

Nathan O. Nelson

Associate Professor
Kansas State University Department of Agronomy
70% research, 30% teaching

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- Program area – Soil Fertility/Nutrient Management
- Teaching responsibilities – Agron375-Soil Fertility, Agron385-Soil Fertility Lab, Agron835-Nutrient Sources, Uptake, and Cycling.

Education

- Ph.D. in Soil Science – North Carolina State University, Department of Soil Science, 2004.
- M.S. in Soil Science – North Carolina State University, Department of Soil Science, 2000.
- B.S. in Agronomy – Kansas State University, Department of Agronomy, 1998.
- A.A.S. in Botany – Brigham Young University – Idaho, Rexburg ID, 1996.

Research Experience

2011 – present Associate Professor, Kansas State University Department of Agronomy
2005 – 2011 Assistant Professor, Kansas State University Department of Agronomy
2004 – 2005 Soil Scientist, USDA-ARS Northwest Irrigation and Soils Research Lab, Kimberly, ID.
2001 – 2004 USDA National Needs Graduate Research Fellow, North Carolina State University Department of Soil Science, Raleigh, NC.
1999 – 2000 Graduate Research Assistant, North Carolina State University Department of Soil Science, Raleigh, NC.
1997 – 1998 Undergraduate Research Assistant, Kansas State University Department of Agronomy, Manhattan, KS.
1996 Undergraduate Assistant, USDA-ARS Wind Erosion Research Lab, Manhattan, KS.
Summer Intern, USDA-ARS Central Great Plains Research Station, Akron, CO.

Teaching Experience

2011 – 2012 Co-instructor for Natural Resources and Environmental Science capstone (GENAG 582)
2006 – present Lead instructor for Soil Fertility (AGRON 375), Soil Fertility Lab (AGRON 385), and Plant Nutrient Sources, Cycling, and Uptake (AGRON 835).
2003 Teaching Assistant for Soil Fertility, NC State Dept. of Soil Science. Completed the NCSU Preparing the Professoriate program, mentor Dr. John L. Havlin.
2000 – 2003 Teaching Assistant for Soil Fertility Lab, NC State Dept. of Soil Science
1999 – 2000 Teaching Assistant for Introductory Soils Lab, NC State Dept. of Soil Science
1998 Teaching Assistant for Soil Microbiology Lab, K-State Dept. of Agronomy
1995 – 1996 Teaching Assistant for General Botany Lab, BYU-Idaho

Extension Experience

1998 Summer Intern, Kansas State Research and Extension, Johnson County, KS

Professional Activities

- 2014 – 2016 Associate Editor for the Soil Science Society of America Journal
- 2012 – 2013 Chair of the American Society of Agronomy Environmental Quality Section
- 2011 – 2012 Vice Chair of the American Society of Agronomy Environmental Quality Section
- 2011 – 2013 Associate Editor for the Journal of Environmental Quality
- 2010 – 2012 Presiding Chair of the *Nutrient Loss Assessment and Prevention* community in the American Society of Agronomy
- 2008 – 2011 Incoming Chair (2008), Chair (2009), and Past Chair (2010) of SERA-IEG 17 Minimizing Phosphorus Loss from Agriculture.
- 2006 – present American Society of Agronomy (member)
- 2006 – present Gamma Sigma Delta Honor Society of Agriculture
- 2004 – 2006 ASA-CSSA-SSSA Soil Science Education Award Committee
- 2004 – 2006 ASA-CSSA-SSSA Marion L. & Chrystie M. Jackson Soil Science Award Committee
- 2005 Conference Committee Chair “Modeling Phosphorus Transport in Agroecosystems: Joining Users, Developers, and Scientists” July 31 – Aug. 2, 2006, Ithaca, NY.
- 2003 – present Modeling Workgroup Chair, SERA-IEG 17 Minimizing Phosphorus Loss from Agriculture.
- 1997 – present Soil Science Society of America (member)

Honors

- 2013 Agronomic Resident Education Award from the American Society of Agronomy
- 2009 USDA-CSREES Partnership award for Mission Integration
- 2007 Journal of Environmental Quality Outstanding Reviewer
- 2004 USDA Group Honor Award for outstanding interagency effort in the development of the North Carolina Phosphorus Loss Assessment Tool
- 2001 – 2003 USDA National Needs Fellow
- 2001 J. Fielding Reed Fellowship awarded by PPI
- 2001 Hugh Hammond Bennett Award from the NC Soil and Water Conservation Society
- 2000 Summa Cum Laude Graduate of Kansas State University
- 1999 J. Fielding Reed Scholarship presented by the Agronomic Science Foundation
- 1997 Morris K. Udall Scholarship for Environmental Public Policy

Publications

NOTE: Names of graduate, post doctoral, and undergraduate research advisees are listed in italics when appearing as first author.

- Jaidee, R., M.B. Kirkham, K.A. Williams, **N.O. Nelson**, A. Polthanee. 2013. Water use efficiency and nutrient uptake of a soybean grown in P-deficient soil under water deficit. *Australian J. Crop Sci.* (submitted 20 April 2013) (KAES publication 13-312-J).
- Shao, H., C. Baffaut, J.E. Gao, **N.O. Nelson**, K.A. Janssen, G.M. Pierzynski, P.L. Barnes. 2013. Development and application of algorithms for simulating terraces within SWAT. *Trans. ASABE* 56:1715-1730. (KAES publication 14-150-J)
- Ippolito, J.A., and **N.O. Nelson**. 2013. Assessment of phosphorus retention in irrigation laterals. *J. Soil Water Conserv.* 68:450-459. (KAES publication 14-149-J)
- Altamimi, M., R. Janke, K. Williams, **N. Nelson**, and L. Murray. 2013. Nitrate-nitrogen sufficiency ranges in leaf petiole sap of *Brassica oleracea* L., Pac Choi grown with organic and conventional fertilizers. *HortScience*. 48:357-368.
- Nelson, N.O.**, and A.L. Shober. 2012. Evaluation of phosphorus indices after twenty years of science and development. *J. Env. Qual.* 41:1703-1710. (KAES publication 13-054-J)
- Johnson, W.A., R.A. Cloyd, J.R. Nechols, K.A. Williams, **N.O. Nelson**, D. Rotenberg, and M.M. Kennelly. 2012. Effect of Nitrogen Source on pac choi (*Brassica rapa* L.) chemistry and interactions with the diamondback moth (*Plutella xylostella* L.). *HortScience* 47:1457-1465. (KAES publication 12-363-J)
- Nelson, N.O.**, S.C. Agudelo, W. Yuan, and J. Gan. 2011. Nitrogen and phosphorus availability in biochar amended soils. *Soil Science* 176 (5): 218-226. (KAES publication 11-051-J)
- Agudelo, S.C.*, **N.O. Nelson**, T.D. Keane, P.L. Barnes, G.M. Pierzynski. 2011. Phosphorus adsorption and desorption potential of stream sediments and field soils in agricultural watersheds. *J. Environ. Qual.*40:144-152. (KAES publication 10-284-J)
- Gan, J., W. Yuan, **N.O. Nelson**, and S.C. Agudelo. 2010 Hydrothermal conversion of corn cobs and crude glycerol. *Biological Engineering* 2:197-210. (KAES publication 10-309-J)
- Loecker, J.L.*, **N.O. Nelson**, W.B. Gordon, L.D. Maddux, K.A. Janssen, and W.T. Schapaugh. 2010. Manganese response in conventional and glyphosate resistant soybean. *Agron. J.* 102:606-611. (KAES publication 10-045-J)
- Blanco, H., R. Stephenson, **N.O. Nelson**, and D. Presley. 2009. Wheat and sorghum residue removal for expanded uses increases sediment and nutrient loss in runoff. *J. Environ. Qual.* 38:2365-2372. (KAES publication 9-222-J)
- Parajuli, P.*, **N.O. Nelson**, L. Frees, and K.R. Mankin. 2009. Calibration and validation of AnnAGNPS and SWAT models in USDA-CEAP agricultural watersheds in South-central Kansas. *Hydrol. Process.* 23:748-763. (KAES publication 08-249-J)
- Bjorneberg, D.L., D.T. Westermann, **N.O. Nelson**, J.H. Kendrick. 2008. Conservation practice effectiveness in the irrigated Upper Snake-Rock watershed. *J. Soil Water Conserv.* 63(6):487-495.
- Nelson, N.O.** and R.R. Janke. 2007. Phosphorus sources and management in organic production systems. *HortTechnology* 17:442-454. (KAES publication 07-197-J)
- Nelson, N.O.**, and J.E. Parsons. 2006. Modification and validation of GLEAMS for prediction of phosphorus leaching in waste-amended soils. *Trans. ASABE* 49(5):1395-1407. (KAES publication 06-242-J)
- Nelson, N.O.**, and R.L. Mikkelsen. 2006. Polyethersulfone membrane filters for sampling soil water from in-situ soils and intact soil columns for phosphate analysis. *Commun. Soil Sci. Plant Anal.* 37:377-388.

- Nelson, N.O.**, and R.L. Mikkelsen. 2005. Balancing the phosphorus budget of a swine farm: A case study. *J. Natural Resources Life Sci. Educ.* 34:90-95.
- Nelson, N.O.**, J.E. Parsons, and R.L. Mikkelsen. 2005. Field-scale evaluation of phosphorus leaching in acid sandy soils receiving long-term swine waste applications. *J. Environ. Qual.* 34:2024-2035.
- Nelson, N.O.**, R.L. Mikkelsen, and D.L. Hesterberg. 2003. Struvite precipitation in anaerobic swine lagoon liquid: Effect of pH, Mg:P ratio, and determination of rate constant. *Bioresource Technol.* 89(3):229-236.
- Nielsen, D. C., and **N.O. Nelson**. 1998. Black bean sensitivity to water stress at various growth stages. *Crop Sci.* 38:422-427.

Peer Reviewed Book Chapters (2)

- Osmond, D., **N. Nelson**, K. Douglas-Mankin, M. Langemeier, D. Devlin, P. Barnes, T. Selfa, L. French, D. Meals, M. Arabi, and D. Hoag. 2012. Cheney Lake Watershed, KS:NIFA-CEAP Watershed Project. p. 246-264. *In* D. Osmond, D. Meals, D. Hoag, and M. Arabi (Eds). *How to Build Better Agricultural Conservation Programs to Protect Water Quality: The NIFA-CEAP Experience*. Soil and Water Conservation Society, Ankeny, IA.
- Nelson, N.O.**, and J.E. Parsons. 2006. Basic approaches to modeling phosphorus leaching. p. 81-103. *In* D.E. Radcliffe and M.L. Cabrera (Ed.) *Modeling Phosphorus in the Environment*. CRC Press, Boca Raton, FL.