Bora Cetin Ph.D.

CURRICULUM VITAE

Bora Cetin, PhD
Assistant Professor
Civil & Environmental Engineering
South Dakota School of Mines & Technology
501 E. Saint Joseph Street (336) 686-1361
Rapid City, SD, 57701 bora.cetin@sdsmt.edu

EDUCATION

Ph.D. Civil & Environmental Engineering **Aug. 2009 – Aug. 2012**
University of Maryland, College Park, MD

- **Major:** Geotechnical & Geoenvironmental Engineering
- **Dissertation:** Leaching of Metals from High Carbon Fly Ash Mixed Soils
- **Faculty Advisor:** Dr. Ahmet H. Aydilek

M.S. Civil & Environmental Engineering **Aug. 2007 – Aug. 2009**
University of Maryland, College Park, MD

- **Major:** Geotechnical Engineering
- **Thesis:** Stabilization of Recycled Base Materials with High Carbon Fly Ashes
- **Faculty Advisor:** Dr. Ahmet H. Aydilek

B.S. Civil Engineering
Istanbul Technical University, Istanbul, Turkey **Sept. 2002 – June 2007**

EMPLOYMENT

South Dakota School of Mines and Technology, Rapid City, South Dakota **Aug. 2012 – Present**
Civil and Environmental Engineering
Assistant Professor

University of Maryland, College Park, Maryland **Aug. 2007 – Aug. 2012**
Civil and Environmental Engineering
Graduate Research Assistant
Graduate Teaching Assistant

HONORS AND AWARDS

Eastern South Dakota Water Conference Travel Scholarship **2012**
Maryland Water Resources Research Center – Summer Fellowship **2010, 2011**
Granted for research efforts that support the health of the Chesapeake Bay
Distinguished Teaching Assistant **2009, 2010, 2011**
Won award for exceptional performance as a teaching assistant at the University of Maryland
NCEES Fundamentals of Engineering (FE) Examination **2010**
Istanbul Technical University (ITU) Academic Achievement Grant **2002-2007**
Awarded merit based grant for undergraduate ITU students for exceptional academic achievement
Prime Ministry Scholarship **2002-2007**
Awarded a grant for undergraduate studies in Turkey for strong academic achievement
Prosteel International Steel Design Competition, TUSCA, Turkey **2006**
Won 1st prize in the design of a steel structure as a team

RESEARCH FUNDING

1. South Dakota Department of Transportation, "Climate and Groundwater Data to Support Mechanistic-Empirical Pavement Design in South Dakota," **Cetin, B. (PI)**, Schwartz, C.W. (Co-PI), Forman, B. (Co-PI), and Roberts L.A. (Co-PI), 2013-2014, $120,000.
2. Department of Energy, "Preliminary Evaluation of Shale Media for Use as a Nuclear Waste Repository Site," Roggenthen (PI), W., Stetler, L. (Co-PI), **Cetin, B. (Co-PI)**, Roberts, L.A. (Co-PI), 2012-2014, $150,000.
3. The South Dakota Board of Regents- Competitive Research Grant Program, "Remediation of Acid Mine Drainages and Mine Tailings with High Carbon Fly Ash," **Cetin , B. (PI)**, 2013-2014, $25,000.
4. The South Dakota Board of Regents-Competitive Research Grant Program, "Integration of Multimedia Active Learning Tools into Laboratory Engineering Courses," **Cetin (PI)**, 2013-2014, $16,153.
5. RESPEC Consulting and Services, "Remediation of Mine Tailings," to support an undergraduate research project, **Cetin, B. (PI)**, 2013-2014, $10,000.
6. Nelson Research Grant, "Groundwater Impacts of Roadways Built with Recycled Concrete Materials", **Cetin, B. (PI)**, 2013-2014, $5,000.
7. Virginia Department of Transportation, "Evaluation of Use of Recycled Concrete as an Additive to Subbase/Base Coarse Material," Tanyu, B.F. (PI), **Cetin, B. (Co-PI)**, Aydilek, A.H. (Co-PI), 2013-2015, $230,000.

Total funding = $556,153

PUBLICATIONS

Journal Publications

- Cetin, B., Aydilek, A.H., Guney, Y. (2010), "Stabilization of Recycled Base Materials with High Carbon Fly Ash," *Resources, Conservation and Recycling*, vol.54, pp.879-892.
- Cetin, B., Aydilek, A.H., Li, L. (2012), "Experimental and Numerical Analysis of Metal Leaching from Fly Ash Amended Highway Bases," *Waste Management*, vol. 32(5), pp.965-978.
- Cetin, B., Aydilek, A.H., Guney, Y. (2012), "Leaching of Trace Metals from High Carbon Fly Ash Stabilized Highway Base Layers," *Resources, Conservation and Recycling*, vol.58, pp.8-17.
- Cetin, B., Aydilek, A.H. (2013), "pH and Fly Ash Type Effect on Trace Metal Leaching from Embankment Soils," *Resources, Conservation and Recycling*, vol.80, pp.107-117.
- Cetin, B., Aydilek, A.H., Li, L. (2013), "Leaching Behavior of Al, As, and Cr from High Carbon Fly Ash Amended Highway Structural Fills," *Journal of Transportation Research Record*, vol.2349, pp.72-80.
- Cetin, A., Kaya, Z., Cetin, B., Aydilek, A.H. (2013), "Behavior of Graded Aggregate Base Materials under Different Compaction Methodologies and Aggregate Properties," *IMO- Technical Bulletin*, vol. 404, pp.6463-6470 (In Turkish).
- Cetin, B., Aydilek, A.H. , Li, L. (January 2014), "Trace Metal Leaching from Embankment Soils Amended with High-Carbon Fly Ash," *Journal of Geotechnical and Geoenvironmental Engineering-ASCE*, vol. 140(1), pp.1-13.
- Guney, Y., Cetin, B., Aydilek, A.H., B., Tanyu, B.F., Koparal, S., "Utilization of Sepiolite-Zeolite Materials in Municipal Solid Waste Landfills as a Liner Material," *Waste Management*, in press.
- Cetin, A., Kaya, Z., Cetin, B., Aydilek, A.H., "Influence of Compaction Method on Mechanical Properties of Unbound Granular Materials," *Road Materials and Pavement Design*, in press.
- Dayioglu, A.Y., Aydilek, A.H., Cetin, B., "Swelling Potential and pH Coated of Steel Slags," *Journal of Transportation Research Record*, accepted.

- Haider, I., Kaya, Z., Cetin, A., Hatipoglu, M., Cetin, B., Aydilek, A.H., "Drainage and Mechanical Behavior of Highway Base Materials," *Journal of Irrigation and Drainage-ASCE*, revised and resubmitted.
- Li, L., Shao, W. Cetin, B., Li, J. (submitted August 2013), "Experimental Investigation of Mechanical Properties of Sands Reinforced with Discrete Randomly Distributed Fiber," *Geotechnical and Geological Engineering*, revised and resubmitted.
- Li, L., Shao, W., Cetin, B. (submitted September 2013), "Effects of Climate Factors on Mechanical Properties of Cement and Fiber Reinforced Clays," *Journal of Materials-ASCE*, revised and resubmitted.

Journal Publications in Progress

- Komonweeraket, K., Cetin, B., Benson, C.H., Aydilek A.H., Edil, T.B. (expected submission December 2013), "Leaching Characteristics and Geochemical Modeling of Elements from Fly Ash Mixed Soils," *Journal of Geotechnical and Geoenvironmental Engineering-ASCE.*
- Komonweeraket, K., Cetin, B., Benson, C.H., Aydilek A.H., Edil, T.B. (expected submission December 2013), "Influence of pH on the Leaching of Toxic Constituents from Fly Ash Mixed Soils," *Journal of Environmental Engineering-ASCE.*
- Lewis, J., Cetin.B. (Expected submission January 2014), "Environmental Impacts of the Highway Base Layers Built with Recycled Concrete Aggregates," *Journal of Geotechnical and Geoenvironmental Engineering-ASCE*.

Refereed Conference Proceedings

- Haider, I., Cetin, B., Kaya, Z., Hatipoglu, M., Cetin, A., and Aydilek, A.H. (2014), "Evaluation of the Mechanical Performance of Recycled Concrete Aggregates used in Highway Base Layers" Proceedings of Geocngress, will be held in Atlanta, GA, 9p. (CD-Rom).
- Cetin, B., Aydilek, A.H., Lin, L. (2012), "Manganese and Chromium Leaching from Fly Ash Amended Embankment Structures" *Proceedings of Geocongress*, Oakland, CA, 9p. (CD-Rom).
- Cetin, A., Kaya, Z., Cetin, B., Aydilek, A.H (2012), "Effect of Compaction Method on Mechanical Behavior of Graded Aggregate Base Materials," *Proceedings of Geocongress*, Oakland, CA, 10p. (CD-Rom).
- Cetin, B., Aydilek, A.H., Lin, L. (2011). "Chromium Leaching from Fly Ash Stabilized Highways," *Proceedings of Geofrontiers*, Dallas, TX, March 2011, 9p. (CD-Rom).
- Cetin, B., Aydilek, A.H., Lin, L. (2011). "Leaching of Two Metals (Zn and Al) from Soils Stabilized with High Carbon Fly Ash," *Proceedings of International Symposium on Testing and Specification of Recycled materials for Sustainable Geotechnical Construction*, Baltimore, MD, February 2011.
- Cetin, B., Aydilek, A.H. (2011). "Leaching of Cu and Zn Metals from Fly Ash Amended Highway Base Layers," *Proceedings of the 90th Annual Meeting of the Transportation Research Board*, Washington, D.C., January 2011, 15 p. (CD-Rom).
- Cetin, B., Aydilek, A.H., Guney, Y. (2010). "Use of High Carbon Fly Ash to Stabilize Recycled Base Materials," *Proceedings of the 89th Annual Meeting of the Transportation Research Board*, Washington, D.C., January 2010, 18 p. (CD-Rom).

Project Reports

- Roggenthen, W., Stetler, L. Nopola, J., Roberts, L.A., Cetin, B. (2013), "Preliminary Planning for Development of an Underground Laboratory in Shale," Sandia National Laboratories, Contract No. 1252847.
- Roggenthen, W., Stetler, Cetin, B., Roberts, L.A. (2013), "Geological Distribution of Potentially Suitable Shale in the U.S.: Concepts and Literature. Sandia National Laboratories, Contract No. 1252847.