

Robert J. "Trip" Krenz III

rjkrenz3@vt.edu

314 Cheatham Hall
Department of Forest Resources and Environmental Conservation
Virginia Polytechnic Institute and State University
Blacksburg, VA 24061
Cell: 540.315.8934

Education

Virginia Polytechnic Institute and State University, Blacksburg, VA: 2009 – present

Degree sought: Ph.D.

Major: Forest Resources and Environmental Conservation

Anticipated Graduation: July 2014

Cumulative GPA: 4.0/4.0

Dissertation: Organic matter dynamics as functional indicators of stream condition in constructed streams on Virginia coal mine sites.

Eastern Illinois University, Charleston, IL: 2007 - 2009

Degree: Master of Science

Major: Biological Sciences

Cumulative GPA: 4.0/4.0

Thesis: Photopigments as descriptors of phytoplankton assemblage for bioassessment of Illinois lakes and reservoirs: an HPLC aided analysis.

Eastern Illinois University, Charleston, IL: 2002 - 2006

Degree: Bachelor of Science

Major: Biological Sciences

Option: Environmental Biology

Cumulative GPA: 4.0/4.0

Relevant Professional Experience & Employment

Graduate Research and Teaching Assistant, Virginia Tech, Forest Resources and Environmental Conservation
(August 2009 – present)

Co-supervisors: **Stephen Schoenholtz, Ph.D.**, Virginia Water Resources Research Center Director and Professor of Forest Hydrology and Soils; **Carl Zipper, Ph.D.**, Powell River Project Director and Professor of Environmental Science

Graduate Research Assistant, Eastern Illinois University, Biological Sciences

(May 2007 – June 2009)

Supervisor: **Charles Pederson, Ph.D.**, Professor of Aquatic Ecology

Student Conservation Association Intern, Mammoth Cave National Park, Science and Resource Management Division, Mammoth Cave, KY

(Feb. 2006 - April 2006)

Supervisor: **Brice Leech**, Natural Resources Specialist

Field Technician/Research Experience for Undergraduates, Eastern Illinois University, Biological Sciences

(March 2004 - June 2004)

Supervisor: **Eric Bollinger, Ph.D.**, Professor of Conservation Biology and **Nathan Hudson**, M.S. student

Deer Check Station Inspector, Illinois Department of Natural Resources/Eastern Illinois University, Watson, IL

(December 2003)

Supervisor: **Tom Nelson, Ph.D.**, Professor of Mammalogy

Laboratory Teaching Assistant, Animal Diversity Lab, Eastern Illinois University, Charleston, IL

(August 2003 - December 2003)

Supervisor: **Paul Switzer, Ph.D.**, Department of Biological Sciences

Conservation Technician Summer Intern, Richardson Wildlife Foundation, Compton, IL
(May 2003 - August 2003)
Supervisor: Terry Moyer, Vice President, Site Manager, and Wildlife Biologist

Additional Employment History

Operator/Maintenance/Delivery, Four Seasons Nursery, Charleston, IL
(February 2005 - June 2005)
Supervisor: Tammy Cerveny, Manager

Lifeguard and Maintenance, Mendota Swimming Pool, Mendota, IL
(June 2004 - August 2004)
Supervisor: Emily Happ, Head Lifeguard, Assistant Manager

Lab Rat Caretaker, Eastern Illinois University, Charleston, IL
(August 2002 - December 2004) During Fall and Spring semesters
Supervisor: Kip McGilliard, Ph.D., Department of Biological Sciences

Equipment Operator/Laborer, Krenz Excavating, Mendota, IL
(May 1996 - April 2007) Spring, Summer, and Fall during breaks
Supervisor: Robert J. Krenz, Jr., Owner/Operator

Teaching History

BIOL 1116. Principles of Biology. Lectured, supervised, created syllabus and rubrics, graded, and assisted students inside and outside of office hours, Primary teacher for three 1-credit hour sections totaling ~70 non-biology undergraduate science majors. Letter of commendation, as well as student and supervisor evaluations can be provided upon request (Virginia Tech; Spring 2014).

FOR 2324, Dendrology Laboratory. Lectured and taught identification techniques for native, naturalized, and non-native woody plants. Emphasized non-foliage features, although leaves were also covered. Taught rotating groups of ~15 students at a time. (Virginia Tech; Spring 2011 and Fall 2011).

FOR 2314, Forest Biology and Dendrology. Reviewed, graded, and provided feedback on term papers associated with morphology, anatomy, physiology, species associations, diseases, infestations, and characteristics of woody plants. (Virginia Tech; Fall 2009).

BIO 1300G, Animal Diversity. Tutored and assisted students during lab with questions about materials and techniques covered, in addition to grading and setting up each lab. (Eastern Illinois University; Fall 2003).

Peer-reviewed Publications

Krenz III, R.J., S.H. Schoenholtz, and C. Zipper. Riparian subsidies and leaf breakdown in constructed stream mitigations of Virginia coal mine sites. *In Preparation.*

Krenz III, R.J., S.H. Schoenholtz, and C. Zipper. Periphyton biomass accrual rates and relationships to structural attributes of coal mine stream mitigation efforts in Virginia. *In Preparation.*

Krenz III, R.J., S.H. Schoenholtz, and C. Zipper. Benthic macroinvertebrate community structure in Virginia coalfield constructed streams: relationships with physicochemical structure and leaf decomposition. *In Preparation.*

Krenz III, R.J., C.L. Pederson, and J.L. Pinckney. Photopigment profiles characteristics related to water chemistry and land use in Illinois lakes and reservoirs. *In Preparation.*

Krenz III, R.J., S.S. Warrner, D.L. Douros, D.N. Dehner, N.L. Heath, and C.L. Pederson. **2009.** N:P ratios and temperature affect phosphate uptake rate in phytoplankton assemblages of a cooling water reservoir. *Transactions of the Illinois State Academy of Science* 102(1&2): 45-54.

Other Publications and Reports

- Krenz III, R.J.**, S.H. Schoenholtz, and C. Zipper. 2012. Organic matter dynamics as functional indicators of stream condition in constructed streams on Virginia coal mine sites. Powell River Project Research and Education Program reports: 87-100.
- Krenz III, R.J.**, S.H. Schoenholtz, C. Zipper. 2012. Leaf litter breakdown rate in reconstructed Appalachian coal-mine streams: Relationships with environmental variables. Proceedings of the American Society of Mining and Reclamation Annual Meeting: 321.
- Krenz III, R.J.**, S.H. Schoenholtz, and C. Zipper. 2011. Select carbon dynamics as functional indicators of restoration success: progress from the first 2 years. Powell River Project Research and Education Program reports: 49-57.
- Krenz III, R.J.**, S.H. Schoenholtz, and C. Zipper. 2010. Select carbon dynamics as functional indicators of restoration success: a research approach. Powell River Project Research and Education Program reports: 110-120.
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Contributed Presentations

- Krenz III, R.J.** May 2013. Riparian subsidies, leaf breakdown, and relationships with ecosystem structure in coal-mine stream constructions. Annual Meeting of the Society for Freshwater Science (formerly NABS). Jacksonville, FL.
- Krenz III, R.J.** April 2013. Functional assessment tools for evaluating stream restoration efforts: Organic matter processes. Appalachian Research Initiative for Environmental Science: Environmental Considerations in Energy Production Symposium. Charleston, WV.
- Krenz III, R.J.** September 2012. Organic matter dynamics in constructed coal-mine streams. Annual Powell River Project Symposium. Wise, VA.
- Krenz III, R.J.** June 2012. Organic matter processing in reconstructed Appalachian coal-mine streams: relationships to environmental variables. 29th Annual Conference of the American Society of Mining and Reclamation. Tupelo, MS.
- Krenz III, R.J.** May 2012. Leaf breakdown in reconstructed Appalachian coal-mine streams. 60th Annual Meeting of the Society for Freshwater Science (formerly NABS). Louisville, KY.
- Krenz III, R.J.** April 2012. Leaf breakdown in reconstructed streams draining coal mines in Virginia's central Appalachians. Annual Conference of the Mid-Atlantic Chapter of the Ecological Society of America. Blacksburg, VA.
- Krenz III, R.J.** 2011. Selected organic matter dynamics as functional indicators of reconstructed stream condition: a research approach. Virginia Tech Forest Resources and Environmental Conservation Graduate Research Symposium, Blacksburg, VA.
- Krenz III, R.J.** 2010. Evaluating organic matter functions in streams reconstructed on reclaimed coal surface mines. Annual Powell River Project Symposium. Wise, VA.
- Krenz III, R.J.**, and C.L. Pederson. 2009. Bioassessment of Illinois lakes and reservoirs using photopigments to describe phytoplankton assemblages. Eastern Illinois Graduate Student Exposition. Charleston, Illinois.
- Krenz III, R.J.**, and C.L. Pederson. 2009. Photopigments characterize phytoplankton assemblages: a step toward bioassessment of Illinois reservoirs. 70th Annual Meeting of the Association of Southeastern Biologists. Birmingham, Alabama.
- Krenz III, R.J.**, and C.L. Pederson. 2009. Use of Photopigments as descriptors of phytoplankton assemblages for biotic assessment of Illinois reservoirs. 24th Annual Meeting of the Illinois Lakes Management Association. Peoria, Illinois.
- Krenz III, R.J.**, and C.L. Pederson. 2008. Photopigments as a descriptor of phytoplankton assemblage for bioassessment of Illinois reservoirs. 69th Annual Midwest Fish and Wildlife Conference. Columbus, Ohio.
- C.L. Pederson, and **R.J. Krenz III**. 2008. Use of photopigments as a descriptor of phytoplankton assemblage. Illinois Water Conference, October (biennial). Champaign, Illinois.
- Krenz III, R.J.**, and C.L. Pederson. 2008. Use of photopigments as a descriptor of phytoplankton assemblages for biotic assessment of Illinois reservoirs. 69th Annual Meeting of the Association of Southeastern Biologists. Spartanburg, South Carolina.

Professional Memberships

- 2011-present, **Society for Freshwater Science** (formerly North American Benthological Society).
2010-present, **American Water Resources Association**, Virginia Tech Student chapter.
Treasurer (June 2010- May 2011) and Secretary (June 2012-May 2013).
2009-present, **Forestry Graduate Student Association**, Virginia Tech.
2009-present, **Sigma Xi**, Associate Member, Virginia Tech chapter.
2008-present, **Association of Southeastern Biologists**.
2008-2009, **Illinois Lakes Management Association**.
2007-2009, **Fish and Wildlife Ecology Club**, Eastern Illinois University.
President (Jan. 2008- Dec. 2008).
2007-2009, **American Fisheries Society**, Illinois chapter, Eastern Illinois University sub-chapter.
2007-2009, **Biological Sciences Graduate Student Association**, Eastern Illinois University.
2005-present, **Tri-Beta Life Sciences Honor Society**, Eastern Illinois University chapter.
2007-2008, **Graduate Student Advisory Council**, Eastern Illinois University.
2002-2006, **Association of Honors Students**, Eastern Illinois University.

Research Grants Awarded

2012. **Powell River Project Research Grant**. \$30,000. "Organic matter dynamics as functional indicators of constructed stream condition: relationships with structural measures," Powell River Project Board of Advisors. PIs: S.H. Schoenholtz and R.J. Krenz.
2011. **Powell River Project Research Grant**. \$45,000. "Select carbon dynamics as functional indicators of reconstructed stream condition: controls and relationships with structural measures," Powell River Project Board of Advisors. PIs: S.H. Schoenholtz and R.J. Krenz.
2010. **Powell River Project Research Grant**. \$45,000. "Functional assessment of restored coalfield streams: relationships between carbon dynamics and biotic structure," Powell River Project Board of Advisors. PIs: S.H. Schoenholtz and R.J. Krenz.
2009, **Graduate Student Investigator Award**. \$150. "Use of Photopigments as Descriptors of Phytoplankton Assemblages for Biotic Assessment of Illinois Reservoirs," Eastern Illinois University College of Sciences.
2008, **Research/Creative Activity Grant**. \$1000. "Use of photopigments as a descriptor of phytoplankton assemblages for biotic assessment of Illinois reservoirs," Eastern Illinois University Graduate School.
2008, **Williams Travel Grant**. \$100. "Potential bioassessment of Illinois lakes and reservoirs using photopigment signatures," Eastern Illinois University Graduate School.
2008, **Illinois Lakes Management Association Undergraduate/Graduate Research Grant**. \$1000. "Photopigments characterize phytoplankton assemblages: a step toward bioassessment of Illinois reservoirs," Illinois Lakes Management Association.

Other Awards and Recognition

- 2008-2009, **Joseph J. Hohner Memorial Scholarship**. \$600. Educational Board of LaSalle County. (disbursed in October and February of school year).
2008, **Robert Esser Student Achievement Scholarship**. \$500. Robert Esser, Illinois Lakes Management association founding member.
2006, **Summa Cum Laude** and **Honors College graduate**. Eastern Illinois University (undergraduate).
2006, **Americorps Education Award**. \$1000. Americorps, through the National Service Trust.
2005, **Hunt Environmental Biology Scholarship**. \$500. Eastern Illinois University Department of Biological Sciences.
2002-2009, **Dean's List, College of Sciences**. Undergraduate and Graduate. Eastern Illinois University (recognized Fall and Spring semesters).

2002-2006, **Elks National Foundation Most Valuable Student Scholarship**. \$1000/year. Elks National Foundation. (disbursed annually).

Skills

Management and Leadership

- Managed 2-4 undergraduates at a time, coordinating with 2 graduate students in the field and lab (Ph.D.)
- Designed and served as primary, non-senior author and co-investigator on 3 funded grants (Ph.D.)
- Managed 3 undergraduates at a time during field and lab operations of statewide sampling during (M.S.)

Software and Internet Technologies

- Experienced in **Wordpress** blogging and site management
- Proficient in **Microsoft Office Suite** including **Word**, **Excel**, and **PowerPoint**.
- Proficient in statistical software including **Minitab 16**, **JMP v8 and v9**, and **Primer-E v6.0**.
- Proficient with **SAS** statistical software and coding.
- Proficient analyzing and managing spatial data with **ESRI ArcGIS** and **ArcCatalog** software.
- Familiar with **BSTEM** and **HEC-RAS** models and their application to stream restoration engineering.
- Experienced with **USEPA EnviroMapper** and **USDA-NRCS Web Soil Survey**.
- Experienced with **USEPA Integrated Risk Information System (IRIS)**
- Proficient quantifying community metrics of benthic macroinvertebrates with Ecological Data Application System (EDAS 3.0).

Field Techniques

- Proficient with **Onset-HOBO** temperature logger deployment, maintenance, and operation.
- Proficient in physical **survey techniques** using clinometers, optical transit, and laser-based systems. Proficient in measurement and interpretation of **stream discharge** data derived from various methods.
- Proficient in field methods to **characterize riparian zone** and **in-stream chemistry, physical habitat, discharge, benthic macroinvertebrates, and primary producers**.
- Proficient in collection of benthic macroinvertebrates according to VDEP **rapid bioassessment protocol**.
- Proficient in **QA/QC field procedures**.
- Proficient understanding and use of **Global Positioning Systems (GPS)**, offsetting techniques, and cartographical features.
- Experienced performing **field-based wetland delineation (USACoE)**, including soil and plant community identification and characterization.
- Proficient operating and maintaining **Eureka, Hanna, YSI, and Hydrolab Quanta** hardware for collecting meterable data.
- Experienced **electrofishing, electroseining, and seining** in both lentic and lotic systems.
- Proficient in many **lentic sampling methods**, both physicochemical and biotic, including phytoplankton, zooplankton, benthic macroinvertebrate, and chemical sample collection.
- Experienced exposing and **aging deer** by jaw and teeth.
- Experienced **tagging deer** and **banding waterfowl**.
- Proficient operating numerous types of **heavy equipment, vehicles, and power tools**.

Lab Techniques

- Proficient processing of **organic matter to determine leaf litter** breakdown rates, litterfall input rates, and periphyton biomass accrual rates and standing crop.
- Proficient **processing and identifying benthic macroinvertebrate** samples to genus and application of Virginia Stream Condition Index (VSCI) and other community based assessments.
- Proficient performing **analytical methods** including ion chromatographic (broad anions), inductively coupled plasma spectroscopy (dissolved metals and cations), and auto-analyzer (major nutrients) SOPs.

- Proficient performing many chemical analyses according to **APHA Standard Methods** by hand.
- Proficient using HPLC to determine **photopigment profiles** as descriptors of phytoplankton assemblages.

Laws and Regulations

- Proficient understanding of compliance and enforcement of National Environmental Policy Act (NEPA), Clean Water Act, and Surface Mining Control and Relamation Act (SMCRA).
- Familiar with other federal legislation including CERCLA, RCRA, TSCA and Clean Air Act.
- Experienced application of the Army Corps of Engineers (USACoE) Wetland Delineation Manual.
- Experienced understanding of USDA-NRCS “Big Blue Book of Stream Restoration”.

Current Certifications

- American Canoe Association (ACA) swiftwater rescue certified (level 4; 2012)
- National Safety Council (NSC) first aid and CPR certified (2014)

Language

- Conversational spoken and written Spanish from 4 years of study, plus 5 months intensive study while traveling with Spanish teacher, and 4 additional months living and practicing with a native speaker.

Community Service/Volunteerism

- 2013, **Stroubles Creek cleanup**, VT American Water Resources Association chapter, Blacksburg, VA.
- 2012, **Litter cleanup of Montgomery County Park**. Forestry Graduate Student Association, Blacksburg, VA.
- 2011, **Various projects raising money for Amman Imman well installation in Azawak region of west Africa**.
VT American Water Resources Association chapter, Blacksburg, VA.
- 2010, **Stroubles Creek stream restoration tree planting, coir fiber and log installation**. VT Dept. of Biological Systems Engineering restoration efforts, Blacksburg, VA.
- 2010, **Virginia elementary and secondary teacher outdoor education in-service training**. Izaak Walton League, Christiansburg, VA.
- 2008-2009, **1st Grade “Biology in your backyard” classroom demonstrations**. EIU Fish and Wildlife Ecology Club visit to Carl Sandburg Elementary, Charleston, IL.
- 2008, **Native plant species landscaping surrounding parking lot**. Douglas-Hart Nature Center, Charleston, IL.
- 2007-2008, **Lake Charleston litter cleanup**. EIU Fish and Wildlife Ecology Club, Charleston, IL.
- 2002-2006, **Regularly tended to animals**. Coles County Animal Shelter, Charleston, IL.
- 2002-2004, **Regularly tutored**. After School Club, Charleston, IL.
- 2001, **Renovated home for mentally ill**. Catholic Heart Work Camp, Milwaukee, WI.
- 1998-2001, **Tutored weekly**. Northbrook Middle School, Mendota, IL.
- 2000, **Stick framed and drywalled new home**. Habitat for Humanity, Mendota, IL.

References

Carl Zipper, Ph.D.
Graduate Co-advisor (doctorate), Professor Crop and Soil Environmental Science
Director, Powell River Project, (mail code 0404)
Virginia Polytechnic Institute and State University
Blacksburg, VA 24061
540.231.9782
czip@vt.edu

Stephen Schoenholtz, Ph.D.
Graduate Co-advisor (doctorate), Professor Forest Hydrology and Soils

Director, Virginia Water Resources Research Center, 210-G Cheatham Hall
Virginia Polytechnic Institute and State University
Blacksburg, VA 24061
540.231.0711
stephen.schoenholtz@vt.edu

Catherine M. Sarmadi
Biology Department Laboratory Coordinator (former)
Department of Biology, 1020B Derring Hall
Virginia Polytechnic Institute and State University
Blacksburg, VA 24061
540.392.6062
csarmadi@vt.edu

Charles Pederson, Ph.D.
Graduate Advisor (M.S.), Professor of Aquatic Ecology
Department of Biological Sciences, 1044
Eastern Illinois University
600 Lincoln Ave.
Charleston, IL 61920
217.581.6239
clpederson@eiu.edu

John R. Seiler, Ph.D.
Alumni Distinguished Professor of Forestry, S.H. Short Endowed Professorship
Department of Forest Resources and Environ. Cons., 230 Cheatham Hall, (mail code 0324)
Virginia Polytechnic Institute and State University
Blacksburg, VA 24061
540.231.5461
jseiler@vt.edu

Brice T. Leech Jr.
Natural Resources Specialist
Mammoth Cave National Park
PO Box 7 MACA NP
Mammoth Cave, KY 42259
270.758.2142
brice_leech@nps.gov

Terry Moyer
Vice President and Site Manager
Richardson Wildlife Foundation
2316 Shaw Road
West Brooklyn, IL 61378
815.628.3300

