

The University of Northern British Columbia
Ecosystem Science and Management Program
College of Science and Management (CSAM)
3333 University Way, Prince George, BC, V2N 4Z9
Email: chris.opio@unbc.ca
Tel: 1-250-960-5868

CHRISTOPHER OPIO

Curriculum Vitae (CV)

ACADEMIC POSITIONS

2016- Present	Full Professor
2005-2016	Associate Professor
1995-2005	Assistant Professor (Tenured in 2001)
Jan-Apr 1995	Sessional Lecturer
1993	Teaching Assistant, University of Alberta

SCHOLARLY AND PROFESSIONAL POSITIONS

2007-Present	Founder, President and CEO Northern Uganda Development Foundation (NUDF)
May -Dec 1994	Researcher/Consultant; Hunter, Opio & Associates, Edmonton
Oct-Nov 1989	Research Associate; Integrated Environments Ltd., Calgary
May-Aug 1988	Forest Technician; Alberta Forest Service, Edmonton

EDUCATION

1990-1994	Doctor of Philosophy (PhD), Agroforestry, Department of Renewable Resources, University of Alberta, Edmonton, AB <i>Dissertation: Role of Sesbania sesban fallow system in restoring soil productivity, and its integration in agricultural land use systems (Supervisors: Drs. P. Murphy and L.P. Apedaile)</i>
1987-1989	MEDes (Environmental Science), Faculty of Environmental Design, University of Calgary, Calgary, AB <i>Thesis (Project): Forest management in Bragg Creek, Southern Alberta. (Supervisor: Dr. Rich Revel)</i>
1982-1987	BSc (Forest Management), Faculty of Forestry, University of New Brunswick, Fredericton, NB <i>Thesis: Genetic variation in mineral nutrition in Black Spruce in Central New Brunswick (Supervisor: Dr. Helmut Krause)</i>

COURSES TAUGHT (1995-Present)

NREM 100-Fields Skills
NRES 100-Communications in Natural Resources and Environmental Studies
NREM 203-Resource Inventories and Measurements
FSTY 305-Silviculture
FSTY 309- Fire Ecology and Management
NREM 333- Summer Camp
BIOL 411-Conservation Biology
NREM 413/613- Agroforestry
NREM 422- Undergraduate Report
NRES 430-Undergraduate Thesis
FSTY 407- Forest Products
FSTY 408-Forest Harvesting Systems
FSTY 499-Independent Studies
INTS 498-Advanced International Development
NRES 420-Professional Report
ECON 604-Poverty, Inequality and Development
FSTY 732-Forest Systems and Management
NREM 732- Integrated Resources Management
NRES 701-Graduate Seminar
NRES 703-Integrated Resource Management
NRES 704-Graduate Seminar
NREM 799-Independent Studies
NRES 801-Integrated Environmental Systems I

TEACHING RECOGNITION

In 2005, I was selected by the students as one of the popular professors at UNBC
“*MacLean’s Guide to Canadian Universities ’05*”.

GRADUATE SUPERVISION

Ganeemat Brar, MSc (2019-Present); Moringa and water purification.

Joseph Oduro Appiah, PhD (2016-2020): Forest cover changes due to shale gas development. (Completed).

Chandehl Morgan, MSc (2015-2020, Took longer to complete due to personal issue).

Toby Turner, MSc (2012-2016, Co-supervisor: Dr. Michael Rutherford). Factors contributing to the survival and growth of selected trees, shrubs, and forbs in northeastern British Columbia.

Ruth Serra, MSc (2011-2014, Co-supervisor: Dr. Damase Khasa). Sheep vegetation management in controlling competing vegetation in young conifer stands in Forth James Forest District, BC.

Tara Bergeson, MSc (2010-2014). Use of the filtrate from crop residues in cooking in rural households in Northern Uganda.

Zhengzhe He, MA (2007-2009). Export barriers to the Chinese market: insights from British Columbia forest products firms.

Mahrusha Shertobitoff, MSc (2004-2008). Factors that determine the collection of non-timber forest products (NTFPs) in the Komi Republic of Russia.

Christine Rothenbach, MSc (2002-2007). Rothenbach, C. The response of nuthatches to restorative treatments (fire and mechanical thinning) in ponderosa pine ecosystems.

Linette Keller, MSc (1997-2003, Co-supervisor: Dr. Lito Arocena): Reclamation of compacted soils of forest landings in the central interior BC.

Wendy Vasbinder, MSc (1996-2000, Co-supervisor: Dr. Brad Hawkes). Retrospective fire study in ESSF and SBS biogeoclimatic zones of BC.

Sally Hofmeier, MSc (1997-2000, Co-supervisor: Dr. Brad Hawkes). Vegetation response to various site preparation techniques in central interior of BC.

Joy Sammy, MA (1997-2001). Community based management of wildlife resources in Botswana. ,

Norman Jacob, MSc (1998-2003). Height to diameter ratio as a competition index in northern BC.

TEACHING

MEMBERSHIP OF GRADUATE SUPERVISORY/ EXAMINING COMMITTEE

Oluseyi O.Ibukun. 2019-Present. Investigating low-cost production of biosurfactants and evaluating their effectiveness in seasonal bioremediation of petroleum contaminated soils. (PhD candidate). Committee member.

Brahimi, M. 2019-Present. Local scour around vegetation patches on riverbed under ice covered condition. (PhD candidate). Committee member.

Jafari, M. 2019-Present. Effective decision analysis of oily waste management. (MSc candidate). Committee member.

Hosseinipooya, S.A. 2020. Oil spill response decision-making, modelling and optimization. (MSc candidate) Committee member.

Nyantakyi, J. 2018. Individual versus group success in round-robin tournament of an ability-based two-player game (MSc, Computer Science). Committee Member.

Liu, H. 2017. Remediation of oil-based drill cuttings using low-temperature thermal desorption (MSc. NRES). External Examiner.

Takyi, S. A. 2016. Building evidence-based research for park development and design in canadian cities: cases from the City of Vancouver Parks. (PhD NRES) Committee Member.

Kondo, S. (MSc, NRES; In Progress). Development of modified natural zeolites and study of phosphate removal from aqueous solutions. Committee Member.

Takyi, S. 2016. Green space and urbanization (completed). PhD Supervisor: Andrew Seidel

Kombo, L. 2016. Computing ethics: the case of code of ethics and privacy policies. MSc. Supervisor: Todd Whitcombe

Azmoodeh, K. 2015. The fleeting empowerment of female characters in Othello, Macbeth, King Lear, and Henry VI, Part I, II, III. MA. Supervisor: Lisa Dickson

Rashid, Md A. 2015. Gendered violence in gender-based development projects: conditional cash transfer programs and women's empowerment and development in Bangladesh. MA Supervisor: Catherine Nolin

Adjei, D. 2015. The cycle of poverty and early marriage among women in Ghana (A case study of Kassena-Nankana). MA Supervisor: Jacqueline Holler.

Udengwu, J. 2014. Mining and environment in Nigeria. MA Project.

Zahir, B. 2014. Water conservation: an adaptation of cascade analysis for complex urban facilities.(MSc, MSc. Environmental Science). Committee member.

Ogechukwu's MBA thesis, CSAM. 2013. External Examiner.

Stephanie's MA thesis, Economics Program. 2012. External Examiner.

Hawes, M. MA thesis. 2008. International Studies Program, UNBC. Her work was on forestry (community forests) in developing countries. Supervisor: Dr. Ken Wilkening.

Bhandary, K. 2002. Visitor impacts in Mount Robson Provincial Park. MNRES (Supervisor: Dr. Sanjay Nepal, UNBC) (Completed)

Connelly, S. 2001. Integration of conservation and development at local level in Surinam, West Indies. MA (International Studies) Thesis). (Supervisor: Dr. Heather Myers, UNBC) (Completed)

Mah, K. 1999. The impacts of broadcast burning after clearcutting on the diversity of ectomycorrhizal fungi associated with hybrid white spruce seedlings in central British Columbia using morphological and molecular characterization techniques. M.Sc. Thesis. University of Northern British Columbia, Prince George, BC. (*Supervisor:* Dr. Hugues Massicotte, UNBC) (Completed)

Rison, S. 1996. Community Forests in British Columbia. MA (NRES) Thesis. University of Northern British Columbia, Prince George, BC. (Supervisor: Dr. Annie Booth, UNBC) (Completed)

UNDERGRADUATE SUPERVISION

Tiwana, T. 2020. Germination viability of moringa seeds and growth of moringa cuttings.

Kunnas, A. 2018. Silvopasture agroforestry system in BC. Professional Report. Forestry Program, UNBC, Prince George, BC.

Wass, L. Community-based agroforestry in northern Uganda. Professional Report. Forestry Program, UNBC, Prince George, BC.

Second Reader for Saskia Hart's undergraduate thesis, ESM Program (Supervisors: Hugues Massicotte and Mike Rutherford) (2016)

Gilbert, N. 2013. Effects of wood ash on willow and poplar growth in mining and energy crop soils: a greenhouse trial. (Supervisor: Hugues Massicotte/Mike Rutherford; Second Reader: Chris Opio).

Trappl, J. 2011. Benefits of broadcast burning and other fire surrogate fuel treatments in British Columbia. BSc (NRM) Professional Report. Forestry Program, UNBC, Prince George, BC.

Moser, T. 2011. Feasibility of producing short-rotation woody crops for supplying biomass to bioenergy industry in BC. BSc (NRM) Professional Report. Forestry Program, UNBC, Prince George, BC.

Yang, H. 2008. Conceptual model for understanding wildland fire. BSc (NRM) Professional Report. Forestry Program, UNBC, Prince George, BC.

Crookes, G. 2008. Agroforestry in British Columbia: Benefits and Limitations. BSc (NRM) Professional Report. Forestry Program, UNBC, Prince George, BC.

Varga, F. 2004. Implications of timber reconnaissance for timber development planning. BSc (NRM) Professional Report. Forestry Program, UNBC, Prince George, BC.

Osmachenko, R. 2001. Effects of prescribed burning on vegetation response in Tata Creek in southeastern BC. Professional Report. Forestry Program, UNBC, Prince George.

Douglas, K. L. 2001. Historical analysis of fire intervals of two biogeoclimatic units in the central Chilcotin, British Columbia. BSc (NRM) Professional Report. Forestry Program, UNBC, Prince George, BC.

Flueck, S. 2001. Will forest certification ensure sustainable forest management in British Columbia? BSc (NRM) Professional Report. Forestry Program, UNBC, Prince George, BC.

Moinier, S. 2001. Inter-seasonal variations in height to diameter ratio, precipitation, and temperature for an interior spruce and a lodgepole pine plantation in central interior British Columbia. BSc (NRM) Professional Report. Forestry Program, UNBC, Prince George, BC.

Lepine, C. 2001. An evaluation of broadcast burning for silvicultural purposes in the Prince George Region. BSc (NRM) Professional Report. Forestry Program, UNBC, Prince George, BC.

Caldwell, T. 2000. Assessing the feasibility of height to diameter ratio as a measurement of tree response to site preparation and stock type. BSc (NRM) Professional Report. Forestry Program, UNBC, Prince George, BC.

Froese, K. 2000. Height to diameter ratios as an indicator of competitive stress in lodgepole pine (*Pinus contorta* var. *latifolia*) under four brushing treatments. BSc (NRM) Professional Report. Forestry Program, UNBC, Prince George, BC.

Van Diest, K. 2000. Intra-seasonal variability in height to diameter ratios among lodgepole pine in the central interior of British Columbia, Canada. BSc (NRM) Professional Report. Forestry Program, UNBC, Prince George, BC.

Vangeloven, C. 2000. Height to diameter ratio: a forester's tool for making economical and ecologically sound vegetation control decisions on managed stands in northwestern British Columbia. BSc (NRM) Professional Report. Forestry Program, UNBC, Prince George, BC.

Kuyper, C. 2000. The economic feasibility of using paper birch (*Betula papyrifera*) as a commercial species in British Columbia. BSc (NRM) Professional Report. Forestry Program, UNBC, Prince George, BC.

Holtom, D. 2000. The feasibility of legume use as a reclamation tool in the interior of British Columbia. BSc (NRM) Professional Report. Forestry Program, UNBC, Prince George, BC.

Houston, G. 2000. An analysis of the British Columbia Forest Service parattack program. BSc (NRM) Professional Report. Forestry Program, UNBC, Prince George, BC.

Gordon, J. 1999. Limitations of development of subalpine forests in the central interior of BC. BSc (NRM) Professional Report. Forestry Program, UNBC, Prince George, BC.

Baker, S. 1998. Vegetation management: a comparative analysis between aerial herbicide and manual brushing and weeding. BSc (NRM) Professional Report. Forestry Program, UNBC, Prince George, BC.

Cloarec, J. 1998. The decline of prescribed burning in Prince George Forest District over the last ten years. BSc. BSc (NRM) Professional Report. Forestry Program, UNBC, Prince George, BC.

Jacob, N. 1998. Height to diameter ratio as a competition index in the Little Bobtail Lake area, Prince George Forest District. BSc (NRM) Professional Report. Forestry Program, UNBC, Prince George, BC.

Nimchuck, W. 1998. Prescribed fire as a site preparation alternative. A one -credit report in Fire Ecology and Management. Forestry Program, UNBC, Prince George, BC.

Harper, T. 1997. The ecological and social importance of subalpine fir (*Abies lasiocarpa*) in the ESSF biogeoclimatic zone of British Columbia. BSc (NRM) Professional Report. Forestry Program, UNBC, Prince George, BC.

Fletcher, S. 1999. Effects of pile and windrow burning on soil nutrient status and temperature: A critique of literature. A one-credit report in Fire Ecology and Management. Forestry Program, UNBC, Prince George, BC.

RESEARCH

GRANTS AND FUNDING AWARDS

2020 Co-applicant, with Tarleen Tiwana and Saphida Migabo for *moringa tree stem and seeds study*. UNBC Special Undergraduate Support Award (**\$4,000**).

2019 Co-applicant, with Ganeemat Brar, for *moringa root powder-water purification study*. UNBC Research Project Award (**\$4,355**).

2015 Principal applicant for *Conference Travel Grant*. UNBC Travel Grant (**\$3,000**).

- 2015 Co-applicant, with Dr. Sam Otukol, for *Data collection for sustainable resource use evaluation under climate change monitoring in Africa*. British Department of International Development (DFID) and the Natural Environment Research Council (NERC). (**\$8,000,000; over 4 years**, unsuccessful)
- 2013 Co-applicant, with Drs. Micheal Gilligham, L. Arocena, Mike Rutherford, Keith Egger, Hugues Massicotte and Phillippe Henry, for *Soil Integrity and Revegetation Protocol (part of a larger research program)*. PTPLP. (**\$2,000,000, over 2 years**)
- 2012 Co-applicant, with Dr. Michael Rutherford, for *Reclamation of OJAY pipeline sites in north-eastern British Columbia*. UNBC Research Office. (**\$6,000**).
- 2012 Co-applicant, with Dr. Michael Rutherford, for *Reclamation of OJAY pipeline sites in north-eastern British Columbia*. Shell Canada (Calgary Branch). (**\$220,000; over 3 years**).
- 2011 Co-applicant, with Dr. Michael Rutherford, for *Reclamation of OJAY pipeline sites in north-eastern British Columbia*. Shell Canada (Calgary Branch) (**\$20,000; over 3 years**).
- 2011 Principal investigator for *Clean and safe drinking water to enhance food security in northern Uganda*. Centre for International Governance and Innovation (CIGI) (**\$15,000**).
- 2010 Co-applicant, with Dr. Lito Arocena, for *Food Security in the Philippines*. International Development Research Centre (IDRC) (**\$10,000**).
- 2009 Principal applicant for *Agroforestry demonstration trials, nursery establishment and assessment of the effects of clean water and safe drinking water from NUDF wells on the villagers in Northern Uganda*. UNBC Seed Grant (**\$3,500**).
- 2008 Principal applicant for water quality testing in Northern Uganda. UNBC Ecosystem Science and Management Program (**\$3,000**).
- 2008 Principal applicant for Conference Travel Grant. UNBC Travel Grant. (**\$2,000**).
- 2000 Principal applicant for *Height to diameter ratio in young conifer forests in central interior of British Columbia*. Science Council of BC. (**\$20,000**).
- 1999 Principal applicant for Land reclamation using biosolids and legumes in central interior of British Columbia. Science Council of BC. (**\$18,000**).
- 1999 Co-applicant, with Dr. Peter Jackson and Others, for *Scientific Computing facility for modeling, simulation and visualization*. Canadian Foundation for Innovation. (**\$1,400,000**).
- 1999 Principal applicant for *Height to diameter ratio (HDR)*. Northwood Forest Products Ltd. (**\$20, 000; over 2 years**).
- 1998 Principal applicant for *Height to diameter ratio (HDR)*. Canadian Forest Products Ltd. (Canfor). (**\$38,334; over 3 years**).
- 1998 Principal applicant for *Height to diameter ratio (HDR)*. Fraser Lake Sawmills Ltd. (**\$49,667; over 3 years**).

- 1996 Co-applicant, with Dr. Brad Hawkes for Fire ecology study. McGregor Model Forest Association. (**\$16,667; over 2 years**).
- 1992 Principal applicant for *Sesbania sesban* improved fallow systems in fragile soils. International Development Research Centre (IDRC), Ottawa. (**\$50,000; over 2 years**).
- 1987 Awarded the Faculty of Environmental Design Scholarship (\$5,000), University of Calgary, for two years

AWARDS AND HONOURS

- 2015 Based on my NUDF work, I was selected by the University of New Brunswick as a recipient of a 2015 *Alumni Award of Distinction*. According to UNB, “This award recognizes the significant contributions made by UNB alumni in their local communities and beyond, for which they have been recognized regionally, nationally, or internationally”.
- 2012 I was awarded “*Academic of the Year Award*” by CUFA-BC for doing research that benefits human society. CUFA is Canadian
- 2012 I was featured in the Greenhouse Magazine (*Summer 2012- Issue Number 3, pages 20-21*), published by the University of Alberta. Chris Opio, *Being the Change: Giving the Gift of Life* by Alexandria Eldridge. This is based on my NUDF research and development work in Uganda.
- 2011 The University of Alberta recognized my NUDF by awarding me “*Alumni Award of Excellence*.” The award recognizes specific, recent accomplishments of University of Alberta graduates.
- 2011 Mayor Dan Rogers, on behalf of the Prince George City Council and the people of Prince George, recognized me for my NUDF work by presenting me with a *Special Certificate of Recognition*.
- 2010 I was recognized on CBC Television’s Champions of Change, which celebrates Canada’s top volunteers. I was selected, out of 2000 nominees across Canada, as one of the top ten *Canada’s champions of change who had made “an invaluable contribution to society, serving our community at home, and helping our neighbours abroad.”* I received an Award (\$10,000 and a glass plaque).
- 2009 The paper entitled “Firm size and export experience in relation to export barriers”, which was written by Ms Zhengzhe He and I won the “*Excellent Paper Award*” during the 2nd International Conference on Strategy and Marketing, held in Beijing on December 5-6th, 2009. In this paper, we explored the export barriers that current Canadian forest firms encounter when they export to the Chinese market, as well as the factors that influence their export barriers’ perceptions.
- The 2nd International Conference on Strategy and Marketing was organized by Specialized Committees of Enterprise Strategy and Chinese Association for Development Strategy. This conference focused on management theories, innovations and hot topics in strategy and marketing. **Nearly 100 papers were received.** Through a restrict peer-review selection procedures, 36 papers were published and have been sent to ISI for retrieval by ISSHP. *Our paper was one of the two papers that won an Award of Excellence in the form of Honor Certificate.*
- 2009 Based on my work in providing clean and safe water wells to villages in northern Uganda, I was recognized by *Verge Magazine*, by naming me one of its 14 *Global Heroes for 2009*.

- 2004 Received merit award from UNBC
- 2003 Received merit award from UNBC
- 1994 Awarded the North American Forestry Xi Sigma Pi Certificate for having maintained a high rank in scholarship and personal achievement in forest resources management 1994).

PUBLICATIONS

- Morgan, C.R., Opio, C and Migabo, S. 2020. Chemical composition of Moringa (*Moringa oleifera*) root powder solution and effects of *Moringa* root powder on *E. coli* growth in contaminated water. *South African Journal of Botany*. 129:243-248.
- Oduro Appiah, J., Opio, C and Donnelly, S. 2020. Measuring forest change patterns from oil and gas land use dynamics in northeastern British Columbia, 1975 to 2017. *Environmental Monitoring and Assessment*, 192 (1), 1-18.
- Oduro Appiah, J., Opio, C and Donnelly, S. 2020. Quantifying, comparing, and contrasting forest change pattern from shale gas infrastructure development in the British Columbia's shale gas plays. *International Journal of Sustainable Development & World Ecology*, 27 (2), 114-128.
- Oduro Appiah, J., Opio, C., Venter, O., Donnelly, S., & Sattler, D., (under review). Measuring forest change and forest land use dynamics in northeastern British Columbia: implications for sustainable forest management. *Earth Systems and Environment*.
- Opio, C and Fredj, K. 2018. Boosting forest income to improve food security: A SWOT analysis of tree nursery project in Northern Uganda. *Journal of Architectural and Planning Research*, 35(3):235-243.
- Bergeson, T.L., Opio, C and MacMillan, P.D. 2016. Crop ash filtrate influence on cooking time and sensory preferences for dried black beans (*Phaseolus vulgaris* L.). *African Journal of Food Science* 10(8):132-142. DOI:10.5897/AJFS2016.1456. ISSN 1996-0794. <http://www.academicjournals.org/AJFS>
- Bergeson T.L, Opio, C and Arocena, J.M. 2016. Elemental composition and potential health impacts of *Phaseolus vulgaris* L ash and its filtrate used for cooking in Northern Uganda. *African Journal of Food, Agriculture, Nutrition and Development* 16(4):11351-11366. DOI:10.18697/ajfand.76.16170. ISSN 1684 5374.
- Turner, T., Opio, C and Rutherford, P.M. 2015. Factors affecting plant growth and survival on reclaimed natural gas pipeline Right-of Ways in northeastern British Columbia, Canada. In *Proceedings of the XIV World Forestry Congress*, Durban, South Africa, 7-11 September 2015. <http://www.fao.org/meetings/world-forestry-congress/en/>
- Opio, C. 2015. Empowering women to boost forest income that improves food security. In *Proceedings of the XIV World Forestry Congress*, Durban, South Africa, 7-11 September 2015. <http://www.fao.org/meetings/world-forestry-congress/en/>
- Serra, R., C. Opio, and D.P. Khasa. 2014. Sheep vegetation management for controlling competing vegetation in young conifer plantations in the central interior of British Columbia, Canada. *Agroforest Syst* 88:569-578.
- Opio, C. 2012. Building effective drinking water management policies in rural Africa: Lessons from Northern Uganda. The CIGI-Africa Discussion Paper Series No. 6. A peer-reviewed research technical paper, based on field work, published by the *African Initiative* and the *Centre for international Governance Innovation (CIGI)*.

<http://www.cigionline.org/series/africa-initiative-discussion-paper-series>

Opio, C. 2012. Building effective drinking water management policies in rural Africa: Lessons from Northern Uganda. The CIGI-Africa Discussion Paper Series No. 6. A peer-reviewed policy paper, based on field work, published by the *African Initiative* and the *Centre for international Governance Innovation (CIGI)*.
<http://www.cigionline.org/publications/>

Opio, C. 2010. Biological and physical characteristics of drinking water from wells in Kamdini Parish, Northern Uganda. Natural Resources and Environmental Studies Institute Research Extension Note No.6, University of Northern British Columbia, Prince George, BC., Canada. This peer-reviewed paper can be downloaded without charge from http://www.unbc.ca/canres/research_extension_notes.html

Cho, D.I., T. Ogwang, and C. Opio. 2010. Simplifying the water poverty index. *Social Indicators Research* 97:257-267.

He, Zheng Zhe., and C. Opio. 2010. Farm size and export experience in relation to export barriers. *In the Proceedings of 2nd International Conference on Strategy and Marketing*, December 5-6th, 2009, Beijing, China. Specialized Committee of Enterprise Strategy of Chinese Association for Development Strategy. pp. 18-21.

Opio, C. K. Fredj, and B. Wang. 2009. Profitability of manual brushing in young lodgepole pine plantations. *BC Journal of Ecosystems and Management* 10(1):15-21.
www.forrex.org/publications/jem/ISS50/vol10_no1_art3.pdf

Cho, D.I., T. Ogwang, and C. Opio. 2008. Conceptualization of principle variable selection for computing the water poverty index. Proceedings of the 35th ASAC Annual Conference, Social Responsibility Division, Conference Proceedings, Halifax, Nova Scotia, May 2008. Vol. 29 (29):159-174.

Sammy, J. and Opio, C. 2005. Problems and prospects for conservation and indigenous community development in rural Botswana. *Development Southern Africa*, 22 (1): 67-85.

Rothenbach, C. and Opio, C. 2005. Sapsuckers usurp a nuthatch nest. *Wilson Bulletin*, 117 (1): 101-103.

Opio, C., Van Diest, K., and Jacob, N. 2003. Intra-seasonal changes in height to diameter ratios for lodgepole pine in the central interior of British Columbia. *Western Journal Applied Forestry*, 18 (1): 52-59.

Arocena, J.M., and Opio, C. 2003. Prescribed fire-induced changes in properties of sub-boreal forest soils. *Geoderma*, 113: 1-6.

Lepine, F.C; **Opio, C;** and Ayers, D. 2003. An analysis of escaped fires from broadcast burning in the Prince George Forest Region of British Columbia. *BC Journal of Ecosystems and Management*, 3 (2): 79-87; also online at <http://www.forrex.org/jem/2003/vol3/no2/art1.pdf>

Opio, C., Jacob, N., and Khasa, D.P. 2001. Factors affecting a sheep vegetation management system in British Columbia, Canada. *Agroforestry Systems*, 53: 305 -312.

Opio, C. 2001. Biological and social feasibility of *Sesbania* fallow practice in small holder agricultural farms in developing countries: a Zambian case study. *Environmental Management*, 27 (1): 59 -74.

Opio, C., Jacob, N., and Coopersmith, D. 2000. Height to diameter ratio as a competition index for young conifer plantations in northern British Columbia, Canada. *Forest Ecology and Management*, 137 (1-3): 245-252.

Opio, C. 1999. Forest management issues in a wildland-urban interface: The case of West Bragg Creek Timber Licence in Alberta. *The Forestry Chronicle*, 75 (1): 129-139.

Opio, C., and Cho, D. 1999. Operations research in forest fire management and its potential applications in British Columbia. Pages 51-60 in A. Redlack (editor), Proceedings of the Administrative Sciences Association of Canada (ASAC, 20 (2): 51-60). The 27th Annual ASAC Conference, June 12-15, 1999, Saint John, New Brunswick, Canada.

Vasbinder, W., Opio, C., and Hawkes, B.C. 1997. Influence of topography upon the historical fire regime of the SBSvk and ESSFwk2/wc3 Biogeoclimatic subzones, British Columbia. Abstract in: Jull, M., D. Coxson, S. Stevenson, D. Lousier and M. Walters (eds.). Ecosystem Dynamics and Silvicultural Systems in Interior Wet-belt ESSF and ICH Forests Workshop Proceedings, June 10 -12, 1997. UNBC Press.

Vasbinder, W., Opio, C., Hawkes, B.C., and DeLong, C. 1996. Fire in the SBS and ESSF zones of British Columbia. Interim Report for McGregor Model Forest Association, Prince George, BC, Canada. 26 pp. ISBN 1-896857-06-X.

Hogan, R., Cole, R., Needham, C., MacPherson, D., Opio, C., Thacker, C., Ebbs, K., Vanderwel, D., Casement, B., Grundberg, B, Olson, N., and Bank, G. 1995. Training needs assessment profile for woodlot management extension personnel. Edited by C. Howard, C. Kardos, C. Esau, and A. Doolaege. Sponsored by Canada/Alberta Agreement in Forestry & Agriculture Canada: PFRA-Prairie Farm Rehabilitation Administration. November 24, 1994. Olds College, Alberta, Canada. 2 pp.

Opio, C., Apedaile, L.P., and Murphy, P.J. 1994. Effects of *Sesbania sesban* improved fallow on an ox-hoe farming system. Pages 89-92 in R.C. Shultz and J. P. Colletti (eds.), Opportunities for Agroforestry in Temperate Zone Worldwide. Proc. of the Third North American Agroforestry Conference. August 15-18, 1993. Iowa State University, Ames, Iowa, USA.

Hunter, B.W., Opio, C., and Spillos, L. 1994. Understorey preservation and retention in the ESSFwk2 subzone of the Dawson Creek Forest. Technical Report prepared for the BC Ministry of Forests, Dawson Creek Forest District, BC. 49 pp.

Opio, C. 1991. Forest management: environmental issues and management options. University of Calgary, Alberta.

Opio, C., and Murphy, P.J. 1990. Recent advances in agroforestry research and development: a literature review. Department of Renewable Resources, University of Alberta. Edmonton, Alberta, Canada. 28 pp.

Opio, C. 1990. Tackling global development issues: commentary. *Environment Views*, 13 (3): 18-19.

BOOK CHAPTERS

Opio, C. 2012. Where there's a well there's a way. A Canadian helps Africans tap into better health. Chapter 10, Global Citizenship, 214-218. Kathy Block and Hannah Friesen (editors), *Creating Meaning: Advanced Reading and Working for the Canadian Classroom*. Second Edition. Oxford University Press Canada. 246p.

Opio, C. 2012. Giving the Gift of Life: Opio, Being the Change. Pages 20-21. Alexandria Eldridge (editor). *Green House*. 27p.

CONFERENCES (*Organizer, Keynote Speaker, Presenter, Invited*)

Oduro Appiah, J.; Opio, C., Donnelly, S. 2019. Between time points and locations: assessing forest change from shale gas infrastructure development in northeastern British Columbia, 1975 to 2017. American Association of Geographers (AAG) annual conference. April 3-7, 2019. Washington DC, USA. (Presenter)

Oduro Appiah, J.; Opio, C. Venter, O., Donnelly, S., Sattler, S. 2018. An assessment of the forest landscape in the shale oil and gas region of northeastern British Columbia, 1975-2015. American Association of Geographers (AAG) annual conference. April 10-14, 2018. New Orleans, LA, USA (Presenter)

Opio, C. 2015. Presented two papers on (a) women, forest and food security; and (b) reclamation of pipeline Right-of-Ways in northeastern BC at XIV World Forestry Congress, Durban, South Africa, 7-11 September 2015.

Opio, C. 2015. Participated, as a roundtable participant, in the BC Council for International Cooperation's "Community Roundtable on the role of British Columbians being part of a collective international response to the current Ebola epidemic or a similar disaster in the future", January 20, 2015.

Opio, C. 2015. *Invited* to participate in the International Scientific Conference "*Forestry: Bridge to the Future*", 6-9 May 2015, Sofia, Bulgaria.

Opio, C. 2014. *Invited* presentation at Oxford Round Table, Harris Manchester College in the University of Oxford, Oxford, England; 3-7 August, 2014.

Sara, R., Opio, C., Khasa D.P, and Garcia, O. 2014. Profitability of sheep grazing in young conifer plantations of British Columbia, Canada. European Agroforestry Federation (EURAF), 2nd European Agroforestry Conference, 04-06 June 2014, Cottbus, Germany. Abstract (pages 265-266) and Poster. (Presenter)

Opio, C. 2014. *Invited* presentation at Water Works: Exploring the Value of Water at home and Abroad, May 7-9, 2014, Dawson Creek, British Columbia. (*Keynote Speaker*)

Sara, R., Opio, C., Khasa D.P, and Garcia, O. 2014. Profitability of sheep grazing in young conifer plantations of British Columbia, Canada. European Agroforestry Federation (EURAF), 2nd European Agroforestry Conference, 04-06 June 2014, Cottbus, Germany. Abstract (pages 265-266) and Poster. (Presenter)

R. Serra, C. Opio, D. Khasa. 2013. Sheep vegetation management in young conifer plantations of British Columbia. The 13th North American Agroforestry Conference, June 19-21, 2013, University of Prince Edward Island, Charlottetown, PEI, Canada. Abstract. (Presenter)

Opio, C. 2012. *Invited* to the 2nd APEDIA Curriculum Workshop on "*Development of Professionally Oriented Postgraduate Module in the Field of Sustainable Land Use*", August 10-12, 2012, Makerere University, Kampala, Uganda.

Turner, T., Opio, C. and Rutherford, M. 2012. Factors affecting plant survival and growth on natural gas transmission lines in northeastern British Columbia. Presentation at Petroleum Technology Alliance of Canada (PTAC) 2012 Resource Access and Ecological Issues Forum, Calgary Petroleum Club. November 26, 2012. (Presenter)

Opio, C. 2012. *Invited* Agroforestry and Human Health Presentation at the University of Laval, Quebec. December 2-5, 2012.

Opio, C. 2012. *Invited* to make a presentation on “Uganda Natural Resources” at the Northern Silviculture Committee Workshop, Prince George.

Opio, C. 2012. *I participated in a workshop on “Building Agroforestry Capacity in Northern British Columbia in Prince George, BC.* This was organized by Resources North Association (RNA), with support from Natural Resources Canada, Forest Communities program, Agroforestry Industry Development Initiative and Omineca Beetle Action Coalition. March 29, 2012.

Opio, C. 2008. Attended and presented, with Cho. D.I., and T. Ogwang, a paper on “Conceptualization of principle variable selection for computing the water poverty index, at the 35th ASAC Annual Conference, Social Responsibility Division, Halifax, Nova Scotia, May 2008.

Opio, C. 2003. The Management Committee of Sheep Vegetation Management in British Columbia *invited* me to talk, at their annual general meeting (Prince George Civic Centre, December 16-17, 2003) about our agroforestry paper “Factors affecting a sheep vegetation management system in British Columbia, Canada” by C. Opio, N. Jacob and D. Khasa. *Agroforestry Systems* 53: 305-312, 2001. There has generated a lot of interest in British Columbia.

Opio, C. 2003. Introduction to Agroforestry. University of Northern British Columbia, May 15-14. 18p. Workshop. (Presenter)

Jacob, N., and Opio, C. 2002. The use of height to diameter ratios in silvicultural operations: from science to practice. Workshop Presentation in Fraser Lake, British Columbia, September 23, 2002 (Report, 34p). (Presenter)

Arocena, J.M., and Opio, C. 2002. Prescribed burn-induced changes in soil properties. Canadian Soil Science Society (CSSS) meeting in Banff, February 20, 2002 (Abstract). (Presenter)

Jacob, N., and Opio, C. 2001. Height to diameter ratio as a competition index for young conifer plantations in Vanderhoof and Morice Forest Districts, Northern British Columbia. Workshop presentation to Vanderhoof District Silviculture Committee, Prince George, BC, July 12, 2001 (Report 75p). (Presenter)

Opio, C. 2001. *Invited* to speak on “Height to diameter ratio concept” to Vanderhoof Forest District Silviculturists, Prince George (July 12, 2001)

Opio, C. 2000. *Invited* to speak at “Research and Development, *The Global Picture: Lessons for Rural Communities*” at The Fields and Forests 2000 Conference, Cumberland, British Columbia, October 13 and 14, 2000.

Opio, C. 1998. *Invited* member of the Professional Review Panel of “Bonanza Face Ecosystem Design” plan developed by Slocan Forest Products Limited, Nelson, British Columbia. Task: *Critical review of ecosystem design planning process and procedure; and panel discussion and critical review of “Bonanza Face Ecosystem Design” plan, with emphasis on ecological analysis, the opportunities and constraints and the overall design; and providing a 5-page written report and presentation.*

Keller-Thompson, L., Opio, C., and Arocena, J.M. 1998. Forest champions search for the Holy Grail: restoring productivity on forest landings in British Columbia. International Conference of the Society for Ecological Restoration. September 28-30, 1998. Austin, Texas, USA. (Abstract). (Presenter)

Vasbinder, W., Hawkes, B.C., and Opio, C. 1997. Fire regimes in the cold and wet mountainous ecosystems of north-eastern British Columbia. The 2nd International Wildland Fire Conference. May 25-30, 1997. Vancouver, BC, Canada. (Poster) (Presenter)

Opio, C. 1997. *Invited* to speak on Integrating agroforestry into farming systems: a Canadian perspective. Seminar presentation at the Annual General Meeting of the Association of BC Agrologists. January 21, 1997. Ramada Inn, Prince George, BC, Canada. (*Invited*)

Opio, C. 1995. *Facilitator* for the “Joint FAO/ECE/ILO Committee on Forest Technology Management and Training Seminar on Multiple Use Forestry, Sub-group Theme 5: the Relationship of Forest Practices to Policy and Science”, Prince George, BC. (September 9-15, 1995).

Apedaile, L.P., Scillizi, S., Opio, C., and Murphy, J.P. 1994. Agroforestry and induced institutional innovation. Oxford University, United Kingdom. (*Invited Presentation*)

SERVICE

ACADEMIC AND PROFESSIONAL (Service to the *University of Northern British Columbia*)

- | | |
|--------------|--|
| 2020 | <i>Guest Lecture</i> , by invitation, on UNBC Goba U: How to succeed and thrive as an International Student |
| 2018 | <i>Organizer, facilitator and presenter</i> , Forestry Workshops (field and greenhouse activities) for 22 students from the Rotary Club: An Academic Tour”, Saturday, May 26, 2018. |
| 2017-2018 | <i>Member</i> , of the search committee for Director, International Education |
| 2018-Present | <i>Member</i> , UNBC Advisory Committee, International Education |
| 2017 | <i>Lecture</i> , by invitation, on the “Life of an International Student in Canada |
| 2015-2017 | ESM/ CSAM <i>Representative</i> on Undergraduate Research Experience Awards Adjudication Committee |
| 2015-2017 | ESM/CSAM <i>Representative</i> on Graduate Research Project Awards Adjudication Committee |
| 2016 | <i>Organizer, facilitator and presenter</i> for SD91 Students: An Academic Tour”, May 24-26, 2016. |
| 2015-Present | <i>Member</i> , MA (International Studies Program, CASHS) Graduate Council Adjudication Committee |
| 2015 | <i>Organizer, facilitator and presenter</i> , “2015 Natural Resources Post-Secondary Program Extravaganza CNC & UNBC”. Grade 10-12 students from SD57, SD28 and SD91. December 15 and 16, 2015. |
| 2014 | <i>Member</i> , Hiring Committee, UNBC Partnership and Innovation Officer |
| 2013 | <i>Member</i> , CSAM College Promotion and Tenure Committee |
| 2013 | <i>Organized, hosted and made a presentation</i> on UNBC Natural Resources Management Program, and NUDF to, and a tour by the First Nations Youth, Geoterra Integrated Resource Systems Program, Fort Nelson, BC at UNBC |

2012	<i>Member</i> , International Studies (INTS) MA Graduate Council
2011	<i>Member</i> , Forest Ecology and Management Curriculum committee
2011	<i>Member</i> , Forest Operations Subcommittee (2012)
2011	UNBC <i>Representative</i> to CNC (College of New Caledonia, Prince George, BC) Research Forest Society
2010	<i>Member</i> , Collaborative Research Award for the Northern BC Business and Technology Awards Selection Committee
2008-2009	<i>Member</i> , Appointments Selection Committees for UNBC Business and Economics Programs
2009	<i>Rotating member</i> , UNBC College Promotions and Tenure Committee (CPTC)
2010	UNBC <i>Representative</i> to the International Linkages Forum at City Hall, Prince George
2006-2007	UNBC <i>Senator</i> , representing CSAM
2004-2005	<i>Member</i> , UNBC Promotions and Tenure Committee (UPTC)
2004	<i>Rotating member</i> , CSAM Promotion and Tenure Committee (CPTC)
2003	<i>External member</i> , UNBC Economics Program's Appointments Selection Committee
2003	UNBC <i>member</i> of the Canadian Forest Service's Appointment Selection Committee
2001-2002	Forestry Program's representative to the UNBC Senate sub-committee on Student Exchange Programs
2000-2001	Forestry Program's <i>representative</i> to the UNBC Undergraduate Committee
2000-2001	<i>Member</i> , of the hiring committee for the Geography Program's position (2000-2001).
2001	<i>Member</i> , hiring committee for an Environmental Studies Programs' position (January-February 2001).
2000	<i>Member</i> , of the selection team for the Forestry Program's Silviculture position
2000	Acting Chair, UNBC Forestry Program (August 17 and 18, 2000).
1998-Present	<i>Chair</i> , Fire Management Accreditation Sub-committee of ABCFP Association of British Columbia Forest Professionals (ABCFP)
1998	<i>Member</i> , of the hiring (selection) committee for the Business Administration program
1998	<i>Member</i> , of the selection team for the Forestry program's Forest Operations position
1998	<i>Faculty representative</i> on "Experiential Learning and Teamwork Groups" during the UNBC orientation Week for the new students (1998).

- 1998 *Highly valued contributor* to the preparation of Forestry Endowed Chairs in (1) Mixedwood Ecology and Management and (2) Forest Growth and Yield Program
- 1996-1998 *Member, at Large*, UNBC Faculty Association
- 1996-1998 *Member*, McGregor Model Forest Ecological Processes Team
- 1995-1998 *UNBC representative* on the Silviculture Institute of British Columbia (SIBC) Board of Directors
- 1997 *Faculty representative* on “Experiential Learning and Teamwork Groups” during the UNBC orientation Week for the new students
- 1997 *Acting Chair*, UNBC Forestry Program (June 16-20, 1997).
- 1996 *Acting Chair*, UNBC Forestry Program (June 21-July 5, and August 19-23, 1996).
- 1996 *Speaker* in the “People, Places and Events”, a weekly luncheon seminar sponsored by the Geography Program, UNBC (1996).
- 1995 *Highly valued contributor* to the preparation of NRES Integrated Field Camp
- 1995 *Assisted* with the UNBC’s outreach program to the community; assisted with the visit by high school students from northern BC. The visit was co-sponsored by Northern Forest Products Association.
- 1995 *Assisted* with the hosting of Forestry students from Northwest Community College (1995).
- 1995 *Organized and hosted* International Forestry Seminar at UNBC.
- 1995 *Assisted* with the visit by the students from the Eugene Joseph School from the Tl’ant’en Nation
- 1995 *NRES Faculty representative* in the UNBC Research and Development Park committee
- 1995 *Represented* the University of Calgary, on behalf of President Dr. Murray Fraser (now deceased), at the Installation of UNBC President, Dr. Charles Jago (October 19, 1995).

COMMUNITY

- 2017-2018 Organized and facilitated workshops on sanitation, managing water wells, and agriculture, with NUDF stakeholders in northern Uganda
- Explored the possibility of establishing moringa field trials, involving Women’s Tree Nursery Group (supported by NUDF)
- Conducted SWOT analysis study of NUDF water wells in northern Uganda in the summer of
- I was asked to appear, as an Expert Witness, before the Senate Standing Committee

on Agriculture and Forestry, Ottawa; but never appeared before the committee due to other commitments.

I gave a seminar/workshop on Science Fair to the students and parents of Immaculate Conception School.

- 2010 I was invited and made two presentations about “Leadership” to BC High School Student Leadership Groups at the October 2010 BC Student Conference, Prince George.
- 2009 I participated as a Science Fair judge at Immaculate Conception School (2009).
- 2008 Assisted in developing a vision (planning) document for St. Mary’s Catholic School, Prince George (2008).
- 2007-Present Built 100 water wells, renovated a Primary School and supported numerous development projects in Northern Uganda.
- 2006-2007 Team Leader in developing a Vision Document for the Immaculate Conception School, Prince George, British Columbia
- 2005 I worked with Immaculate Conception School, judging Grade 4-7 science project competitions.
- 2004 From March to September 2004, I conducted, analyzed and presented ICS comprehensive planning survey study.
- 2003 Interviewed on CBC Radio, and Prince George Television (PGTV) on fire management issues .
- 2003 Vice Chair of the Parent Support Group (PSG) until 2006; and also the Immaculate Conception School Council Liaison Officer, Prince George, British Columbia
- 2003 I had several talks/meetings with the Deputy Permanent Secretary, Ministry of Agriculture, Forestry and Fisheries; and the Chief Forest Officer (and his senior staff), St. Lucia. We discussed key forestry/land use issues affecting St. Lucia’s development. I offered advice and suggested some management options for dealing with these issues. Similarly, I visited the Commonwealth of Dominica and learned about forestry/land use issues in the country. I also met the Prime Minister of the Country. I spent about 1 month in these West Indies’ countries (September 27- October 18, 2002). This was done during my sabbatical leave (from 1 July 2002 to 30 June 2003).
- 2001 Gave a talk on “Height to diameter ratio concept” to Vanderhoof Forest District silviculturists, Prince George
- 1999 Participated in the “Education Outreach”, a program organized by the Division of International Development, International Centre, University of Calgary. The program was about environmental education, ethics, and management (1989).
- 1997 Invited to the meeting with Bugbusters Pest Management Inc. Prince George

- 1996 Attended and provided inputs to the presentation on “Harvesting Training Simulators” by Dr. Paul Freedman from CRIM, held at Free Spirit Ventures, Prince George (November 28, 1997).
- 1996 UNBC volunteer, Forest Expo (Prince George)
- 1995 UNBC contact person for proposed “Yellowhead Demonstration Forest in Prince George, BC.
- 1995-Present Provides technical expertise to the public on forestry management- and agroforestry-related problems through e-mails and phone calls (1995-present).
- 1995 Provided professional advice to Hollins Industries International Inc., on matters relating to the “Ecological and Economic Feasibility of Hi-Skid Self-Loading Skidder/Transporter,” 100 Mile House, BC.

REVIEWER (*Journals, Grants, Proposals*)

Reviewer, SSHRC Insight Grant application (2016).

Reviewer, Spanish Journal of Rural Development (December 2009-Present).

Reviewer, Canadian Journal of Soil Science (2010).

Reviewer, for the research proposal on soil and fire from The William Paterson University of New Jersey (USA) in 2009.

Reviewer, for the Canadian Journal of Botany.

Reviewer, European Journal of Soil Science (2005).

Reviewer, Environmental Management (2004-2014).

Reviewer, Canadian Journal of Botany (2003).

Reviewer, Journal of Crop Production (2003).

Reviewer, United States Department of Agriculture (USDA), Forest Service (2003).

Reviewer, Northern Arizona State (Flagstaff, Arizona, USA) University’s Proposal entitled, “Criteria, Indicators and Zoning for Sustainable Management” (2003).

Reviewer, Canadian Journal of Forest Research (2002)

PROFESSIONAL DEVELOPMENT/CONTINUING EDUCATION ACTIVITIES

- 2016 Attended one UNBC Teaching workshop on UDL (2016)
- 201-2014 Attended two Teaching Workshops
- 2010 Attended UNBC Teaching Workshop
- 2010 Attended a BCCIC workshop in Vancouver (2010)

PROFESSIONAL ASSOCIATIONS

Member, The Water Network, Switzerland (1999-Present)

Appointed as *Adjunct Professor*, Faculty of Forestry, Geography and Geomatics, University of Laval (December 19, 2011-Present).

Scientific Committee Member (Associate Editor) of Spanish Journal of Rural Development (2009-Present).

Member, Association for Tropical Biology and Conservation (just enrolled; 2005).

Member, of Administrative Sciences Association of Canada (1999-2000).

Member, of Society for Ecological Restoration (1998-2000).

Member, Canadian Institute of Forestry (1995-1999).

SABBATICAL AND PARENTAL LEAVES

July 1, 2017 to December 31, 2017 Sabbatical Leave

January 1, 2014 to June 30, 2014 Sabbatical Leave

July 1, 2009 to December 31, 2009 Sabbatical Leave

July 1, 2002 to June 30, 2003 Sabbatical Leave

January to April, 1999 Parental Leave

July 1, 2002 to June 30, 2003 Sabbatical Leave

