

# Candiss O. Williams, PhD

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## EDUCATIONAL HISTORY

2009	Ph.D.	Agronomy, Environmental Soil & Water Chemistry	Purdue University
2003	M.S.	Soil Science, Biogeochemistry	Tuskegee University
2000	B.S.	Environmental Science, Natural Resource Management	Tuskegee University

## BACKGROUND

Background includes research in environmental soil and water chemistry and nutrient biogeochemistry to evaluate the effects of varying management/conservation systems on soil and water quality and water quantity; use of hydrologic/water quality/crop models to evaluate effects of land management practices on water quality and quantity and soil quality; development of soil pedotransfer functions for use in crop/water quality models and Soil Survey databases. Technical background in soil and water chemistry methods to assist NRCS field soil scientists with identifying appropriate soil tests for technical questions in addition to interpretations that would assist with conservation planning. Leadership background in leading a national cooperative research funding initiative and leading multidisciplinary research and technical teams in answering questions related to land management/conservation impacts on soil and water quality (Federal, States, and Universities).

## PROFESSIONAL EXPERIENCE

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**3/2020-Present: Natural Resource Specialist**, USDA-NRCS-Resource Assessment (RAD) Branch, Conservation Effects Assessment Program (CEAP) Modeling Team, Beltsville, MD.

***Identifies, analyzes, and manages natural resource management/conservation projects that help measure and demonstrate conservation program accomplishments:*** Currently serves on the CEAP Modeling Team preparing technical responses to be used in the decision making process, gathers natural resources and other data to evaluate the effectiveness of national accomplishments for use in program management, develops and manages projects that help measure and demonstrate conservation program efforts, develops reports and publications for internal and external release, and provides leadership with advice on soil, water resource conservation priorities.

**1/2012-3/2020: Research Soil Scientist**, USDA-NRCS-National Soil Survey Center, Charles E. Kellogg Soil Survey Laboratory (KSSL), Lincoln, NE.

***Conceived, formulated, and executed regional, national, and international programs/projects:*** Recognized for executing scientific research in soil processes and landscape modeling under varying conservation management. Developed and organized dynamic soil property field projects nationally. Authored/co-authored 30+ peer-reviewed journals articles, given 8 invited research talks, served on various research working groups, and organized 4 research symposia at international research society meetings.

**7/2016–Present: Adjunct Research Professor**, University of Nebraska-Lincoln, School of Natural Resources and Graduate School, Lincoln, Nebraska 68508.

***Coordinated and collaborated with stakeholders:*** Currently serves in a courtesy appointment to engage with undergraduate and graduate students and faculty members through USDA-NRCS programming to address regional and national research needs. Secured funding to support 6 undergraduates, 5 graduates, and collaborative research with 2 faculty; published 2 manuscripts and gave 9 presentations.

**3/2015-Present, Adjunct Research Professor**, Tuskegee University, College of Agriculture, Environmental, and Natural Resources, Tuskegee Institute, AL 36088.

***Coordinated and collaborated with stakeholders:*** Serves in a courtesy appointment to engage with undergraduate and graduate students and faculty members through USDA-NRCS research programming to address regional and national division research needs. Secured funding to support 2 undergraduates, 1 graduate, and collaborative research with 4 faculty; gave 4 presentations.

**7/2009-10/2011, Research Associate Soil Scientist (postdoc)**, USDA-Agricultural Research Service (ARS), Southeast Watershed Research Laboratory (SEWRL), Tifton, GA.

***Engaged, promoted, and coordinated collaborative research*** among partners (University of Puerto Rico, NOAA, USDA-NRCS, USDA-ARS, and community stakeholders) to evaluate conservation programs as part of the USDA National Conservation Effects Assessment Program (CEAP) in Jobos Bay, Puerto Rico. Authored 2 manuscripts evaluating the effectiveness of conservation programs on water quality and quantity in Jobos Bay.

**8/2000-8/2003, Program Assistant**, NASA Spaceflight & Life Sciences Training Program (SLSTP), Tuskegee University, Tuskegee, AL.

***Coordinated and collaborated with stakeholders:*** Served as the liaison between the SLSTP office and program partners (Diné College, Rutgers University, South Mountain Community College, and Tuskegee University) keeping them abreast of program recruitment, application status, and scheduling.

## **NRCS REPRESENTATION IN NATIONAL TECHNICAL GROUPS**

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**Represent the agency on assigned task forces, and other strategic planning groups involved in natural resources management program functions:**

Field to Market Metrics Committee (present)

USDA CART Assessment Team 3 (2021-present)

USDA Program Greenhouse Gas Benefits Working Group (2021 – present)

American Geoscience Institute Intersociety Committee on Diversity (2021-present)

USDA CEAP 2 Task Force (2021)

Soil Science Society of America-Representation and Recognition Task Force (2018-present)

USDA Conservation Effects Assessment Program (CEAP) Modeling Team (2012-present)

USDA-NRCS and NCSS Research Needs Committee (Chair 2013, 2017-2018)

USDA-NRCS National Leadership Training and Recruitment Focus Team (2017-2020)

Southern Extension and Research Activity (SERA-17)-Modeling Committee

St. Joseph River USDA Agency Priority Goal (APG) for Water Pilot Project

NRCS National Cooperative Soil Survey Strategic Planning Committee (Phase I)

NRCS National Monitoring Plan Team-Cultural Information, Data Collection, Interpretation & Management Subgroups

Soil Science Society of America Soil Change Working Group

National Research Coordination Network on Reactive Nitrogen in the Environment and the North American Center of International Nitrogen Initiative

## **MOST SIGNIFICANT PEER-REVIEWED MANUSCRIPTS**

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**Preparing written and oral reports and presentations for agency leaders and conservation partners, communicate outcomes findings and products to internal and external customers:**

Wills, S.A., **C.O. Williams**, C. Seybold, L. Scheffe, Z. Libohova, D. Hoover, C. Talbot, and J.R. Brown. 2017. Using Soil Survey to Assess and Predict Soil Condition and Change. In: Global Soil Security. Pp. 123-135. Springer.

**Williams, C.O.**, R. Lowrance, T.L. Potter, D.D. Bosch, R. Hubbard, T. Strickland, R.G. Williams, J.R. Williams, A. Dieppa, and D. Sotomayor. 2016. APEX and REMM simulation of atrazine transport within a coastal zone in Southeastern Puerto Rico. Journal of Environmental Modeling & Assessment. DOI: [10.1007/s10666-016-9508-4](https://doi.org/10.1007/s10666-016-9508-4).

**Williams, C.O.**, S. Wills, and E. Steglich. 2016. Modeling Dynamic Soil Properties in APEX for U.S. Soil Survey. In: Proceedings of the International SWAT Conference, Pula, Sardinia, Italy, June 22-26, 2015. Texas Resources Institute Technical Report.  
<http://swat.tamu.edu/media/115171/swat-italy-2015-proceedings-secured.pdf>

Francesconi, W, **C.O. Williams**, D.R. Smith, J. Williams, and J. Jaehak. 2016. Phosphorus Modeling in Tile Drained Agricultural Systems Using APEX. J Fertil Pestic 7: 166.  
doi:[10.4172/2471-2728.1000166](https://doi.org/10.4172/2471-2728.1000166)

X. Wang, J.R. Williams, **C.O. Williams**, J. Nichols, J. Jeong , P. Schoenberger, M.L. Norfleet, J.P. Angerer. 2015. Development of a Tool to Predict Soil Moisture and Soil Temperature Regimes. *Soil Horizons* doi: 10.2136/sh14-09-0012.

Francesconi, Wendy, Douglas Smith, Xiuying Wang, and **C.O. Williams**. 2014. Monitoring and APEX Modeling of No-Till and Reduced-Till in tile-Drained Agricultural Landscapes for Water Quality. American Society of Biological Engineers 57(3): 777-789.

**Williams, C.O.**, Lowrance, R.R., Bosch, D.D., Williams, J.R., Dieppa, A., Hubbard, R.K., Mas, E., Sotomayor, D., Potter, T.L., Steglich, E.M., Strickland, T.C., Williams, R.G. 2013. Hydrology and Water Quality of a Field and Riparian Buffer adjacent to a Mangrove Wetland in Jobos Bay Watershed, Puerto Rico. Ecological Engineering.  
<http://dx.doi.org/10.1016/j.ecoleng.2012.09.005>.

Roberston, G. Philip, T. W. Bruulsema, R. Gehl, D. Kanter, D.L. Mauzerall, A. Rotz and **C.O. Williams**. 2012. Climate-Nitrogen Interactions in Agriculture. In: The Role of Nitrogen in Climate Change and the Impacts of Nitrogen-Climate Interactions on Terrestrial and Aquatic Ecosystems, Agriculture, and Human Health in the United States. A Technical Report Submitted to the US National Climate Assessment. North American Nitrogen Center of the International Nitrogen Initiative (NANC-INI), Suddick, E.C., Davidson, E.A.,(eds) Woods Hole

Research Center, 149 Woods Hole Road, Falmouth, MA.

<http://www.whrc.org/resources/publications/pdf/SuddicketalWHRC.12.pdf>

## **INVITED SEMINARS AND GUEST LECTURES**

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U.S. Soil Survey and Big Data. Department of Agronomy Seminar Series. Purdue University, 2018.

Use of APEX Model to Support U.S. Soil Survey. USDA-NRCS Webinar Series. Lincoln, NE, 2017.

Use of APEX Model to Support U.S. Soil Survey. USDA-NRCS Soil Health Interpretations Working Group. Lincoln, NE, 2017.

Impact of Land Management on Water Quality. Undergraduate Mentoring in Environmental Science Program, University of Missouri-Columbia, 2011.

Evaluating the Effects of Conservation Practices on Water Quality and Quantity: A Modeling Approach. Tuskegee University Sigma Xi Scientific Honor Society Annual Research Symposium. Tuskegee University, 2011.

Conservation Effects Assessment Project: Modeling Conservation Practices. 68<sup>th</sup> Annual Professional Agricultural Workers Conference, Tuskegee University, 2010.

Land Use Impacts on Sediment and Water Phosphorus (P) Concentrations in Selected Eagle Creek Tributaries. Sigma Xi Scientific Honor Society, Tifton, GA, 2009.

Phosphorus Release and Retention by Stream and Ditch Sediments as Influenced by Different Land Management Practices. North Carolina State University, 2008.

## **PROFESSIONAL SERVICE**

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### **Research Advisement:**

Lei Yu, M.S./Ph.D. student, University of Nebraska-Lincoln, Graduation-2019

Joshua Gates, M.S. student, University of Nebraska-Lincoln, Graduation -2018

Margaret Oruwari, M.S. student, Tuskegee University, Graduation – 2018

Zachary Kuhr, Undergraduate student, University of Nebraska-Lincoln, 2018

Rebecca Punta-Young, Ph.D. student, University of Nebraska-Lincoln, graduation-2015

Josh Gates, undergraduate student, University of Nebraska-Lincoln, 2014-2015

Jarrett Weimer, undergraduate student, University of Nebraska-Lincoln, 2016 – 2017

Laura LeCuyer, undergraduate student, University of Nebraska-Lincoln, 2016 – 2017

**Peer Review Panelist:**

Reviewer, 2022 USDA Environmental Quality Incentives Program Water Smart Grants

Reviewer, 2021 USDA Environmental Quality Incentives Program Water Smart Grants

Reviewer, 2021 USDA NRCS Conservation Effects Assessment Program II National Report

Reviewer, 2019 Kika De la Garza Fellowship, Washington, D.C.

Reviewer, 2018 Kika De la Garza Fellowship, Washington, D.C.

Chair, 2014 NOAA Environmental Cooperative Science Center Program Review

Reviewer, 2013 USDA National Institute of Food and Agriculture (NIFA) AFRI Renewable Energy Natural Resources and Environment

Reviewer, 2012 - 2019 USDA National Cooperative Soil Survey (NCSS) Research Needs Cooperative Agreement Program (average 20 grants per year)

Reviewer, 2011 NOAA Ernest F. Hollings Undergraduate Scholarship, Washington, D.C.

Reviewer, 2010 USDA NIFA Multicultural Scholars Program (7 grants), Washington, D.C.

**National Society Offices Held:**

Chair, ASA/CSA/SSSA Diversity in Agronomy, Crops, Soils and Environmental Sciences Division, 2017-2018

Chair-elect, ASA/CSA/SSSA Diversity in Agronomy, Crops, Soils and Environmental Sciences Division, 2016-2017

Secretary, ASA/CSA/SSSA Diversity in Agronomy, Crops, Soils and Environmental Sciences Division, 2015-2016

Secretary, ASA/CSA/SSSA Soil Change Working Group, 2014-2017

Membership Chair, National Society of Minorities in Agriculture Natural Resources & Related Sciences, 2015-2018, 2021-present

Secretary, National Society of Minorities in Agriculture Natural Resources & Related Sciences, 2010-2014

Parliamentarian, National Society of Minorities in Agriculture Natural Resources & Related Sciences, 2006-2007

Region VP, National Society of Minorities in Agriculture Natural Resources & Related Sciences, 2005-2006.

## REFERENCES

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Dr. Lee Norfleet  
National Model Team Leader  
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Temple, TX 76502  
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