studies

Related Products

1. 2019. Drohan, PJ. Mechmann, M., Buda, A., Djodic, F., Doody, D., Duncan, J., Iho, A., Jordan, P., Kleinman, P., McDowell, R., Melander, P., Thomas, I., Withers, P. A global perspective on the history of phosphorus management decision support approaches in agriculture: Lessons learned and directions for the future. J. Env. Qual. In press.
2. Fink, C. and P.J. Drohan. 2016. High resolution hydric soil mapping using LiDAR digital terrain modeling. Soil Science Society of America Journal, 80:355-363.
3. Fink, C. and P.J. Drohan. 2015. Dynamic soil property change in response to natural gas development in the northern Appalachians, U.S.A. Soil Science Society of America Journal, 146-154.
4. Drohan, P.J., Lindbo, D., Richardson, J. 2015. Hydric soils and wetlands in riverine systems. Wetland soils: Genesis, hydrology, landscapes, and classification. Lewis Publishers, Boca Raton. Hydric soils and wetlands in riverine systems. In Wetland Soils: Genesis, Hydrology, Landscapes, and Classification. Vepraskis, M. and Craft, C. (ed). pp. 325-345.
5. Drohan, P.J. and R. Brooks. 2013. Hydric soils across Pennsylvania reference, disturbed and mitigated wetlands. In: Brooks, R. and Wardrop, D.H. (ed.) Mid-Atlantic Freshwater Wetlands: Advances in wetland science, management, policy, and practice. Springer-Science, New York (pp.129-157).
6. Drohan, P. J., M. Brittingham, J. Bishop, and K. Yoder. 2012. Early trends in landcover change and forest fragmentation due to shale-gas development in Pennsylvania: a potential outcome for the northcentral Appalachians. Environmental Management, 49:1061-1075.
7. Lupton, M., Rojas Alvarado, C., Drohan, P., and M. Bruns. 2012. Vegetation and soil development in compost-amended iron oxide precipitates at a 50-year-old acid mine drainage barrens. Restoration Ecology, 21:320-328.
8. Erich, E., Drohan, P.J., Ellis, R.L., Collins, M.E., Payne, M., Surabian, D. 2010. Subaqueous soils: their identification and importance in ecosystem management. Soil Use and Management. 26: 245-252.

Synergistic Activities:

Professional Societies: Soil Science Society of America; Geological Society of America, American Quaternary Association; Pennsylvania Assoc. of Professional Soil Scientists

Ad hoc reviewer: Associate Editor for *Soil Use and Management*, *Agricultural & Environmental Letters*; and *Soil Science Society of America Journal*. Member of the Soil Science Society of America's (SSSA) Council of Soil Science Examiners. Manuscript reviewer for Geoderma, Wetland Ecology and Management, Environmental Management; Journal of Environmental Quality. Proposal reviewer for National Science Foundation (NSF) Geomorphology and Land Use Dynamics Program; US Department of Agriculture, National Institute of Food and Agriculture.

Education/Outreach: Taught 24 different courses in the natural and physical sciences, and currently teaches: urban soils; soil genesis and classification; field interpretation of soil properties; and study abroad courses in Scotland, England, and Ireland on the co-evolution of society, land and culture through time. Co-founder: Smithsonian Soil Exhibit Project, *Dig It*.

Highlighted Funding Last 5 Years

2018 Universidad Nacional de Ingenieria (UNI) Pontificia Universidad Católica del Perú (PUCP) – Penn State University, Universities and Colleges. $15,000. Assessment of Cd Accumulation in Peruvian Cacao; Source Identification in Soils and Fertilizers. Drohan, P. J. (PD, Ecosys. Sci. and Mgmt.) with co-PIs De La Cruz, O., Maximova, S., Guiltinan, M., Spargo, J.

2017 NSF. $330,000. Impact of Oil & Gas Wastewater Disposal on Lake and River Sediments. Burgos, W., (PD, Civil and Env. Eng.) with co-PIs. Drohan portion $13,965.

2016. USDA-FAS. $576,046.89. Cacao for Peace. Maximova, S., (PD) with co-PIs. Drohan portion $17,000.

2016. Pennsylvania DCNR, Bureau of Forestry. $293,240. Fertilization and liming effects on Northern Appalachian soils, flora and wildlife. Diefenbach, D. (PD, USGS) with co-PIs. Drohan portion $153,616.

2015. USGS 104B award from the Pennsylvania Water Resources Research Center. $20,000 Assessment of Shale Gas Contaminants in Sediment Profiles of the Conemaugh River Lake. Burgos, W., (PD, Civil and Env. Eng.) with Drohan co-PI.

2015 USDA-NRCS Soil Survey program. $78,000. Enhancing Soil Survey Information to Identify Environmentally Sensitive Wet Landscapes. P.J. Drohan (PD) with co-PIs.

2014. USDA-NRCS Soil Survey program. $40,000. Wetland Ecological Sites, States. P.J. Drohan (PD).

Thesis Advisor and Postgraduate-Scholar Sponsor

1. Daniel Guarin, Soil Science, PhD. began in 2019
2. Jhony Bolanos Soil Science, MS. began in 2017
3. Fei Jiang, Soil Science, PhD. began in 2016
4. **Total Number of Graduate Students Advised (15), Postgraduate-Scholars Sponsored (2), Visiting Scholars (2)**

Summary of Experience and Education for PA SCB

Yuri Kusuda Plowden

Soil Scientist

406 Allendale Way, Camp Hill, PA 17011
Evening phone: (814) 777-0208 (cell)
Day phone: (717) 237-2207 (office)
Email: yuri.plowden@usda.gov

Date: 5/16/2021

Work Experience

State Soil Scientist, (This is a full-time federal job)
Natural Resources Conservation Service, 359 East Park Drive, Harrisburg, PA 17111
10/2018 to Present.

Ecological Site Specialist, (This is a federal job)
6-MIL Soil Survey Office, Natural Resources Conservation Service, 216 Spring Run Road, Mill Hall, PA USA
11/2012 to 10/2018

MLRA Soil Survey Project Leader – ***Interim four-month position***
6-MIL Soil Survey Office, Mill Hall, PA
06/2012 to 09/2012

Resource Soil Scientist – (this is a federal job)
NRCS Bloomsburg Technical Center, 702 Saw Mill Road, Suite 205, Bloomsburg, PA
10/2010 to 11/2012

Soil Scientist – (this is a federal job)
NRCS Central Pennsylvania Soil Survey Office, 216 Spring Run Road, Mill Hall, PA
11/2002 to 10/2010

Summary of current and past duties and accomplishments

State Soil Scientist
Oversee technical soil services and GIS support for NRCS in Pennsylvania. Supervise Resource Soil Scientists and GIS Specialists. Technical and GIS soil services that I and soils staff provide include onsite special investigations, wetland determinations, highly erodible land determinations, training on hydric soils, soil health, soil engineering, and basic soils, education and outreach, soil survey update and evaluation, and Farmland Protection Policy Act determinations, and GIS support for NRCS Conservation Planning and compliance tools.

Ecological Site Specialist, Resource Soil Scientist, and Field Soil Scientist

Oversaw all aspects of developing Ecological Site information for Major Land Resource Area (MLRA) 147, the Northern Ridge and Valley Region and 130a the Northern Blue Ridge, both in the Appalachian Highlands, and for 118a and 118b – the Arkansas Valley and Ridges East and West. Compiled a technical team composed of experts from the Army Corps of Engineers, and state natural heritage programs and soil scientists from 4 states. Organized field data collection on over 200 sites in 3 years with the technical team. Analyzed the vegetation and soils data and created soil groupings for provisional ecological sites (PES), which led to the completion of provisional ecological sites for 4 major land resource areas and collectively encompassed approximately 90% of the mapunits within those MLRAs.

Assisted with MLRA field update mapping and initial soil survey work for three, city mapping projects in Virginia. This included field work, spatial data management, soil attribute database management, NASIS data management, making decisions about mapunit correlation, and providing guidance and training on soil survey work to new hire.

Provided Technical Soil Services to the Northeast Pennsylvania Field Teams. This included onsite investigations, Envirothon tests and trainings, offsite and onsite wetland determinations, hydric soils trainings, explaining soil survey information to NRCS staff, partners, and public, assisting with field team reviews, maintaining and updating soil survey information in NASIS, providing ARCGIS interpretive maps, soil sampling, and HEL determinations. Assisted NY MLRA soil survey offices with Rapid Carbon Assessment, heads-up digitizing, and other national and local soil studies and initiatives. Evaluated the agency use of soil survey data in conservation planning as part of two Northeast Field Team Program appraisal reviews.

Finalized the soil survey updates of Clinton County, PA (finished the manuscript for publication and completed all NASIS work), and Potter County; Assisted with development and completion of MLRA soil survey projects, including digitizing, attributing, collecting, and analyzing field data, NASIS data updating, correlating, and building and designing soil mapunits. Completed over 50,000 acres of initial soil survey mapping in Piscataquis County, Maine during a 4-month detail. Assisted with various national and local soil research projects including rapid carbon assessment, soil carbon long term monitoring study, Army Corps of Engineering interim supplements for delineating wetlands, Penn State soil organic matter project, plant materials center research projects, EPA wetland inventory, and a soil survey division carbon pool project.

Education

Master's Degree 08/1995: University of Maryland College Park, MD United States
Major: Agronomy
Relevant Coursework:
Soil Science Fundamentals, Soil Microbiology, Soil Geomorphology, Soil Chemistry, Agronomy Seminar, Soil Fertility, soil Master's thesis, and Principles of Biostatistics, Cereal & Oil Crops, Advanced Crop Physiology, Entomology Seminar, Intro to Crop Science, Plant Diversity

Bachelor's Degree 05/1984: Amherst College Amherst, MA United States
Major: Geology

Relevant Coursework: Principles of Geology, Optical Mineralogy, Structural Geology, Petrology, Sedimentology, Geomorphology and the Environment, Paleontology, and Economic Geology

Affiliations:
Pennsylvania Association of Professional Soil Scientists – President (2016-2017), Board Member (2018 to present)
Asian Pacific Islander Organization - Chair of 2015 and 2016 Conference Committee

Publications
Plowden, Y. 2016. Pedon Ponderings, in PennSoil, April 2016, the Newsletter of the Pennsylvania Association of Professional Soil Scientists.

Plowden, Y. 2015. Pedon Ponderings: Notes from the Incoming PAPSS President, in PennSoil, November 2015, the Newsletter of the Pennsylvania Association of Professional Soil Scientists.

Plowden, Y. 2015. PAPSS Professionals Can Help Prevent the Spread of Avian Influenza, in PennSoil, November 2015, the Newsletter of the Pennsylvania Association of Professional Soil Scientists.

Plowden, Y. 2010. Ag-Related Water Issues and the Sacramento River Delta Loop, in PennSoil, February 2010, the Newsletter of the Pennsylvania Association of Professional Soil Scientists.
Plowden, Y. 2010. PAPSS and the Envirothon – Why We Do It, in Pennsoil, February 2010
The Newsletter of the Pennsylvania Association of Professional Soil Scientists.

Del, C.J., P.R. Salon, C.D. Franks, E.C. Benham, and Y. Plowden. 2008. No-till and cover crop impacts on soil carbon and associated properties on Pennsylvania dairy farms
In Journal of Soil and Water Conservation, May 2008, vol. 63, no. 3, 136-142.

Franks, C.D., Y. K. Plowden, P. R. Salon, and C. J. Del, 2006. Soil Biological and Physical Properties in Silage Corn Systems with and Without Till age and Fall Seeded Cover Crops, in abstracts for the 18th World Congress of Soil Science. 4.1B Role of Organic Matter for Soil Properties and Consequences for Environmental Functions – Theatre, July 2006

Zhou, X., H. Lin, E. White, J. Chiburka, and Y.K. Plowden, 2006. Modeling Soil Hydraulic Properties as a Function of Morphological Features and Land use, in abstracts for the 18th World Congress of Soil Science, July 2006, Philadelphia, PA, 1.1A Hydropedology: Fundamental Issues and Practical Applications – Theater

Plowden, Yuri Kusuda, 1995. Effects of winter annual cover crops on the arbuscular mycorrhizal status of corn, Master's Thesis, unpublished, Dept. of Agronomy, University of Maryland at College Park

Leadership Activities
1. Board member of the Pennsylvania Association of Professional Soil Scientists, 2017-to 2018
2. President of the Pennsylvania Association of Professional Soil Scientists, 2016-2017

Michael Callahan, CPSS

428 Coachman Lane, Palmyra, PA 17078
717-305-8516
mike@soilhub.com

EDUCATION

Master of Science, Soil Science, 2004
Penn State University
GPA – 3.91/4.00

Bachelor of Science, Environmental Soil Science, 2001
Penn State University
GPA – 3.64/4.00

CERTIFICATIONS

Soil Science Society of America
Certified Professional Soil Scientist (CPSS)

Pennsylvania Department of Environmental Protection
Sewage Enforcement Officer (SEO)

EXPERIENCE

Stormwater Program Manager – *Derry Township Municipal Authority, Hershey, PA* — May 2016-Present

- Coordinate all aspects of the newly formed Stormwater Authority, including operation and maintenance of stormwater infrastructure, MS4 permit compliance, and public education and outreach.
- Facilitated a working group of community stormwater advisors that help direct the goals of the program.
- Developed a Stormwater Credits and Incentives Manual used to accomplish regulatory stormwater pollution reduction goals.
- Developed public education outreach materials for distribution through the Township's eNews, quarterly newsletters, and on the DTMA website.

Senior Soil Scientist – *RETTEW Associates, Inc., Lancaster, PA* — July 2010-May 2016

- Conducted a variety of soil investigations, including stormwater infiltration, hydric soil delineation, site feasibility for water impoundment embankment construction, and on-site septic.
- Led efforts in soil investigations for stormwater infiltration testing across Pennsylvania in challenging environments for a variety of clients.
- Investigated and determined the cause of failed stormwater infiltration facilities and oversaw the implementation of remedial strategies to bring them back into compliance.
- Managed all aspects of projects including sales, preparing proposals, scheduling resources, budgeting, coordinating field work, and preparing reports.
- Conducted field work across Pennsylvania, Ohio and West Virginia while ensuring compliance with local, state and federal regulations.

Soil Scientist - *The Catena Group, Inc., Hillsborough, NC* — July 2006-July 2010

- Conducted a variety of soil investigations, including on-site septic, wetland delineation, restoration and mitigation, stormwater infiltration, site planning, and agronomic analysis.
- Directed projects and personnel in the mountain and piedmont regions of North Carolina.
- Oversaw all aspects of department functions, including project scoping, scheduling, budgeting, and coordinating field work, while ensuring compliance with local and state regulations.
- Managed geographic data using ArcView GIS and Trimble GPS field units.

Soil Scientist - *DelVal Soil & Environmental Consultants, Inc., Doylestown, PA* June 2005-July 2006

- Determined on-site sewage disposal system type and location using knowledge of soil and landscape properties.
- Conducted preliminary soil investigations with hand-turned auger.
- Determined soil suitability for stormwater best management practices.

Soil Scientist - *USDA-ARS PSWMRU, State College, PA* Jan. 2004-June 2005

- Managed research program for Research Leader.
- Conducted research on the effects of amending soils with industrial by-products to stabilize environmentally and agronomically important nutrients.
- Planned, managed, and coordinated research projects in agricultural systems using a pedological approach.
- Designed and implemented approach to study the fate of phosphorus in manure applied to snow covered soils.
- Prepared data for presentation at collaboration sessions and research conferences.

ADDITIONAL EXPERIENCE

Owner – *Soil Hub LLC* Apr. 2015-Present

- Created an online learning platform (www.soilhub.com) for soil scientists and other environmental professionals.
- Designed and implemented the website and learning materials.
- Created a mobile app to simplify the use of the Hydric Soil Indicators that can be used on any mobile device (www.hydricsoil.com).
- Utilize various software and web-based tools to engage with website subscribers.
- Created an online and field-based Department of Environmental Protection required soil training course for Pennsylvania Sewage Enforcement Officers.

Adjunct Instructor – *Bloomsburg University* Aug. 2018-May 2019

- Responsible for teaching introductory soil science course to Bloomsburg University undergraduate students.
- Prepared course syllabus, content, exams, and learning activities.

Adjunct Instructor – *Delaware Valley University* Aug. 2015-Dec. 2015

- Responsible for teaching introductory soil science course to Delaware Valley University undergraduate students.
- Prepared course syllabus, content, exams, and learning activities.

Soil Judging Instructor - *Penn State University* Jan. 2001-Dec. 2003

- Responsible for teaching field soil morphology and classification course to Penn State graduate and undergraduate students.
- Instructed students on how to identify soil morphological features in soil pits.
- Prepared students for, and coached them during, yearly competitions with other universities in the northeast.
- Planned and hosted regional soil judging competition.

Research Assistant - *Penn State University* Oct. 2001-Dec. 2003

- Responsible for developing methods to readily estimate runoff and erosion potential in Pennsylvania's Phosphorus Index.
- Evaluated data sources for estimating runoff and erosion potential in the P Index.

- Conducted field experiments to test the validity and user efficiency of alternative indicators of runoff and erosion potential.

Research Assistant - *USDA-ARS Pasture Systems and Watershed Management Research Unit* Jan. 1998-July 2001

- Conducted research on the topic of soil phosphorus.
- Worked on National Phosphorus Research Project rainfall simulations.
- Assisted senior scientists in laboratory and field experiments and data management.

Laboratory Technician - *Penn State University Agricultural Analytical Services Laboratory* Jan. 1999-May 1999

- Carried out sample preparation and conducted laboratory procedures.
- Prepared soil and plant samples for laboratory tests.
- Conducted soil particle size analysis and pH procedures.
- Prepared laboratory reagents for Mehlich-3 extractant and SMP buffer.

PUBLICATIONS AND PRESENTATIONS

Peer-Reviewed Journal Articles

Callahan, M.P., P.J.A. Kleinman, A.N. Sharpley, and W.L. Stout. 2002. *Assessing the efficacy of alternative phosphorus sorbing soil amendments*. Soil Science. 167(8): 539-547.

Srinivasan, M.S., R.B. Bryant, M.P. Callahan, and J.L. Weld. 2006. *Manure management and nutrient loss under winter conditions: A literature review*. Journal of Soil and Water Conservation. 61 (4): 200-209.

Penn, C.J., R.B. Bryant, M.P. Callahan, and J.M. McGrath. 2011. *Use of industrial by-products to sorb and retain phosphorus*. Communications in Soil Science and Plant Analysis. 42(6): 633-644.

Presentations

Case Study: Challenges to Successful Restoration of a Marcellus Shale Well Pad. 2015. National Annual Meeting of the Soil Science Society of America, Minneapolis, MN.

Engaging the World with Soilhub.com. 2015. National Annual Meeting of the Soil Science Society of America, Minneapolis, MN.

Determining the Validity of Index Surface Runoff Class in Predicting Dissolved Phosphorus Loss Potential in Pennsylvania's Phosphorus Index. 2003. National Annual Meeting of the Soil Science Society of America, Denver, CO.

Evaluating Old and New Methods of Indexing Dissolved Phosphorus Loss in Pennsylvania's Phosphorus Index. 2002. National Annual Meeting of the Soil Science Society of America, Indianapolis, IN.

The Pedological Phosphorus Index: The Future of Phosphorus Indexing. 2001. Annual Meeting of the Pennsylvania Association of Professional Soil Scientists, University Park, PA.

Examining Phosphorus Index Input Factors to Increase User Efficiency. 2001. National Annual Meeting of the Soil Science Society of America, Charlotte, NC.

Assessing the Efficacy of Alternative Phosphorus Sorbing Soil and Manure Amendments. 2000. National Annual Meeting of the Soil Science Society of America, Minneapolis, MN.

PROFESSIONAL ORGANIZATIONS AND AWARDS

Soil Science Society of America

Pennsylvania Association of Professional Soil Scientists
Former Board Member and current website administrator for papss.org

Mid-Atlantic Hydric Soil Technical Committee
Tasked with studying and updating the Field Indicators for Hydric Soils

Central Pennsylvania Water Quality Association

Stormwater Committee Chair

Pennsylvania Department of Environmental Protection

Past member of Karst subgroup for the rewrite of the Pennsylvania Stormwater BMP Manual

South Londonderry Township Environmental Advisory Council

Past Chairman of Council

Soil Science Society of North Carolina – Past Member

Past Member of the Board of Directors

Consulting Soil Scientists of the Carolinas – Past Member

Served as the Treasurer/Secretary, and participated in work groups and committees

Outstanding Senior Student, 2001

Northeast Branch of the Soil Science Society of America

Member of the Soil Judging National Championship Team, 2000

Hosted by the University of Idaho

ADDITIONAL SKILLS

Wordpress

Adobe Connect

Articulate 360

LearnDash LMS

Camtasia

MailChimp

Stripe/Woocommerce

Microsoft Office

ArcView GIS 10.x

Rebecca Bourgault, Ph.D.
rbourgault@bloomu.edu
Mobile: 267-663-1760

Summary
Dr. Bourgault is an academic soil scientist with broad teaching and research experience. She has taught many different courses in soil & environmental sciences. Her graduate research focused on soil formation and processes related to trace metals and rare earth elements. Currently, she is Assistant Professor at Bloomsburg University, where she teaches full-time, coaches the Soil Judging Team, and is advising undergraduate student researchers in hydropedology and soil health. Dr. Bourgault also owns her own consulting company (since 2016) and provides services in wetland delineation and soil mapping. This summer (2021) she will complete the PA-SEO certification in order to be able to provide consulting services for on-site wastewater disposal. Dr. Bourgault is currently serving as Secretary of the Penn. Assoc. of Professional Soil Scientists and is involved in other service activities such as instruction for the PA-SEO Soils Precertification Course administered by SoilHub, LLC.

Education

- Ph.D., 2014; Plant & Soil Science; University of Vermont; Burlington, VT
- M.S., 2008; Natural Resource Sciences (Pedology); University of Maryland, College Park; College Park, MD
- B.S. with Honors, 2005; Environmental Science & Policy, Concentration in Soil, Water & Land Resources; University of Maryland, College Park; College Park, MD

Professional Experience

Aug. 2019 to Present: Assistant Professor, Dept. of Environmental, Geographical, and Geological Sciences, Bloomsburg University of Pennsylvania, Bloomsburg, PA
Aug. 2016 to May 2019: Assistant Professor, Dept. of Landscape Architecture and Environmental Sciences, Delaware Valley University, Doylestown, PA
Sep. 2016 to Present: Owner, Bourgault Environmental Consulting Services, LLC
Aug. 2015 to June 2016: Science Teacher, East Longmeadow High School, East Longmeadow, MA
Aug. 2014 to May 2015: Lecturer, Dept. of Biology, Sacred Heart University, Fairfield, CT
Aug. 2013 to Dec. 2013: Instructor, Johnson State College, Johnson, VT
Aug. 2012 to Dec. 2012: Lecturer, University of Vermont, Burlington, VT

Selected Publications

Bailey, S., D. Ross, N. Perdrial, M. Jercinovic, J. Webber, and R. Bourgault. 2019. Determination of Primary Mineral Content and Calcium Sources in Forest Soils using Electron Probe Microanalysis Mapping and Cluster Analysis. Soil Sci. Soc. Am. J. doi:10.2136/sssaj2019.07.0231

Bourgault, R., D. Ross, S, Bailey, T. Bullen, K. McGuire, and J. Gannon. 2017. Redistribution of soil metals and organic carbon via lateral flowpaths at the catchment scale in a glaciated upland setting. Geoderma 307:238-252. doi: 10.1016/j.geoderma.2017.05.039.

Gannon, J., K. McGuire, S. Bailey, R. Bourgault, and D. Ross. 2017. Lateral water flux in the unsaturated zone: a mechanism for the formation of spatial soil heterogeneity in a headwater catchment. Hydrological Processes 31:3568-3579. doi: 10.1002/hyp.11279.

Rebecca Bourgault, Ph.D.
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Ishee, E., D. Ross, K. Garvey, R. Bourgault, and C. Ford. 2015. Phosphorus Characterization and Contribution from Eroding Streambank Soils of Vermont's Lake Champlain Basin. J. Env. Qual. 44:1745-1753. doi: 10.2134/jeq2015.02.0108.

Bourgault, R., D. Ross, and S. Bailey. 2015a. Chemical and morphological distinctions between vertical and lateral podzolization at Hubbard Brook. Soil Sci. Soc. Am. J. 79:428-439. doi: 10.2136/sssaj2014.05.0190.

Bourgault, R. R. and M. C. Rabenhorst. 2012. Manganiferous Soils in Maryland: Regional Extent and Field-Scale Electromagnetic Induction Survey. Soil Sci. Soc. Am. J. 76:2128-2135. doi: 10.2136/sssaj2012.0091.

Bourgault, R. R. and M. C. Rabenhorst. 2011. Genesis and Characterization of Manganiferous Soils in the Eastern Piedmont, USA. Geoderma 165:84-94. doi: 10.1016/j.geoderma.2011.07.008.

Rabenhorst, M. C., R. R. Bourgault, and B. R. James. 2008. Iron Oxyhydroxide Reduction in Simulated Wetland Soils: Effects of Mineralogical Composition of IRIS Paints. Soil Sci. Soc. Am. J. 72:1838-1842. doi: 10.2136/sssaj2007.0368.

Awards and Achievements

2021: Awarded a Faculty Research Grant from Bloomsburg University to support student research project at Mahantango Creek Watershed entitled "Assessing the cerium anomaly as a hydropedologic tracer."
2021: Awarded a PASSHE Professional Development Grant for a project entitled "Development of an applied, experiential learning curriculum to train future soil scientists at Bloomsburg University."
2020: Awarded a Start-Up Grant from Bloomsburg University (Internal Competitive Grant) to conduct a pilot study in soil health in regenerative agriculture at a farm in Catawissa, PA
2013: First Place, Pedology Student Oral Presentation Competition, Soil Sci. Soc. of America International Annual Meetings, 3-6 Nov., Tampa, FL
2012: Outstanding Graduate Teaching Assistant, College of Agriculture and Life Sciences, University of Vermont
2007: Graduate Student of the Year, Department of Environmental Science and Technology, University of Maryland, College Park
2005: Northeast Branch of Soil Science Society of America Outstanding Senior Student
2004: Mid-Atlantic Association of Professional Soil Scientists Scholarship
2004: Second Place Individual, Northeast Regional Soil Judging Contest, Wilmington, OH
2003: Third Place Individual, Northeast Regional Soil Judging Contest, Kingston, RI

Professional Memberships and Professional Development Activities

Instructor for PA-SEO Soils Precertification Course through SoilHub, LLC, beginning Sept. 2020.
Pennsylvania Association of Professional Soil Scientists: Professional Member since 2016, Board Member/Secretary, elected to serve for three years beginning in 2021
Graduate of the TALE Teaching and Learning Academy, Bloomsburg University, 2020
Coach of Bloomsburg University Soil Judging Team since 2019
Advisory Board Member, Central Columbia Agriculture & Environmental Science Program, since 2019
Member of Soil Science Society of America since 2004 (not current)

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Wernersville, PA 19565
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OBJECTIVE

Seeking a leadership position within USDA involved in the conservation of natural resources through the implementation of the National Cooperative Soil Survey mission or application of other environmental science fields.

WORK EXPERIENCE

Resource Soil Scientist GS-0470 Soil Scientist
USDA-NRCS 02/2009 – Present
Leesport, PA Grade Level: GS-12
Responsible for maintenance, interpretation, and distribution of soil survey information; providing technical assistance to NRCS offices, conducting information and education activities related to soils and soil survey; providing training to NRCS employees and other technical specialists; providing support to users of soil survey information; assisting with conservation planning, environmental assessment, and natural resource management activities; and providing technical review, and guidance in the application of soil survey information throughout the eastern Pennsylvania.
I have been employed with NRCS nearly 25 years, served in 4 states and have authored 4 Soil Surveys; Bucks (1992), Chester (2006), Northampton (2007), and Montgomery (2008) Counties. I serve on interagency and interdisciplinary teams on:

- *NEDC Conservation Boot Camp instructor cadre since 2009;*
- *NRCS PA Boot Camp (ACT) instructor since 2010;*
- *MLRA SSO 13-5, 13-6 and 13-7 Technical Teams;*
- *Job approval for off-site and on-site FSA WC and HEL determinations including ACOE JAA authority;*
- *Wetlands and hydric soils (Mid-Atlantic Hydric Soils Committee);*
- *Hydrologic Regulation of Dissolved Organic Matter Biogeochemistry from Forests through River Networks (Kaplan, SWRC, 2005);*
- *Organized 3 tours including The Rodale Institute ® Regenerative Agriculture Tour for the 2006 World Congress of Soil Science through the IUSS, Philadelphia, PA;*
- *Modeling Soil Hydraulic Properties as a Function of Morphological Features and Land Use (Lin, PSU, 2007).*

MLRA 147 Soil Survey Project Leader GS-0470 Soil Scientist
USDA-NRCS 03/2003 – 02/2009
Leesport, PA Grade Level: GS-12
Project Leader with the MLRA 147 Soil Survey Project Office, located in Leesport, PA. Provides technical leadership and management in the evaluating, updating and maintaining the published soil surveys and is responsible for updating the Berks, Bucks, Chester, Delaware, Lehigh, Montgomery, Northampton and Philadelphia counties surveys. Provides technical assistance on soil interpretations and computer programs.

SE PA Soil Survey Project Leader GS-0470 Soil Scientist
USDA-NRCS 11/1992- 03/2003
Leesport, PA; Limerick, PA; Collegeville, PA Grade Level: GS-11
Project Leader with the SE PA Soil Survey Project Office. Provides technical leadership and management in the evaluating, updating and maintaining the published soil surveys and is responsible for updating the Berks, Bucks, Chester, Delaware, Lehigh, Montgomery, Northampton and Philadelphia counties surveys. Provides technical assistance on soil interpretations and computer programs.

Soil Survey Mapping Detail- Mapper GS-0470 Soil Scientist
USDA-NRCS 3/1997 - 6/1997
Buncombe County, NC Grade Level: GS-11
120 day mapping detail; Order 3 soil survey mapping to accelerate the completion of the survey.

Mapper GS-0470 Soil Scientist
USDA-NRCS (Formerly SCS) 7/1990 – 11/1992
Creamery, PA Grade Level: GS-9
Soil survey project scientist responsible for verifying accuracy and quality of soil mapping; transect across delineations. Assists project leader in locating, describing and correlating soil description sites. Evaluates descriptive legends. Gathers supporting data for soil survey. Provides training to other service personnel. Writes technical and non-technical reports.

Soil Survey Mapping Detail- Mapper GS-0470 Soil Scientist
USDA-NRCS (Formerly SCS) 12/1989 - 4/1990
Mayo, FL Grade Level: GS-7
120 day mapping detail; Order 3 soil survey mapping to accelerate the completion of the survey.

Soil Survey Mapping Detail- Mapper GS-0470 Soil Scientist
USDA-NRCS (Formerly SCS) 5/1989 - 8/1989
Neillsville, WI Grade Level: GS-5
120 day mapping detail; Order 3 soil survey mapping to accelerate the completion of the survey.

Mapper Soil Scientist GS-0470
USDA NRCS (Formerly SCS) 7/5/1988 - 9/1990
Leesport, PA Grade Level: GS-5/7
Identifying, classifying and surveying soils including morphology, taxonomy, cartography, and analysis. Takes field notes, transects map units, prepares map unit and taxonomic unit descriptions, and gathers supporting data. Identifies, describes and correlates series type locations, proposes map unit names and assists in legend maintenance
.

Agricultural Consultant
Columbia and Montour County Crop Improvement Association 2/1988 - 7/1988
Bloomsburg, PA
IPM and Nutrient Management Consultant for diverse ag industry clientele encompassing 40,000 acres through 3 counties for 60 farmer/members. Monitored, diagnosed and recommended treatment of soil, weed, insect, disease and fertility problems.

Assistant Superintendent
Cross Creek Resort 5/1987 - 2/1988
Titusville, PA
Duties for the 27-hole golf course resort included soils consultations and investigations, landscape construction and maintenance, horticultural propagation of plant and flower stock, IPM, soil testing and lime/fertilizer recommendations, tile drainage construction and mechanical grounds maintenance.

Agricultural Consultant
Centre and Clinton County Crop Improvement Association 4/1986 - 9/1986
Bloomsburg, PA
IPM and Nutrient Management Consultant for diverse ag industry clientele encompassing 29,000 acres through 2 counties for 50 farmer/members. Monitored, diagnosed and recommended treatment of soil, weed, insect, disease and fertility problems.

Lab and Field Technician
The Pennsylvania State University Soil Characterization Lab- Dr. EJ Ciolkosz, PhD 8/1985 - 8/1986
University Park, PA
Assisting with the collection and analyses of soil samples for projects including physical, chemical and biological analysis. Atomic Absorption and Emission Spectrometer, particlae size analysis, hydrometer analysis, CEC, free Fe2O3, soil nitrate, KCL, extractable Al, soil OC and rock fragment determination completed. Use of Soil Taxonomy to classify pedons.

Lab and Field Technician
The Pennsylvania State University Dept of Agronomy- Dr LE Lanyon , PhD 8/1985 - 8/1986
University Park, PA
Planting, harvesting and tissue analysis of forages and soil sampling and analysis for nutrient cycling study for Chesepeake Bay Watershed project.

EDUCATION

The Pennsylvania State University
University Park, PA 16802
Bachelor's Degree – May 1987
133 Semester Hours
Major: **Agronomy**- Soils Option

Lackawanna Trail HS
P.O. Box 85 Factoryville, PA 18419
High School Diploma – May 1982
National Honor Society

JOB-RELATED CERTIFICATES AND LICENCES

ARCPACS- Professional Soil Scientist Certification - 7/1996 #03510
ARCPACS- Professional Soil Classifier Certification - 7/1996 #03510
PA State Board of Certification of **SEO**'s 6/1996 #02844
ACOE- Reg. IV Wetland Delineation Certification 10/1994
ACOE JAA wetland delineator authority 2009
PAPSS Professional member- 1992
FSA WC and HEL determinations job approval for off-site and on-site

REFERENCES

- **Jeremy West**
  Phone Number: 301-504-8176
  USDA- NRCS National Plant Materials Center, Manager
  Email Address: Jeremy.west@md.usda.gov

- **Rob Knight**
  Phone Number: 724-834-4910 x139
  USDA-NRCS Greensburg, PA Resource Soil Scientist
  Acting State Soil Scientist
  Email Address: rob.knight@pa.usda.gov

- **Jim Doolittle**
  Phone Number: 610-557-4233
  USDA-NRCS Lincoln, NE Research Soil Scientist
  Email Address: jim.cdoolittle@lin.usda.gov