

S. Carolina Córdova, PhD.

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EDUCATION

- 2013 - 2018 **Ph.D. in Soil Science**, Iowa State University, Ames, IA.
Dissertation: Soybean nitrogen dynamics: Nitrogen fixation, yield, and residue decomposition. Advisors: Michael J. Castellano and Sotirios V. Archontoulis
- 2005 - 2011 **B. Eng. Agro-Industry**, Tecnica del Norte University, Ibarra, Ecuador.

PROFESSIONAL APPOINTMENTS

- 2018 - present **Postdoctoral Research Associate**, W.K. Kellogg Biological Station (KBS) and Department of Plant, Soil and Microbial Sciences, Michigan State University, Hickory Corners, MI. PI: G. Philip Robertson
Research: Design and conduct research on carbon and nitrogen dynamics in soil and bioenergy crops focusing on associative nitrogen fixation.
- 2018 - present **Field Site Research Coordinator**, Great Lakes Bioenergy Research Center (GLBRC), Michigan State University.
Responsibilities: Coordinate and promote research projects at the field sites of the GLBRC. Provide information and give tours on the research project to visiting students and researchers as well as other groups from the US and abroad.
- 2013-2018 **Graduate Assistant Researcher**, at Iowa State University, Ames, IA
PI: Sotirios Archontoulis, Co-PI: Michael J. Castellano, Mark Licht
Responsibilities: Served as a member of the Forecast and Assessment of Cropping Systems (FACTS). Coordinated and managed six ISU research fields and lab activities, evaluating in real-time soil-crop dynamics through the growing season. This data helped calibrate and improve crop growth and production simulation models (APSIM), which were a central part of the FACTS decision support tool for farmers. FACTS assists farmers with decisions such as harvest time for corn, forecast soil moisture, nitrogen mineralization across Iowa (as of 2018).
More info: <https://crops.extension.iastate.edu/facts/>
- 2011 - 2012 **Research Assistant**, Iowa State University, Ames, IA.
PIs: Michael J. Castellano and John Sawyer.
Responsibilities: Greenhouse gas, soil, and plant residue measurements for Iowa STRIPS (Science-Based Trials of Row crops Integrated with Prairie Strips) and cover crops projects.

GRANTS AND FELLOWSHIPS

Awarded (total awarded: US\$ 203,800)

- 2020 **Professional Development Grant, USD \$1,000.** W. K. Kellogg Biological Station, Michigan State University, Hickory Corners, MI.
- 2018 **Reiman Gardens Science Communication Fellow, USD \$200.** Iowa State University, Ames, IA.
- 2017-2018 **Women's and Diversity Grant Project, USD \$11,000.** Dept. Diversity and Inclusion, Iowa State University, Ames, IA.
Project: "*Building Gender Parity in Agricultural Leadership Roles through Tailored Professional Development.*" Lead PI: Taylor, K.; Co-PI: **Córdova, S.C.**, Poffenbarger, H., Aller, D., Puntel, L., Heaton, E.
- 2016 & 2017 **Professional Advancement Grants (PAGs), combined USD \$1,000.** Graduate and Professional Student Senate, Iowa State University, Ames, IA.
- 2016 **Graduate Student Leadership Conference Grant.** ASA-CSSA-SSSA, Phoenix, AZ.
- 2015 **Renovate Indoor Green Areas Project, USD \$600.** Dept. Agronomy, Iowa State University, Ames, IA.
- 2014–2015 **Personal and Professional Development Program Fellowship,** Agronomy Department, Iowa State University.
- 2013-2017 **Graduate Student Scholarship, USD \$ 190,000** for top grades at graduation.

PEER-REVIEWED PUBLICATIONS

- Ciampitti, I.A., de Borja Reis, A.F., **Córdova, S.C.**, Castellano, M.J., Archontoulis, S.V., Correndo, A., Antunes De Almeida, L.F., Moro Rosso, L., 2021. Revisiting biological nitrogen fixation dynamics in soybean. *Frontiers Plant Science* 12:727021 <https://doi.org/10.3389/fpls.2021.727021>
- Mosier, S., **Córdova, S.C.**, Robertson, G.P. 2021. Restoring Soil Fertility on Degraded Lands to Meet Food, Fuel, and Climate Security Needs via Perennialization. *Frontiers in Sustainable Food Systems* 5:706142 <https://doi.org/10.3389/fsufs.2021.706142>
- Córdova, S.C.**, Licht, M., Castellano, M.J., Archontoulis, S. V. 2020. Soybean profitability and yield component response to nitrogen fertilizer in Iowa. *Agrosystems, Geosciences and Environment* 3(1):1-16 <https://doi.org/10.1002/agg2.20092>
- Archontoulis, S.V., Castellano, M.J., **Córdova, S. C.**, *et al.*, 2020. Predicting Crop Yields and Soil-Plant Nitrogen Dynamics in the US Corn Belt. *Crop Science* 60(2): 721-738 <https://doi.org/10.1002/csc2.20039>
- Córdova, S.C.**, Castellano, M.J., Dietzel, R., Licht, M.L., Togliatti, K., Martinez-Feria, R., Archontoulis, S.V. 2019. Soybean nitrogen fixation dynamics in Iowa, USA. *Field Crops* 236: 165-176 <https://doi.org/10.1016/j.fcr.2019.03.018>
- Córdova, S.C.**, Olk, D., Dietzel, R., Muller, K., Archontoulis, S.V., Castellano, M.J. 2018. Plant litter quality affects the accumulation rate, composition, and stability of mineral-associated soil organic matter. *Soil Biology and Biochemistry* 125: 115-124 <https://doi.org/10.1016/j.soilbio.2018.07.010>
- Ordóñez, R.A., Castellano, M.J., **Córdova, S.C.**, Togliatti, K., Wright, E., Archontoulis, S.V., *et al.*, 2017. Maize and soybean root front velocity and maximum depth in Iowa, USA. *Field Crops Research* 15: 122-131 <https://doi.org/10.1016/j.fcr.2017.09.003>

Manuscripts in advanced preparation

- Córdova, S.C.**, Kravchenko A. N., Miesel, J., Robertson, G. P., "Whole-profile soil carbon and nitrogen change after 25 years along an agricultural management gradient."
- Córdova, S.C.**, Moore, K. J., Robertson, G. P., "Switchgrass tiller demography as influenced by ecotype and its relationship to carbon and nitrogen dynamics."
- Córdova, S.C.**, Nuccio, E., Roley, S., Hamilton, S., Robertson, G. P., "Associative N₂ fixation variability in upland and lowland switchgrass ecotypes."
- Córdova, S.C.**, Gelfand, I., Kravchenko, A. N., Robertson, G. P., "Root-to-Shoot ratios and contributions to soil carbon by perennial bioenergy crops in the Upper Midwest US."
- Córdova, S.C.**, Robertson, G. P., "Chemical compositional differences among bioenergy switchgrass varieties and sorghum hybrids."
- Córdova, S.C.**, Thelen, K., Robertson, G. P., "Long-term yield dynamics of switchgrass grown for biofuel feedstock."
- Moore K.J., **Córdova, S.C.**, Robertson, G. P., "Tiller demography within cool-season grass populations."

Outreach and Other Publications

- Eaton, W., Robertson, T., Arbuckle, J., **Córdova, S.C.**, et al., 2022. "Advancing Scholarship and Practice of Stakeholder Engagement in Working Landscapes" *ScholarSphere* Penn State University. doi.org/10.26207/b8rt-5q47
- Vásquez, J., **Córdova, S.C.** 2022. "Guía de producción sustentable de hortalizas y frutas" *Revista El Agricultor*, Universidad Central del Ecuador (*in-press*)
- Córdova, S.C.**, "Black, Brown, Red, and Orange Poem," W.K. Kellogg Biological Station Summer Art Anthology, I. Michigan State University, 2019, pp. 8-9.
- Córdova, S.C.**, "An Ode to the Soil's Soul". W.K. Kellogg Biological Station Summer Art Anthology, I. Michigan State University, 2019, pp. 28-30.
- Archontoulis, S.V., Castellano, M.J., Dietzel, R., **Córdova, S.C.**, Togliatti, K., Helmers, M., et al., 2016. Understanding the 2016 yields and interactions between soils, crops, climate, and management. Proceedings of the 28th Annual Integrated Crop Management Conference, Iowa State University. <https://lib.dr.iastate.edu/icm/2016/proceedings/2>
- Castellano, M.J., Archontoulis, S.V., **Córdova, S.C.**, Dietzel, R., Poffenbarger, H., 2016. Nitrogen myths and realities. Proceedings of the 28th Annual Integrated Crop Management Conference, Iowa State University. <https://lib.dr.iastate.edu/icm/2016/proceedings/26>

TEACHING & MENTORSHIP

Courses

- 2022/ Spring **Guest Lecturer**
Agronomy lecture series for around 20110 undergraduate students of the Agronomy Department at Central del Ecuador University. Topics: i) Carbon sequestration and organic matter (Jan. 17-21); ii) Soil inorganic nitrogen availability (Feb. 1-4); iii) Conventional and organic beans production in Michigan (Feb. 15-16); iv) Soil health and the future of agriculture (Mar 7-9); v) Fertilizer recommendations for conventional and organic systems (Mar. 15-18).
- 2021/Fall **Organizer and Co-Instructor**
Workshop series on R, RStudio, and Statistics applied to Agricultural Research Projects (lecture + lab), registered 45 faculty to participate. Duration: 30 hours. Department of Agronomy, Central del Ecuador University. Oct. 25-29.
- 2021/Spring **Guest Lecturer**

- Lecture on bioenergy crops, around 20 K-12 teachers participated. W.K. Kellogg Biological Station K-12 Partnership Workshops, Michigan State University.
- 2020/Fall **Co-Instructor**
Agricultural Ecology – CSS 442, 3 cr., 22 students. Department of Plant, Soil and Microbial Sciences, Michigan State University.
- 2019/Spring **Guest Lecturer**
Three separate lectures on carbon and nitrogen cycling and data analysis. Duration of 1h each, with 15- 20 K-12 teachers. W.K. Kellogg Biological Station K-12 Partnership Workshops, Michigan State University.
- 2017/Spring **Graduate Teaching Assistant**
Field plot technique - Agron. 526, 3 cr., 25 students. Department of Agronomy, Iowa State University.
- 2017/Spring **Guest Lecturer,**
Ecuadorian culture and Soil Types in Ecuador, at Hort. 495,2 cr., 20 students, Iowa State University.

Mentoring and Supervised Students (ten undergraduate students; *NSF REU, §Iowa State Science with Practice Fellows)

- 2021-2022 Sophia Schlenz* (Swarthmore College).
 - Determine associative nitrogen fixation in different soil pore sizes.
- 2020 - 2021 Zahraa Al-Tameemi (Michigan State University).
- 2019 - 2020 Nyduta Mbogo*, Missouri State University.
 - Quantifying associative nitrogen fixation in different switchgrass plant parts while comparing two varieties.
- 2019 - 2020 Colin McHugh*, Grand Valley State University.
 - Evaluate the effects of nitrogen fertilization on light-harvesting ability in bioenergy crops (switchgrass and miscanthus).
- 2016 - 2017 Joshua DeGroot, Iowa State University.
- 2016 - 2017 Jonathon Boss§, Iowa State University.
 - Impact on soybean yield and crop growth by the addition of nitrogen fertilizer.
- 2016 - 2017 Xingche Guo, 1st-year graduate student at the Dept. Statistics, Iowa State University.
Mentor-mentee program, International Student Graduate Learning Community.
- 2016 Madeleine Bretey, Iowa State University.
- 2015 - 2016 Cooper Smith§, Iowa State University.
 - Iowa soil nitrogen dynamics in corn-soybean fields after harvest (Winter-Spring).
- 2014 Sarah Leichy, Iowa State University.

AWARDS & RECOGNITION

- 2017 Outstanding Ph.D. Student, Department of Agronomy, Iowa State University, Ames, IA.
- 2017 One of the top three posters poster competition at the 47th North Central Conference of Soil Fertility, Des Moines, IA.
- 2016 Third place in the poster contest in the Soil Health Conference, Ames, IA.
- 2015 - present Gamma Sigma Delta-Inducted for high GPA
- 2013 - 2017 Academic scholarship for graduate studies sponsored by Ecuadorian Government.
- 2009 One of the top ten students awarded an Academic Scholarship from the German Academic Institute (DAAD) and the Tecnica del Norte University, Ecuador.

PRESENTATIONS & POSTERS

Professional Presentations

- Córdova, S.C.**, "Associative N₂ fixation variability in upland and lowland switchgrass ecotypes" Columbian Basin Agricultural Research Center (CBARC), Oregon State University. Jan 26, 2022.
- Córdova, S.C.**, "*Eficiencia y estabilidad de la transferencia de carbono derivado de residuos vegetales hacia la formación de asociaciones órgano-mineral de la materia orgánica en el suelo*". College of Engineering and Environmental Sciences, De Las Americas University (UDLA), Quito, Ecuador. Jan. 4, 2018.
- Córdova, S.C.**, "*Soybean Nitrogen Dynamics*". Agronomy Department IASA, Fuerzas Armadas del Ecuador University (ESPE), Sangolqui, Pichincha – Ecuador. Dec. 20, 2017.
- Córdova, S.C.**, "*Soybean Nitrogen Dynamics*." Agronomy Department, Central del Ecuador University (UCE), Quito, Ecuador. Dec 21, 2017
- Córdova, S.C.***, Martinez-Feria, R., "*Forecast and assessment of Cropping systems*." Global Programs, CALS, Iowa State University, Ames, IA. Audience: Visiting scholars from Asia and South America part of the International Aid Association. Dec 8, 2016.
- Córdova, S.C.**, Archontoulis, S., "*Yield Forecast tool for Corn and Soybean Production in Iowa*." Iowa Soybean Research Center, Ames, IA. Audience: Ecuadorian Soybean Producers and members of the Trade Team. Apr 22, 2016.

National and International Meetings

- Córdova, S.C.**, Gelfand, I., Robertson, G. P. "*Long-Term Contributions of Belowground Biomass to Soil Carbon by Perennial Energy Crops Grown in the Upper Midwest US*." ASA-SSA-CSSA International Annual Meetings, Salt Lake City, UT. Nov. 7-10, 2021
- Córdova, S.C.**, Moore, K. J., Robertson, G. P., "*Switchgrass tiller demography as influenced by ecotype and its relationship to carbon and nitrogen dynamics*." ASA-SSA-CSSA International Annual Meetings, Virtual. Nov. 4-7, 2020.
- Córdova, S.C.**, Kravchenko, A. N., Robertson, G. P., "*Whole profile soil carbon change after 25 years of differential agricultural management*". ESA International Annual Meeting. Virtual. Aug. 2-7, 2020.
- Córdova, S.C.**, Gelfand, I., Vanderwulp, S., Kahmark, K., Robertson. GP, "*Root-to-Shoot ratios and contributions to soil carbon by perennial bioenergy crops in the Upper Midwest US*." ASA-SSA-CSSA International Annual Meetings, San Antonio, TX. Nov 11, 2019.
- Córdova, S.C.**, Castellano, M.J., Archontoulis, S.V., "*In-season soybean biological nitrogen fixation in Iowa, USA*". ASA, and CSSA International Annual Meetings, Baltimore, MD. Nov 6, 2018.
- Córdova, S.C.**, Castellano, M.J., Dietzel, R., Olk, D., Six, J., Archontoulis, S. V., "*Soybean Nitrogen Fixation: The Nitrogen Budget*," ASA-SSA-CSSA International Annual Meetings, Tampa, FL. Oct 24, 2017.
- Córdova, S.C.**, Castellano, M.J., Archontoulis, S. V., Dietzel, R., "*Are Soybeans in Central Iowa Nitrogen Consumers or Fixers?*". Fourth Graduate and Professional Students Research Conference, Iowa State University, Ames, IA. Apr 12, 2017.
- Córdova, S.C.**, Castellano, M.J., Dietzel, R., Archontoulis, S. V., "*Do Soybeans in Iowa Use More Nitrogen Than They Fix?*", ASA-SSA-CSSA International Annual Meetings, Phoenix, AZ. Nov 7, 2016.
- Córdova, S.C.**, Olk, D., Dietzel, R. Castellano, M.J., "*Can we build soil organic matter through greater soil organic carbon stabilization?*". Third Graduate and Professional Students Research Conference, Iowa State University, Ames, IA. Apr 12, 2016.

Workshops and Project Meetings

- Córdova, S.C.**, Gelfand, I., Robertson, G. P. "*Digging one meter deep: Long-term contributions to soil carbon by perennial energy crops*" Great Lakes Bioenergy Research Center, Sustainability Meeting, Early Career Session, Feb 15, 2022.

- Córdova, S.C.**, Kravchenko A. N., Robertson, G. P., *"Three decades of soil carbon and nitrogen accrual by different agricultural management practices."* LTAR All Scientist Meeting. Virtual. Aug 30 – Sep 1, 2021.
- Córdova, S.C.**, Kravchenko A. N., Robertson, G. P., *"Almost three decades of monitoring soil carbon and nitrogen accrual under different agricultural management."* Great Lakes Bioenergy Research Center, Carbon Accrual Session, Oct 7, 2020.
- Córdova, S.C.**, Nuccio, E., Roley, S., Hamilton, S., Robertson, G. P., *"Associative N₂ fixation variability in upland and lowland ecotypes."* Great Lakes Bioenergy Research Center, Nitrogen Fixation in Bioenergy Crops Session, Oct 7, 2020.
- Córdova, S.C.**, Kravchenko, A. N., Robertson, G. P., *"Whole profile soil carbon change after 25 years along an agricultural management gradient"*. W. K. Kellogg Biological Station - LTER Midterm Review, Virtual Meeting, Sep 9, 2020.
- Córdova, S.C.**, Moore, K. J., Robertson, G. P., *"Switchgrass tiller demography as influenced by ecotype and its relationship to carbon and nitrogen dynamics."* Great Lakes Bioenergy Research Center, All Scientist Annual Meeting, Switchgrass Sustainability Session, Apr 24, 2020.

Contributed Presentations at Scientific Meetings

*Designates student mentee

- Tejera, M., Roney, H., **Córdova, S. C.**, Robertson, G.P., Walker, B., *"Do perennial grasses age? A closer look at late-season photosynthesis and sink dynamics"*. ASA-SSA-CSSA International Annual Meetings, Salt Lake City, UT, Nov 7-10, 2021
- Moore, K., **Córdova, S. C.**, Robertson, G.P., *"Tiller Demography within Cool-Season Grass Populations."* ASA-SSA-CSSA International Annual Meetings, Salt Lake City, UT, Nov 7-10, 2021
- Roley, S., Vizza, C., Robertson, P., **Córdova, S. C.**, *"Switchgrass nitrogen sources."* Sorghum Mini Symposium, MI, Apr. 27, 2021.
- Archontoulis, S.V., Castellano, M.J., Licht, **Córdova, S. C.**, et al., *"Predicting Crop Yields and Soil-Plant Nitrogen Dynamics in the US Corn Belt."* ASA-SSA-CSSA International Annual Meetings, San Antonio, TX. Nov 11, 2019.
- Poffenbarger, H.J. **Córdova, S.C.**, *"Soil carbon and nitrogen cycling in Iowa cropping systems."* 4R Technology Review and Summer Field Day. Field Extension and Education Laboratory, Ames, IA. Oct 14, 2017.
- Boss, J.*, **Córdova, S.C.**, *"Soybean yield response to nitrogen applied at different growth stages."* Undergraduate Research Symposium, Iowa State University, Ames, IA. Apr 11, 2017.
https://lib.dr.iastate.edu/undergradresearch_symposium/2017/presentations/47/
- Archontoulis, S.V., Castellano, M.J., Dietzel, R., **Córdova, S. C.**, et al., *"Understanding the 2016 yields and interactions between soils, crops, climate, and management"*. Integrated Crop Management Conference, Ames, IA. Nov.30, 2016.
- Castellano, M.J., Archontoulis, S.V., **Córdova, S. C.**, Dietzel, R., Poffenbarger, H.J. *"Nitrogen myths and realities"*. Integrated Crop Management Conference, Ames, IA. Nov.30, 2016.
- Archontoulis, S.V., Licht, M., Dietzel, R., **Córdova, S. C.**, et al., *"Forecasting yields and in-season crop-water nitrogen needs using simulation models."* Integrated Crop Management Conference, Ames, IA. Nov 30, 2015.
- Archontoulis, S. V., Dietzel, R., Licht, M., **Córdova, S. C.**, et al., *"Forecasting and Assessing Cropping Systems (FACTS)."* ASA-SSA-CSSA International Annual Meetings, Phoenix, AZ. Nov 6, 2016.
- Archontoulis, S.V., Licht, M., Dietzel, R., **Córdova, S. C.**, et al., *"In-Season Forecast of Crop Yields, Soil Water-Nitrogen, and Climate Using APSIM And Wrf Models in Iowa, USA."* International Crop Modelling Symposium, Berlin. Mar. 15-17, 2016.
- Archontoulis, S., Licht, M., Dietzel, R., **Córdova, S. C.**, et al., *"In-Season Corn and Soybean Yield Forecast in Iowa Using APSIM."* ASA-SSA-CSSA International Annual Meetings, Minneapolis, MN. Nov 5, 2015. <https://scisoc.confex.com/scisoc/2015am/webprogram/Paper94828.html>

Poster presentations

*Designates student mentee

- Tejera, M., **Córdova, S. C.**, Robertson, G. P., Walker, B., 2021. "Do perennial grasses age? A closer look at late-season photosynthesis and sink dynamics". Great Lakes Bioenergy Research Center, All Scientist Annual Meeting, May 11, 2021.
- Córdova, S. C.**, Hamilton, S. K., Robertson, G. P., 2021. "Associative Nitrogen Fixation (ANF) in High-Yielding Switchgrass Varieties." American Society of Plant Biology Annual Meeting, Plant Biology 2021 Worldwide Summit, Jul. 19-23.
- Córdova, S. C.**, Mbogo, N.*, Hamilton, S. K., Robertson, G. P., 2020. "Associative Nitrogen Fixation (ANF) in High-Yielding Switchgrass Varieties." 2020 Genomic Sciences Program Annual PI Meeting, Washington, DC, Feb. 23-26, 2020.
- Córdova, S.C.**, Kravchenko, A. N., VanderWulp, S., Kahmark K., Robertson, G. P., 2019. "Whole profile soil carbon change after 25 years along an agricultural management gradient". American Geophysical Union Fall Meeting, San Francisco, CA. Dec 10.
- McHugh, C.*, Robertson, G.P., **Córdova, S.C.**, 2019. "Effects of Nitrogen on Light Harvesting Ability in Bioenergy Crops." Undergraduate Internship and Research Symposium, W.K. Kellogg Biological Station, Michigan State University, Hickory Corners, MI. Jul 31.
- Mbogo, N.*, Robertson, G.P., **Córdova, S.C.**, 2019. "How does associative nitrogen fixation in switchgrass vary within the plant and among varieties?". Undergraduate Internship and Research Symposium, W.K. Kellogg Biological Station, Michigan State University, Hickory Corners, MI. Jul 31.
- Córdova, S.C.**, 2017. "Iowa Soybean Nitrogen Fixation Consider in Nitrogen Budgets." The 47th North Central Extension-Industry Soil Fertility Conference, Des Moines, IA. Nov. 15-16.
- Córdova, S.C.**, 2017. "Plant Litter Quality Affects the Accumulation Rate, Composition, and Stability of Mineral-Associated Soil Organic Matter." ASA-SSA-CSSA International Annual Meetings, Tampa, FL. Oct. 22-25.
- Córdova, S.C.**, 2016. "Do Soybeans in Iowa Use More Nitrogen Than They Fix?". ASA-SSA-CSSA International Annual Meetings, Phoenix, AZ. Nov 9.
- Smith, C.*, **Córdova, S.C.**, 2016. "Do soil inorganic nitrogen levels increase during the off-season?". Science with Practice Symposium, Iowa State University, Ames, IA. Apr 16.
- Córdova, S.C.**, 2016. "Can we build soil organic matter through greater soil organic carbon stabilization?". Soil health conference, Ames, IA. Feb 2.
- Córdova, S.C.**, 2016. "Does Bt-corn differ its chemical composition from conventional corn?". Raymond F. Baker Plant Breeding Symposium, Ames, IA. Mar 3.
- Córdova, S.C.**, 2015. "The impact of plant litter quality on soil organic carbon stabilization." ASA-SSA-CSSA International Annual Meetings, Minneapolis, MN. Nov 16.

ACADEMIC SERVICE & LEADERSHIP

- 2015 - present **Journal Reviewer:** Global Change Biology, Geoderma, Soil Biology and Biogeochemistry, Agronomy Journal, Sustainability MDPI, Soil Science and Plant Nutrition.
- 2022 **Elected Leader Bioenergy Systems Community**, American Association of Agriculture (ASA).
- 2021-2022 **Academic Collaborator** – Department of Agronomy, Central del Ecuador University. June 2021 – June 2022.

- 2021 **Co-Organizer and Moderator** – Symposium Bringing Back the Momentum of Bioenergy Production in the US: Assessment of the Renewable Fuel Standard Program. Invited speakers: Dr. Tom Richard (PSU), Dr. Madhu Khanna (U. of Illinois), Dr. Kevin Kephart (USDA-NIFA). ASA-SSA-CSSA International Annual Meetings, Salt Lake City, UT, Nov 7-10, 2021
- 2021 **Moderator** – Breakout session: Ecosystem Services in Agricultural Fields. LTER All Scientist Meeting. Hickory Corners, MI. Sep 23, 2021.
- 2021 **Co-Organizer and Moderator** – Breakout session: LTAR-NEON integrating efforts on soil carbon stability and trajectories. LTAR All Scientist Meeting. Virtual. Aug 30 – Sep 1, 2021.
- 2021 **Elected Vice-Leader Bioenergy Systems Community**, American Association of Agriculture (ASA).
- 2021 **Participant of the Virtual Advocacy Event**, meeting with Michigan diplomats: Sen. Peters, Sen. Stabenow, Rep. Upton, and Rep. Kildee; organized by the American Institute of Biological Sciences. Apr 21 to 22.
- 2020 **Co-Organizer and Moderator - Nitrogen Fixation in Bioenergy Crops Session**, Great Lakes Bioenergy Research Center Sustainability Virtual Meeting. Oct 7.
- 2020 **Co-host and Member Planning Committee of the Long-Term Agricultural Research Network (LTAR) Annual Meeting**, Michigan State University, Apr 26 to May 1 (300 participants).
- 2019 **Moderator at the Soil Fertility and Plant Nutrition General Oral III**, ASA-SSA-CSSA International Annual Meeting, San Antonio, TX. Nov 13.
- 2019 **Member Planning Committee of the Great Lakes Bioenergy Research Center Environmental Sustainability Meeting**, Michigan State University, Hickory Corners, MI. Jul 11 to Oct 2.
- 2018 **Research symposium poster judge**, Session of Bioenergy Systems, ASA, and CSSA, International Annual Meetings, Nov 6.
- 2018 **Research symposium oral presentation judge**, Session of Cover Crop Management, ASA, and CSSA, International Annual Meetings, Nov 5.
- 2016 - 2018 **Member of the Graduate Student Committee of Soil Science**, Soil Science Society of America (SSSA).
- 2017 **Research symposium poster judge**, Session of Soil and Environmental Sciences, ASA, CSSA, and SSSA International Annual Meetings, Oct 23.
- 2016 - 2018 **Member of the International Committee Soil Science Award**, Soil Science Society of America (SSSA).
- 2016 - 2017 **Senator of the Graduate & Professional Student Senate (GPSS)**, Iowa State University, Ames, IA.
- 2016 **Research symposium poster judge**, Session of Soil Fertility, undergraduate competition, ASA-SSA-CSSA International Annual Meetings, Nov 7.
- 2015 **Vice-president**, Agronomy Graduate Student Club, Department of Agronomy, Iowa State University, Ames, IA.
- Diversity, Equity, and Inclusion Contributions*
- 2018 - 2020 **Member of the Diversity, Equity and Inclusion Committee**, W.K. Kellogg Biological Station, Michigan State University, Hickory Corners, MI.
- 2017 - 2018 **Co-PI and Moderator of the Workshop Series "Building Gender Parity in Agricultural Leadership Roles through Tailored Professional Development"**, Iowa State University, Ames, IA. Fall and Spring semester (25-35 participants STEM graduate students).
- 2016 - 2017 **Mentor and member of the International Student Graduate Learning Community Program**, Iowa State University, Ames, IA.

Professional Affiliations

Societies: Ecological Society of America (ESA), American Society of Agronomy (ASA), Soil Science Society of America (SSSA), Crop Science Society of America (CSSA), Ecuadorian Soil Science Society, Gamma Sigma Delta Honor Society.

Networks: Great Lakes Bioenergy Research Center (GLBRC), Long-Term Agroecosystem and Ecological Research Network (LTAR & LTER), Latinas in Earth and Planetary Sciences (GeoLatinas), Ecuadorian female scientist network (REMCI).

PROFESSIONAL DEVELOPMENT

2021

- Communications Boot Camp for Scientists (16 hours), American Institute of Biological Sciences.

2020

- Digital Learning Experiences During the Pandemic – STEM Teaching Essentials Discussion (2 hours), Michigan State University.
- Bystandard Intervention Training (2 hours), W. K. Kellogg Biological Station, Michigan State University.
- Developing Meaningful Feedback for Students (4 hours), Michigan State University.
- Essential Skills to Navigate Through Difficult Times (6 hours), Michigan State University.
- Writing for Impact and Influence Course (9 hours), American Institute of Biological Sciences.

2019

- Cultural Intelligence Workshop Series (6 hours), W. K. Kellogg Biological Station, Michigan State University.
- Media 101 – Science Communication (3 hours), ASA-SSA-CSSA International Annual Meeting, San Antonio, TX.
- Isotopes in Spatial Ecology and Biogeochemistry Course (10 days), University of Utah.

2014 - 2018

- Women's Leadership Workshop Series (10 sessions), Iowa State University.
- Personal and Professional Development Program (10 hours), Iowa State University.

CERTIFICATES

- "Communications Boot Camp for Scientists," American Institute of Biological Sciences.
- "*Writing for Impact and Influence*," American Institute of Biological Sciences.
- Basic R – certification No. 4,053,148 granted by DataCamp.
- Intermediate R – certification No. 4,280,237 granted by DataCamp.
- "*National Adaptation Plans: Building Resilience in Agriculture*," The United Nations (01/15/18).
- "*Specialized Module on Children and Climate Change*," The United Nations (11/20/17).
- "*Responsible Conduct Research Training*," CITI Program. Record ID: 24260229 (2017 - 2020).

ADDITIONAL SKILLS

Languages: Spanish (native), English (professional), German (basic), Italian (basic).

Programing and Modelling: R (intermediate), SAS (advanced), APSIM (intermediate), SigmaPlot, ArcGIS (basic), Adobe Illustrator, Office (advanced).