

Curriculum Vitae

COLE D. GROSS

Assistant Professor
Department of Sustainable Resources Management
State University of New York College of Environmental Science and Forestry
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EDUCATION

PhD	University of Alberta, Renewable Resources (Soil Science)	2017/9–2022/8
MSc	University of Washington, Environmental and Forest Sciences	2015/6–2017/6
BA	University of West Florida, Philosophy/Religious Studies Concentration in Environmental Studies/Natural Science	2006/8–2010/8

EMPLOYMENT

Assistant Professor , State University of New York, College of Environmental Science and Forestry (SUNY ESF)	2023/9–present
Adjunct Assistant Professor , SUNY ESF	2023/4–2023/9
Postdoctoral Associate , Yale University	2022/9–2023/8
Forest Soils Laboratory Manager , University of Alberta	2018/6–2022/8
Research Assistant , University of Alberta	2017/7–2022/8
Graduate Research Assistant , University of Alberta	2021/2–2021/3
Graduate Research Assistant , University of Alberta	2020/6–2020/8
Graduate Research Assistant , University of Alberta	2019/2–2019/5
Soils Intern , Washington State Department of Natural Resources	2016/6–2016/9

AWARDS

2022–2023 Graduate Student PhD Thesis Award University of Alberta, Faculty of Agricultural, Life & Environmental Sciences	2023/3
C.F. Bentley & ASSW Awards for Student Oral Presentation Canadian Society of Soil Science (first place)	2022/5

Alberta Soil Science Workshop (first place)

Graduate Student Teaching Award 2022/4
University of Alberta, Graduate Students' Association

Graduate Student Teaching Award 2020/4
University of Alberta, Faculty of Graduate Studies and Research

Graduate Student Teaching Award 2020/4
University of Alberta, Graduate Students' Association

Graduate Student Teaching Award 2019/4
University of Alberta, Faculty of Graduate Studies and Research

COURSES

Instructor, SUNY ESF 2024 (Spring)
Agroforestry (FOR 496/796)

Graduate Teaching Assistant, University of Alberta 2018–2022 (Winter)
Forest Soils (RENR 314/749)

Graduate Teaching Assistant, University of Alberta 2021 (Fall)
Introduction to Soil Science (RENR 210)

Graduate Teaching Assistant, University of Alberta 2021 (Fall)
Geo. Info. Sys. App. in Ren. Res. (RENR 426/526)

Graduate Teaching Assistant, University of Alberta 2018–2020 (Fall)
Intro. to Geo. Tech. in Nat. Res. Mgmt. (RENR 201)

Graduate Teaching Assistant, University of Washington 2015–2017 (Year-Round)
Introduction to Environmental Science (ESRM 100)

PUBLICATIONS

Peer-Reviewed

Lemelin C, **Gross CD**, Bertholet R, Gares S, Hall M, Henein H, Kozlova V, Spila M, Villatoro V, Haave N (2023) Dismantling disciplinary silos: A Faculty Learning Community facilitates interdisciplinary teaching development. *Journal of Faculty Development*, 37(2), 51–59.

Gross CD, Bork EW, Carlyle CN, Chang SX (2022) Agroforestry perennials reduce nitrous oxide emissions and their live and dead trees increase ecosystem carbon storage. *Global Change Biology*, 28, 5956–5972. [doi:10.1111/gcb.16322](https://doi.org/10.1111/gcb.16322)

Gross CD, Bork EW, Carlyle CN, Chang SX (2022) Biochar and its manure-based feedstock have divergent effects on soil organic carbon and greenhouse gas emissions in croplands. *Science of The Total Environment*, 806, 151337.

[doi:10.1016/j.scitotenv.2021.151337](https://doi.org/10.1016/j.scitotenv.2021.151337)

Ma Z, Bork EW, Carlyle CN, Tieu J, **Gross CD**, Chang SX (2022) Carbon stocks differ among land-uses in agroforestry systems in western Canada. *Agricultural and Forest Meteorology*, 313, 108756. [doi:10.1016/j.agrformet.2021.108756](https://doi.org/10.1016/j.agrformet.2021.108756)

An Z, Bork EW, Duan X, **Gross CD**, Carlyle CN, Chang SX (2022) Quantifying past, current, and future forest carbon stocks within agroforestry systems in central Alberta, Canada. *GCB Bioenergy*, 14, 669–680. [doi:10.1111/gcbb.12934](https://doi.org/10.1111/gcbb.12934)

Weber TL, Hao X, **Gross CD**, Beauchemin KA, Chang SX (2022) The effect of manure from cattle fed barley- vs corn-based diets on greenhouse gas emissions depends on soil type. *Soil Systems*, 6, 47. [doi:10.3390/soilsystems6020047](https://doi.org/10.3390/soilsystems6020047)

Battaglia ML, Thomason WE, Fike JH, Evanylo GK, Stewart RD, **Gross CD**, Seleiman M, Babur E, Sadeghpour A, Harrison MT (2022) Corn and wheat residue management effects on greenhouse gas emissions in the Mid-Atlantic USA. *Land*, 11, 846.

[doi:10.3390/land11060846](https://doi.org/10.3390/land11060846)

Lemelin C, **Gross CD**, Bertholet R, Gares S, Hall M, Henein H, Kozlova V, Spila M, Villatoro V, Haave N (2021) Mitigating student resistance to active learning by constructing resilient classrooms. *Bioscene*, 47(2), 3–9. [ISSN 1539-2422](https://doi.org/10.3390/bioscene4720003)

Weber TL, Hao X, **Gross CD**, Beauchemin KA, Chang SX (2021) Effect of manure from cattle fed 3-nitrooxypropanol on anthropogenic greenhouse gas emissions depends on soil type. *Agronomy*, 11, 371. [doi:10.3390/agronomy11020371](https://doi.org/10.3390/agronomy11020371)

Gross CD, Harrison RB (2019) The case for digging deeper: Soil organic carbon storage, dynamics, and controls in our changing world. *Soil Systems*, 3, 28.

[doi:10.3390/soilsystems3020028](https://doi.org/10.3390/soilsystems3020028)

James JN, **Gross CD**, Dwivedi P, Myers T, Santos F, Bernardi R, Fidalgo M, Faria D, Amaral I, Harrison R, Butman D (2019) Land use change alters the radiocarbon age and composition of soil and water-soluble organic matter in the Brazilian Cerrado.

Geoderma, 345, 38–50. [doi:10.1016/j.geoderma.2019.03.019](https://doi.org/10.1016/j.geoderma.2019.03.019)

Gross CD, James JN, Turnblom EC, Harrison RB (2018) Thinning treatments reduce deep soil carbon and nitrogen stocks in a coastal Pacific Northwest forest. *Forests*, 9, 1–19. [doi:10.3390/f9050238](https://doi.org/10.3390/f9050238)

Gross CD, Harrison RB (2018) Quantifying and comparing soil carbon stocks: Underestimation with the core sampling method. *Soil Science Society of America Journal*, 82, 949.

[doi:10.2136/sssaj2018.01.0015](https://doi.org/10.2136/sssaj2018.01.0015)

Non-Peer-Reviewed

Gross CD (2019) Strengthen your teaching skills to enhance student learning. *CSA News Magazine*, 64, 2, 26–28. [doi:10.2134/csa2019.64.0222](https://doi.org/10.2134/csa2019.64.0222)

Gross CD (2019) Annotated bibliography: Active learning, student resilience. University of Alberta Centre for Teaching and Learning. [doi:10.7939/r3-72j8-p869](https://doi.org/10.7939/r3-72j8-p869)

Gross CD (2018) Your science story: Part II, Writing outside the box. *CSA News Magazine*, 63, 11, 40–41. [doi:10.2134/csa2018.63.1128](https://doi.org/10.2134/csa2018.63.1128)

Gross CD, Battaglia M (2018) Your science story: Part I, Avoiding an impenetrable fog. *CSA News Magazine*, 63, 10, 34–35. [doi:10.2134/csa2018.63.1026](https://doi.org/10.2134/csa2018.63.1026)

PRESENTATIONS (*SELECTED*)

Proposed/Accepted Poster Presentation (2023/10) “Biochar reduces root-driven priming of clay-associated carbon within silt-size microaggregates,” Agronomy, Crop, and Soil Science Societies of America International Annual Meeting, St. Louis, MO, USA. Gross CD, Bork EW, Wissel B, Carlyle CN, Chang SX.

Invited Oral Presentation (2023/8) “Moving toward a carbon sequestration approach that recognizes and enhances soil biodiversity,” Ecological Society of America Annual Meeting, Portland, OR, USA. Freedman ZB, Gross CD.

Proposed/Accepted Oral Presentation (2022/11) “Agroforestry perennials reduce nitrous oxide emissions and their live and dead trees increase ecosystem carbon storage,” Agronomy, Crop, and Soil Science Societies of America International Annual Meeting, Baltimore, MD, USA. Gross CD, Bork EW, Carlyle CN, Chang SX.

Proposed/Accepted Oral Presentation (2022/11) “Root-driven destabilization of clay-protected carbon within silt-size microaggregates,” Agronomy, Crop, and Soil Science Societies of America International Annual Meeting, Baltimore, MD, USA. Gross CD, Bork EW, Wissel B, Carlyle CN, Chang SX.

Proposed/Accepted Poster Presentation (2022/8) “Soil carbon stocks and emissions across two common agroforestry systems are affected by deadwood,” 22nd World Congress of Soil Science, Glasgow, SCT, UK. Gross CD, Bork EW, Carlyle CN, Chang SX. (Received full scholarship.)

Proposed/Accepted Poster Presentation (2022/8) “Root-driven clay aggregate disruption is a key mechanism of rhizosphere priming across land uses and soil depths,” 22nd World Congress of Soil Science, Glasgow, Scotland, UK. Gross CD, Bork EW, Wissel B, Carlyle CN, Chang SX. (Received full scholarship.)

Proposed/Accepted Poster Presentation (2022/7) “Agroforestry perennials reduce nitrous oxide emissions and their live and dead trees increase ecosystem carbon storage,”

World Congress on Agroforestry, Quebec City, QC, CAN. Gross CD, Bork EW, Carlyle CN, Chang SX. (Received full scholarship.)

Proposed/Accepted Oral Presentation (2022/5) “Agroforestry perennials reduce nitrous oxide emissions and their live and dead trees increase ecosystem carbon storage,” Canadian Society of Soil Science Annual Meeting and Alberta Soil Science Workshop, Edmonton, AB, CAN. Gross CD, Bork EW, Carlyle CN, Chang SX.

Proposed/Accepted Poster Presentation (2022/5) “Clay aggregates as the nucleus of root-driven soil organic carbon priming,” Canadian Society of Soil Science Annual Meeting and Alberta Soil Science Workshop, Edmonton, AB, CAN. Gross CD, Bork EW, Wissel B, Carlyle CN, Chang SX.

Proposed/Accepted Oral Presentation (2022/3) “Biochar and its manure-based feedstock have divergent effects on soil organic carbon and greenhouse gas emissions in croplands,” Soils and Crops Conference and Workshop, Saskatoon, SK, CAN. Gross CD, Bork EW, Carlyle CN, Chang SX. (Received full scholarship.)

Proposed/Accepted Oral Presentation (2021/11) “Biochar and its manure-based feedstock have divergent effects on soil organic carbon and greenhouse gas emissions in croplands,” Agronomy, Crop, and Soil Science Societies of America International Annual Meeting, Salt Lake City, UT, USA. Gross CD, Bork EW, Carlyle CN, Chang SX.

Proposed/Accepted Poster Presentation (2021/11) “Root-driven clay aggregate disruption is a key mechanism of rhizosphere priming across land uses and soil depths,” Agronomy, Crop, and Soil Science Societies of America International Annual Meeting, Salt Lake City, UT, USA. Gross CD, Bork EW, Wissel B, Carlyle CN, Chang SX.

Proposed/Accepted Oral Presentation (2021/6) “Enhancing soil organic carbon storage through forested buffers and biochar application in agricultural lands,” North American Agroforestry Conference, virtual. Gross CD, Bork EW, Carlyle CN, Chang SX. (Received full scholarship.)

Proposed/Accepted Oral Presentation (2021/6) “Enhancing soil organic carbon storage through forested buffers and biochar application in agricultural lands,” Canadian Society of Soil Science Annual Meeting, virtual. Gross CD, Bork EW, Carlyle CN, Chang SX.

Proposed/Accepted Oral Presentation (2021/3) “Enhancing soil organic carbon storage through forested buffers and biochar application in agricultural lands,” Soils and Crops Conference and Workshop, virtual. Gross CD, Bork EW, Carlyle CN, Chang SX. (Received full scholarship.)

Invited Oral Presentation (2019/9) “Agroforestry Webinar,” Rural Routes to Climate Solutions, Alberta, CAN. Gross CD, Bork EW, Carlyle CN, Chang SX.

Invited Oral Presentation (2018/6) “Bridging the gap between creativity and structure,” University of Alberta, Edmonton, AB, CAN. Gross CD.

Proposed/Accepted Oral Presentation (2017/10) “Soil carbon response to thinning and fertilization treatments in a coastal Pacific Northwest forest,” Agronomy, Crop, and Soil Science Societies of America International Annual Meeting, Tampa, FL, USA. Gross CD, James JN, Turnblom EC, Harrison RB. (Received travel scholarship.)

Proposed/Accepted Oral Presentation (2017/10) “Coupling solid- and liquid-phase soil organic matter analyses to understand the consequences of forest conversion and management on Brazilian Oxisols,” Agronomy, Crop, and Soil Science Societies of America International Annual Meeting, Tampa, FL, USA. James JN, Gross CD, Dwivedi P, Myers T, Santos F, Bernardi R, Fidalgo M, Faria D, Amaral I, Harrison R, Butman D. (Received travel scholarship.)

Proposed/Accepted Oral Presentation (2016/11) “Effects of nitrogen fertilization and thinning treatments on subsurface soil carbon and nitrogen,” Agronomy, Crop, and Soil Science Societies of America International Annual Meeting, Phoenix, AZ, USA. Gross CD, James JN, Turnblom EC, Harrison RB. (Received travel scholarship.)

Invited Oral Presentation (2016/4) “Forest management impacts on soil carbon: Case studies from wet coastal to dry interior Pacific Northwest forests,” Society for Ecological Restoration Regional Conference, Portland, OR, USA. Gross CD, Footen PW, James JN, Himes AJ, Harrison RB.

GRANTS (*SELECTED*)

Sun Grant Program Northeast Region 2024/1–2025/6
United States Department of Agriculture
PI: Gross CD; *Co-PIs:* Fernandez CW, Therasme O, Volk TA
(\$375,000 USD)

Izaak Walton Killam Memorial Scholarship 2020/9–2022/8
University of Alberta, Faculty of Graduate Studies and Research
(\$45,000 CAD per annum, honorary while holding Vanier;
\$3,800–4,400 CAD per annum differential fees award)

Doctoral Vanier Canada Graduate Scholarship 2019/5–2022/4
Government of Canada & Natural Sciences and Engineering
Research Council (NSERC) of Canada (\$50,000 CAD per annum)

President’s Doctoral Prize of Distinction 2019/5–2022/4
University of Alberta (\$5,800–10,000 CAD per annum)

Syngenta Graduate Scholarship in Sustainable Agriculture 2018/9–2019/8
University of Alberta (\$7,600 CAD)

University of Alberta Doctoral Recruitment Scholarship
University of Alberta (\$10,000 CAD)

2017/9–2018/8

SERVICE

Students Mentored

Research Supervisor, Yale University 2023/6–2023/7
Program: Undergraduate Research in the Environmental Sciences
Undergraduate Students: Cynthia Huerta, Christine Lumen

Research Supervisor, University of Alberta 2021/8–2021/10
Program: Mitacs
Undergraduate Student: Salvador Meza

Research Supervisor, University of Alberta 2020/5–2021/3
Postgraduate Students: Sheetal Patel, Mary Villeneuve

Research Supervisor, University of Alberta 2020/7–2020/8
Program: Women in Scholarship, Engr., Sci., and Technology
Highschool Students: Hailey Anderson, Danielle Ratcliffe

Research Supervisor, University of Alberta 2019/5–2019/11
Program: Undergraduate Research Initiative
Undergraduate Student: Maliha Rahman

Research Supervisor, University of Alberta 2019/7–2019/10
Program: University of Alberta International
Undergraduate Student: Max Menear

Research Supervisor, University of Alberta 2019/4–2019/9
Program: Undergraduate Research Initiative
Undergraduate Students: Ming Cao, Dhaniket Patel

Research Supervisor, University of Alberta 2018/7–2018/10
Program: University of Alberta International
Undergraduate Student: Runli Yuan

Research Supervisor, University of Alberta 2018/7–2018/8
Program: Women in Scholarship, Engr., Sci., and Technology
Highschool Students: Emma Bowman, Wendi Yu

Research Supervisor, University of Alberta 2018/5–2018/8
Program: Natural Sci. and Engr. Research Council of Canada
Graduate Student: Jonathan Tieu

Research Supervisor, University of Washington 2016/4–2016/6

Program: Undergraduate Research (ESRM 499)
Undergraduate Students: Hanzhang Ding, Tony Scigliano

Speaking Engagements

Guest Lecturer , Introduction to Soil Science (RENR 210) University of Alberta, Department of Renewable Resources	2022/11
Guest Lecturer , Environmental Soil Science (ESL Program) University of Alberta, Department of Renewable Resources	2022/9
Guest Lecturer , Forest Soils (RENR 314/749) University of Alberta, Department of Renewable Resources	2022/3
Guest Lecturer , Introduction to Soil Science (RENR 210) University of Alberta, Department of Renewable Resources	2021/11
Guest Lecturer , Environmental Soil Science (ESL Program) University of Alberta, Department of Renewable Resources	2021/11
Invited Panelist , Teaching in the Canadian Classroom University of Alberta, Faculty of Graduate Studies and Research	2021/1
Guest Lecturer , Forest Soils (RENR 314/749) University of Alberta, Department of Renewable Resources	2019/1
Invited Panelist , PhD Onboarding Seminar: Getting off on the Right Foot University of Alberta, Faculty of Graduate Studies and Research	2018/8
Guest Lecturer , Adv. Forest Soil Fert. and Chem. (ESRM 414/514) University of Washington, School of Envir. & Forest Sciences	2017/4
Guest Lecturer , Introduction to Soil Science (ENVS 204) Seattle Central College, Environmental Science Program	2017/2
Guest Lecturer , Envir. Sci. and Resource Mgmt. Seminar (ESRM 429) University of Washington, School of Envir. & Forest Sciences	2017/2
Guest Lecturer , Natural Science and the Environment (ENVS 204) Green River Community College, Environmental Science Program	2017/1

Other Service

Peer-Reviewer for:

Global Change Biology (2), Science of the Total Environment (3), Biology & Fertility of Soils (6), Applied Soil Ecology (3), European Journal of Soil Science (2), Global Change Biology Bioenergy (1), Carbon Balance and Management (3), Ecological Applications (1), Forests (8)

Guest Editor Special Issue of <i>Land</i> , MDPI Open Access Journal (IF: 3.9)	2022/9–2023/9
Equity, Diversity, and Inclusivity Committee Member University of Alberta, Department of Renewable Resources	2021/9–2022/8
Research Supervisor and Mentor University of Alberta, Women in Scholarship, Engineering, Science and Technology	2018/7–2022/8
Soil Science Presenter University of Alberta, U School	2017/11–2022/8
Green and Gold Grant Adjudicator University of Alberta, Career Centre	2019/6–2021/6
Graduate Student Symposium Organizer University of Washington, School of Envir. & Forest Sciences	2017/1–2017/3
Scientist Mentor Bryant Elementary School, Seattle, Washington	2016/11–2017/3
Natural Resources Career Fair Organizer University of Washington, School of Env. and Forest Sciences	2016/10–2017/2

OFFICES

Agronomy, Crop, and Soil Science Societies of America Member	2015–present
SSSA K–12 Committee Member	2018/1–2021/12
<i>SSSA K–12 Soil Basics Poster Subcommittee Member</i>	2019/1–2020/1
Graduate Student Committee Member	2017/1–2019/12
<i>Board of Director Representative Subcommittee Member</i>	2017/5–2019/12
<i>Communicating Science Subcommittee Member</i>	2019/2–2019/11
<i>Leadership Conference Subcommittee Member</i>	2017/1–2019/1
Northwest Forest Soils Council Member	2017–present
BMP document editor	2023/3–present
Canadian Society of Soil Science Member	2021–present
CSSS-ASSW 2022 Soil Carbon Cycling Session Convener	2021/11–2022/5
Society of American Foresters Member (UW Chapter)	2015–2017
Chair (former Vice Chair); Website Developer and Manager	2015/10–2017/9
Society for Ecological Restoration Member (UW Chapter)	2015–2017
Restoration Area Manager; Website Developer and Manager	2015/6–2016/8