

ORCID: [0009-0000-2155-8749](https://orcid.org/0009-0000-2155-8749)

Email: edoolittle@firstnationsuniversity.ca

Website: www.fnuniv.ca/academic/faculty/dr-edward-doolittle

Associate Professor of Mathematics

Department of Indigenous Knowledges and Science

First Nations University of Canada

1 First Nations Way, Regina, Saskatchewan, S4S7K2, Canada

Current Professional Appointments

- 2024–on **Associate Dean, Research and Graduate Studies**, First Nations University of Canada, www.fnuniv.ca
- 2024–on **Co-chair (Indigenous Research)**, Research Ethics Board, University of Regina, www.uregina.ca
- 2014–on **Associate Professor of Mathematics**, First Nations University of Canada, www.fnuniv.ca

Previous Professional Appointments

- 2011–2014 **Associate Professor of Mathematics and Department Head**, First Nations University of Canada, www.fnuniv.ca
- 2009–2011 **Associate Professor of Mathematics**, First Nations University of Canada, www.fnuniv.ca
- 2008–2009 **Assistant Professor of Mathematics**, First Nations University of Canada, www.fnuniv.ca
- 2005–2008 **Assistant Professor of Mathematics**, University of Regina, www.uregina.ca
- 2002–2005 **Assistant Professor of Mathematics and Department Head**, First Nations University of Canada, www.fnuniv.ca
- 2001–2002 **Assistant Professor of Mathematics**, Saskatchewan Indian Federated College

Community Service

- 2023–on **Chair**, Mathematics and Reconciliation Committee, Canadian Mathematical Society, cms.math.ca
- 2022–on **Board Member**, Board of Equity, Diversity and Inclusion, Fields Institute for Research in Mathematical Sciences, www.fields.utoronto.ca
- 2021–on **Committee Member**, Indigenous Engagement Committee, Pacific Institute for the Mathematical Sciences, www.pims.math.ca
- 2020–on **Board Member**, Board of Equity, Diversity, and Inclusion, Banff International Research Station, www.birs.ca
- 2020–2023 **Committee Member**, Mathematics and Reconciliation Committee, Canadian Mathematical Society, cms.math.ca
- 2019–on **Judge**, National Judging Team, Youth Science Canada, youthscience.ca
- 2018–on **Trustee**, Trust Fund Committee, University of Regina Faculty Association, www.urfa.ca

Education

- 1992–1997 **PhD in Mathematics**, University of Toronto, www.utoronto.ca
Thesis: A Parametrix for Stable Step Two Hypoelliptic Partial Differential Operators
Advisor: Professor Peter Greiner
- 1990–1992 **MSc in Mathematics**, University of Toronto, www.utoronto.ca
- 1985–1990 **BSc in Mathematics**, University of Toronto, www.utoronto.ca

Indian Status

I am a **Status Indian**, member of the **Lower Mohawk** band of **Six Nations**.

Fellowships and Awards

- 2024 **Fellow** of the Canadian Mathematical Society cms.math.ca/awards/fellows-of-the-cms/
- 2023 **Adrien Pouliot Award**, Canadian Mathematical Society cms.math.ca/awards/adrien-pouliot-award/
- 1992 **Governor General's Gold Medal** www.gg.ca/en/honours/recipients/116-5733

Grants

- 2025 **The Math Bundle.**
[BIRS Workshop 25w5472](#) Doolittle, E. (PI); Glanfield, F; McKenna, B.
- 2024–2030 **Critical Approaches to Indigenous Relationality.**
[SSHRC Partnership Grant](#). Jobin, S (PI); Doolittle, E.; et. al.
- 2024–2026 **The Mathematics of Indigenous Games.**
First Nations University Board of Governors Grant. Doolittle, E. (PI); Fallat, S; Burns, L
- 2023–2028 **Mathematics Education for STEM as Place.**
[SSHRC Insight Grant](#). Nicol, C (PI); Doolittle, E.; Glanfield, F; Thom, J.
- 2022–2027 **Banff International Research Station.**
[NSERC Discovery Institutes Support Grants](#).
Pramanik, M (PI); Behjat, L; Doolittle, E.; Frappier, M; Husain, V; Lewis, M; Sun, L.
Award: www.nserc-crsng.gc.ca/ase-oro/Details-Detaillies_eng.asp?id=767960
Award: www.nserc-crsng.gc.ca/ase-oro/Details-Detaillies_eng.asp?id=758456
- 2013 **Understanding Relationships between Aboriginal Knowledge Systems, Wisdom Traditions, and Mathematics: Research Possibilities.**
[BIRS Workshop 13w5120](#). Doolittle, E.; Glanfield, F.
- 2009–2011 **Creating a Research Network to Develop an Understanding of Relationships between Aboriginal Knowledge Systems, Wisdom Traditions, and Mathematics Education**
SSHRC Aboriginal Research Development Grant. Glanfield, F (PI); Donald, D; Doolittle, E.; Sterenberg G.
Award: www.outil.ost.uqam.ca/crsh/Detail.aspx?Cle=78132&Langue=2

Supervision

- 2024–on Layne Burns, MSc in Mathematics, University of Regina (**Supervisor**)
- 2023–2024 Layne Burns, NSERC Undergraduate Student Research Award, First Nations University of Canada (**Supervisor**)
- 2023–on John Porrit, MA in Mathematics Education, University of Regina (**Co-supervisor**)
- 2023–on Ehdad Matia, PhD in Mathematics Education, University of Regina (**Committee Member**)
- 2022–2023 Shana Graham, Postdoctoral Fellowship, University of Regina (**Co-supervisor**)
- 2020–on Tannen Acoose, PhD in Mathematics, University of Regina (**Committee Member**)
- 2018 Vanessa Braun, MA in Mathematics Education, University of Regina (**Committee Member**)
- 2017–2020 Shana Graham, PhD in Mathematics Education, University of Regina (**Committee Member**)
- 2012–2017 Tannen Acoose, MSc in Mathematics, University of Regina (**Co-supervisor**)
- 2003–2005 Meseret Bowden, MSc in Mathematics, University of Regina (**Supervisor**)

Papers in Refereed Journals

- 2023 Nicol, C., Thom, J. S., Doolittle, E., Glanfield, F., & Ghostkeeper, E. (2023) Mathematics education for STEM as place. ZDM – Mathematics Education, 55(7), 1231–1242. doi.org/10.1007/s11858-023-01498-z
- 2022 Adusei, K. K., Ng, K. T. W., Karimi, N., Mahmud, T. S., & Doolittle, E. (2022). Modeling of municipal waste disposal behaviors related to meteorological seasons using recurrent neural network LSTM models. Ecological Informatics, 72, 101925. doi.org/10.1016/j.ecoinf.2022.101925

- 2020 Leung, F.-S., Radzimski, V., & Doolittle, E. (2020). Reimagining Authentic Mathematical Tasks for Non-STEM Majors. *Canadian Journal of Science, Mathematics and Technology Education*, 20(2), 205–217. doi.org/10.1007/s42330-020-00084-9
- 2017 Miller, A. M., & Doolittle, E. (2017). RaráMuri Bird Knowledge and Environmental Change in the Sierra Tarahumara, Chihuahua, Mexico. *Journal of Ethnobiology*, 37(4), 663–681. doi.org/10.2993/0278-0771-37.4.663
- 2010 Kajander, A., Mason, R., Taylor, P., Doolittle, E., Boland, T., Jarvis, D., & Maciejewski, W. (2010). Multiple Visions of Teachers' understandings of Mathematics. *For the Learning of Mathematics*, 30(3), 50–56. www.jstor.org/stable/41319540
- 2007 Doolittle, E., & Glanfield, F. (2007). Balancing equations and culture: Indigenous educators reflect on mathematics education. *For the Learning of Mathematics*, 27(3), 27–30. www.jstor.org/stable/40248584
- 2006 Berg, L. C., Longman, S., Hepting, D., & Doolittle, E. (2006). Respectful actions in research: Aboriginal adolescents speaking their future. *DELTA KAPPA GAMMA BULLETIN*, 72(3), 23–29.
- 2000 Ferrando, S. E., Doolittle, E., Bernal, A. J., & Bernal, L. J. (2000). Probabilistic matching pursuit with Gabor dictionaries. *Signal Processing*, 80(10), 2099–2120. [doi.org/10.1016/S0165-1684\(00\)00071-2](https://doi.org/10.1016/S0165-1684(00)00071-2)

Book Chapters

- future Doolittle, E., Graham, S., & Hughes, A. (2025). Division with remainder: Indigenous perspectives.
- future Doolittle, E., & Hughes, A. (2025). Perhaps we didn't need a bridge: In dialogue with Indigenous mathematics. In *Decolonizing Western-Indigenous Dialogues: Interwoven Epistemologies for Multiple Modernities*. Bloomsbury Academic.
- 2018 Doolittle, E. (2018). Off the Grid. In S. Gerofsky (Ed.), *Contemporary Environmental and Mathematics Education Modelling Using New Geometric Approaches* (pp. 101–121). Springer International Publishing AG. doi.org/10.1007/978-3-319-72523-9_7
- 2018 Doolittle, E. (2018). Foreword. In A. Kajander, J. Holm, & E. J. Chernoff (Eds.), *Teaching and Learning Secondary School Mathematics Canadian Perspectives in an International Context* (1st ed. 2018, pp. v–xi). Springer International Publishing. doi.org/10.1007/978-3-319-92390-1

Articles in Periodicals

- 2021 Doolittle, E. (2021, January). Explorations in Indigenous Mathematics: The Starblanket Design. *Crux Mathematicorum*, 47(1), 18–24. cms.math.ca/publications/crux/issue/?volume=47&issue=1
- 2021 Doolittle, E. (2021, December). Explorations in Indigenous Mathematics: Drum Lacing. *Crux Mathematicorum*, 47(10), 481–486. cms.math.ca/publications/crux/issue/?volume=47&issue=10
- 2020 Doolittle, E. (2020, March). Mathematics and Reconciliation. *CMS Notes*, 52(2), 2–5. notes.math.ca/en/article/mathematics-and-reconciliation/
- 2019 Barr, D., Desaulniers, S., Doolittle, E., & Jungic, V. (2019, April). Indigenization and Reconciliation through University Mathematics: Why, When and How? *CMS Notes*, 51(2), 9–11. notes.math.ca/archives/Notesv51n2.pdf

Conference Proceedings

- future Doolittle, E. (2024). “Mathematics as a Spiritual Being”. Invited talk in the Proceedings of the Fifteenth International Conference on Mathematics Education (ICME-15)
- 2021 Staats, S., Ugboajah, I., Chronaki, A., Doolittle, E., & Sircar, S. (2021). “There is no America without inequality”: Imagining social justice writing in a calculus class. In D. Kolloosche (Ed.), *Exploring new ways to connect: Proceedings of the Eleventh International Mathematics Education and Society Conference* (Vol. 1, pp. 260–263). Tredition. doi.org/10.5281/zenodo.5393187
- 2010 Doolittle, E., Lunney Borden, L., & Wiseman, D. (2011, May). Can We Be Thankful for Mathematics? Mathematical Thinking and Aboriginal Peoples. *Proceedings of the 2010 Annual Meeting of the Canadian Mathematics Education Study Group = Actes de La Rencontre Annuelle 2010 Du Groupe Canadien d'Etude En Didactique Des Mathematiques* (34th, Burnaby, British Columbia, Canada, May 21–25, 2010). www.cmesg.org/wp-content/uploads/2015/01/CMESG2010.pdf

- 2006 Doolittle, E. (2007, May). Mathematics as Medicine. Proceedings of the 2006 Annual Meeting of the Canadian Mathematics Education Study Group = Actes de La Rencontre Annuelle 2006 Du Groupe Canadien d'Etude En Didactique Des Mathematiques (30th, Calgary, Alberta, Canada, Jun 3-7, 2006). www.cmesg.org/wp-content/uploads/2015/01/CMESG2006.pdf

Reports

- 2000 Doolittle, E. *Report on the Creation of an Aboriginal Studies Course at Queen's University*

Problem Solutions

- 2006 Doolittle, E. (2006a). Solution to Problem 3026. *Crux Mathematicorum*, 32(3), 184-185.
Doolittle, E. (2006b). Solution to Problem 3028. *Crux Mathematicorum*, 32(3), 186-187.
Doolittle, E. (2006c). Solution to Problem 3029. *Crux Mathematicorum*, 32(3), 187-188.
- 2006 Doolittle, E. (2006d). Solution to Problem 3080. *Crux Mathematicorum*, 32(7), 473-475.
- 1988 Doolittle, E. (1988a). Solution to Problem 1985.305.8. *Crux Mathematicorum*, 14(2), 42-43.
Doolittle, E. (1988b). Solution to Problem 1985.305.10. *Crux Mathematicorum*, 14(2), 43-44.
- 1988 Doolittle, E. (1988c). Solution to Problem 1985.305.11. *Crux Mathematicorum*, 14(3), 68-69.
Doolittle, E. (1988d). Solution to Problem 1985.306.19. *Crux Mathematicorum*, 14(3), 70-71.
Doolittle, E. (1988e). Solution to Problem 1985.306.20. *Crux Mathematicorum*, 14(3), 71.
Doolittle, E. (1988f). Solution to Problem 1985.307.22. *Crux Mathematicorum*, 14(3), 71-72.
Doolittle, E. (1988g). Solution to Problem 1985.307.23. *Crux Mathematicorum*, 14(3), 72.
Doolittle, E. (1988h). Solution to Problem 1985.307.26. *Crux Mathematicorum*, 14(3), 73-74.
Doolittle, E. (1988i). Solution to Problem 1985.307.27. *Crux Mathematicorum*, 14(3), 74-75.
- 1988 Doolittle, E. (1988j). Solution to Problem 1986.3.1. *Crux Mathematicorum*, 14(4), 102-103.
Doolittle, E. (1988k). Solution to Problem 1986.4.2. *Crux Mathematicorum*, 14(4), 103.
Doolittle, E. (1988l). Solution to Problem 1986.4.3. *Crux Mathematicorum*, 14(4), 103.
Doolittle, E. (1988m). Solution to Problem 1986.4.4. *Crux Mathematicorum*, 14(4), 104.

Selected Presentations, Workshops, and Other Media

- 2024 Doolittle, E. Mathematics as a Spiritual Being. Invited talk at the Department of Mathematics, University of Saskatchewan
- 2024 Doolittle, E. Presenter and Organizer for Indigenising University Mathematics 3 international conference held at La Trobe University, Melbourne, Australia
- 2023 Doolittle, E. Better Living Through Combinatorics. Topic session at the 2023 Canadian Math Education Study Group Conference.
- 2023 Doolittle, E. (2023, September 1). Indigenous Math Podcast 1 (No. 1) [Broadcast]. www.cfnuradio.ca/voices/
- 2023 Doolittle, E., & Czuy, K. (2023, June 3). Mathematics is Creation, Being, & Medicine (No. 15) [Broadcast]. open.spotify.com/episode/21oDjAQvZIOVWIrh3CaKS
- 2022 Doolittle, E. Presenter and Organizer for Indigenizing University Mathematics 2 international conference held at the University of Newcastle, Australia, and at First Nations University of Canada
- 2022 Doolittle, E. 'Tent Talk' on Indigenous Mathematics. Teaching and Learning Here and Now conference at the University of Regina
- 2022 Doolittle, E., & Native Stories. (2022, April 3). Native Stories: Indigenous Mathematicians: Edward Doolittle [Broadcast]. nativestories.org/indigenous-mathematicians-edward-doolittle/
- 2021 Borwein, N., and Doolittle, E. Indigenous Mathematics. Keynote speakers at the Indigenising University Mathematics 2021 conference, University of Newcastle, Australia
- 2020 Doolittle, E. Online presentation on Indigenous mathematics for Teachers for the Federation of Sovereign Indigenous Nations (FSIN), Saskatchewan
- 2020 Doolittle, E. Online presentation for Langara College on Indigenizing math education at the post-secondary level
- 2019 Doolittle, E., & Russell, G. Mathematics as a Tool for Colonization (with Gale Russell), keynote presentation at Provoking Curriculum, a conference at the Faculty of Education, University of Regina

- 2019 Doolittle, E., & Nolan, K. Initiating and Nurturing Collaborations Between Mathematicians and Mathematics Educators, panel presentation at the Canadian Mathematics Education Study Group annual meeting
- 2019 Doolittle, E. Word Puzzles in Indigenous Languages, presentation at the Canadian Mathematical Society summer meeting
- 2019 Doolittle, E. Mathematics of Indigenous Games, a talk for high school students at Campbell Collegiate high school in Regina
- 2019 Doolittle, E. MATH 101 for Indigenous Students, presentation at the Canadian Mathematical Society winter meeting
- 2018 Doolittle, E. Off the Grid, keynote presentation at Living Mathematics in Our Communities, the 8th Aboriginal Mathematics Symposium at the First Nations Longhouse, University of British Columbia
- 2018 Bazzul, J., Doolittle, E., Omeasoo, D., & Russell, G. Exploring Indigenous Spiritualities In-Relation: How Might Science and Math Education Become Different? Panel at the Canadian Society for the Study of Education conference
- 2018 Doolittle, E. What is Indigenous Mathematics? Weweni Lecture, University of Winnipeg. www.uwinnipeg.ca/indigenous/weweni/weweni-2018/what-is-indigenous-mathematics.html
- 2017 Doolittle, E. Harmonics, Nodal Lines, and Acoustic Levitation, keynote presentation at the Treaty 4 Math Fair in Fort Qu'appelle
- 2017 Doolittle, E. Transformations, Symmetry, and the Starblanket, a talk for Grade 9 students at Campbell Collegiate high school in Regina
- 2016 Doolittle, E. From String Figures to the Fields Medal at the 6th Aboriginal Students in Math and Science Workshop for Indigenous high school students at Simon Fraser University
- 2016 Doolittle, E. An Exploration of the Fibonacci Sequence at Discover Your Direction, an event to encourage Indigenous grade 10 students to attend university
- 2016 Doolittle, E. Indigenous String Figures for the Science Showcase Series, First Nations University
- 2015 Doolittle, E. The Development of a Plains Cree Pangrammatic Autogram at STEMfest, an international conference, in Saskatoon
- 2015 Doolittle, E. Indigenous Students of Mathematics, invited talk at the National Meeting of Canadian Math Department Chairs
- 2014 Doolittle, E. Cree Syllabic Crosswords, FNUUniv Endangered Alphabets conference
- 2014 Doolittle, E. Indigenous Math Education, University of Regina/High School Transitions Committee Joint Professional Development conference
- 2014 Doolittle, E. Indigenous Mathematics, Richard and Louise Guy Lecture at the University of Calgary
- 2014 Doolittle, E. Indigenous Mathematics, Invited keynote address at the Ontario Institute for Studies in Education conference N'gwii Kendaasmin (We'll Learn Together): Drawing on Indigenous Knowledges to Transform Teaching and Learning in Mathematics and Science
- 2014 Doolittle, E. Indigenous Mathematics, Invited talk for Indigenous Math and Science conference at the University of Manitoba
- 2013 Doolittle, E. Mathematics of Planet Earth: Graph Theory of the Food Chain for the Science Camp for Aboriginal Youth, First Nations University
- 2013 Doolittle, E. Word Puzzles in Cree at the fourth annual Math and Science for Aboriginal Students conference at Simon Fraser University
- 2013 Doolittle, E. Manipulatives in High School Math Education series of workshops for the Yorkton Tribal Council
- 2012 Doolittle, E. Seeing Sounds for the Science Camp for Aboriginal Youth, First Nations University
- 2011 Doolittle, E. Mazes and Explorobots for the Science Camp for Aboriginal Youth, First Nations University
- 2010 Doolittle, E. Aboriginal Perspectives in the Saskatchewan Mathematics Curriculum at the Emerging Professionalism Conference, Faculty of Education, University of Regina
- 2009 Doolittle, E. Music and Signal Processing, presentation to Aboriginal K-12 students at the Kehewin Education Institute
- 2009 Doolittle, E. Teaching Aboriginal Perspectives in High School Mathematics at the Sun Country School District Professional Development Conference

- 2005 Doolittle, E. Building Community through Science Curriculum Actualization, Awasis Conference (organized by the Saskatchewan Teachers' Federation)
- 2002 Doolittle, E. Knots in Aboriginal Mathematics Education, Guest lecture for the Aboriginal Teacher Education Program, Queen's University
- 1998 Doolittle, E. Issues in the Mathematics Education of Aboriginal Students, Engineering Explorations Concordia University
- 1998 Doolittle, E. Seeing Sounds, Blueprint for the Future, National Aboriginal Achievement Foundation
- 1998 Doolittle, E. Graduation Address, Grand River Post-Secondary Education student recognition dinner
- 1997 Doolittle, E. Experiences of Indigenous Students, Native Science Dialogue, University of Toronto
- 1997 Doolittle, E. Mathematics as a Spiritual Endeavour, Aboriginal Youth Career Symposium
- 1996 Doolittle, E. Introduction of Hopi filmmaker Victor Masayesva Jr. to the Editing Aboriginal Texts conference at the University of Toronto
- 1995 Doolittle, E. Native Mathematics, Native Issues Seminar, First Nations House, University of Toronto
- 1995 Doolittle, E. Native Mathematics Education, Native Science Teachers Camp, University of Toronto

Peer Review and Editorial Work

- 2020 **Referee** for the *Engaged Scholar* journal: Community-Based Research, Teaching and Learning special issue on Trans-systemic and Indigenous Knowledges
- 2016–2017 **Referee** for *Canadian Journal of Science, Mathematics and Technology Education* special issue on Indigenous Mathematics Education
- 2014 **Referee** for a paper on Indigenous Math Education for the journal *in education*
- 2009 **Referee** for the *Canadian Journal of Science, Mathematics and Technology Education* special issue on Indigenous Science through Place
- 2005–2009 **Reviewer** for Pearson Education's *Math Makes Sense* K-12 textbook series for the Western and Northern Canadian Protocol (WNCP) curriculum
- 1996–1997 **Language Editor** for Ivrii, V. *Microlocal Analysis and Precise Spectral Asymptotics*. Springer Verlag

Leadership and Involvement

- 2025 **Chair**, Expert Committee, Canada Foundation for Innovation www.innovation.ca
- 2021–on **Member**, Canada Jay Mathematical Competition committee, Canadian Mathematical Society cms.math.ca/competitions/cjmc/
- 2019–on **Member**, Bargaining Team, First Nations University of Canada Academic Bargaining Unit, University of Regina Faculty Association www.urfa.ca
- 2015–on **Member**, Pension and Benefits Committee, First Nations University of Canada www.fnuniv.ca
- 2018 **Judge**, Yakutia International Science Fair in Yakutsk, Russia ysf.lensky-kray.ru/en/
- 2018–2022 **Mentor**, Verna J. Kirkness Foundation program www.vernakirkness.org/
- 2017–on **Judge**, and **Chair of a Judging Group**, Canada Wide Science Fair cwsf-espc.ca
- 2017 **Judge**, File Hills Qu'appelle Tribal Council Science Fair
- 2017 **Judge**, Treaty 4 Math Fair
- 2015–2017 **Secretary/Treasurer**, Native Heritage Foundation of Canada
- 2014 **Chair**, First Nations Environmental Contaminants Program (FNECP) Selection Committee www.sac-isc.gc.ca/eng/1583779185601/1583779243216
- 2012 **Member**, Multidisciplinary Assessment Committee, Canada Foundation for Innovation www.innovation.ca
- 2012 **Member**, SSHRC Insight Grant Aboriginal Research Adjudication Committee sshrc-crsh.gc.ca
- 2010 **Tax Policy Consultant**, Chiefs of Ontario chiefs-of-ontario.org
- 2010 **Member**, Academic Reform Task Force, First Nations University of Canada www.fnuniv.ca
- 2010 **Webmaster**, *Fund First Nations University Now!* blog fnuniv.wordpress.com
- 2007–2008 **Member**, Canadian Math Olympiad committee cms.math.ca/competitions/cmo/

2007 **Mentor**, Canada's International Math Olympiad team cms.math.ca/competitions/imo/

2003–2005 **Member**, President's International Alumni Council, University of Toronto www.utoronto.ca

1999–2002 **Member**, National Aboriginal Achievement Foundation Postsecondary Awards Jury

1996–1997 **Graduate Student Representative**, Aboriginal Advisory Council, University of Toronto www.utoronto.ca

1991–1992 **Member**, Presidential Advisory Committee on Race Relations and Anti-Racism Initiatives, University of Toronto www.utoronto.ca