ORCID: 0009-0000-2155-8749

Email: edoolittle@firstnationsuniversity.ca

Departament of Indigenous Knowledge and Science

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

First Nations University of Canada

Latest CV: github.com/edoolittle/cv/raw/pdf/cv.pdf 1 First Nations Way, Regina, Saskatchewan, S4S 7K2, Canada

# **Current Professional Appointments**

2024-on	Associate Dean, Research and Graduate Programs, 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
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
2001-2002	Assistant Professor of Mathematics, Saskatchewan Indian Federated College

# Leadership and Involvement

2025-on	<b>Board Member</b> , Board of Directors, Pacific Institute for the Mathematical Sciences (PIMS) www.pims.math.ca/people/board
2023-on	<b>Chair</b> , Mathematics and Reconciliation Committee, Canadian Mathematical Society (CMS) cms.math.ca/about-the-cms/governance/committees/#rmc
2022-on	<b>Executive Member</b> , Computer-Assisted Research Mathematics and its Applications (CARMA), Australia carmamaths.org/people/
2022-on	<b>Committee Member</b> , Equity, Diversity and Inclusion Advisory Committee, Fields Institute for Research in Mathematical Sciences (Fields) www.fields.utoronto.ca
2021-on	<b>Committee Member</b> , Indigenous Engagement Committee, Pacific Institute for the Mathematical Sciences (PIMS) www.pims.math.ca/people/committees/indigenous-engagement-committee
2020-on	<b>Board Member</b> , Equity, Diversity and Inclusion Advisory Board, Banff International Research Station (BIRS) www.birs.ca/about/governance/scientific-management/Equity-Diversity-Inclusion-Board/current-members-EDIB
2019-on	Judge, National Judging Team, Youth Science Canada (YSC) youthscience.ca
2018-on	Trustee, Trust Fund Committee, University of Regina Faculty Association urfa.ca/committees/trust-fund

## Education

1992-1997	PhD in Mathematics, University of Toronto www.utoronto.ca
	utoronto.scholaris.ca/server/api/core/bitstreams/a6c7bee0-0bce-49dd-8044-e0695623a0dc/content
1990-1992	MSc in Mathematics, University of Toronto, www.utoronto.ca
1985-1990	BSc in Mathematics, University of Toronto, www.utoronto.ca

## **Indigenous Identity**

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/news-item/canadian-mathematical-societys-2024-class-of-fellows-announced/
- 2023 **Adrien Pouliot Award**, Canadian Mathematical Society cms.math.ca/news-item/dr-edward-doolittle-named-the-2023-adrien-pouliot-award-recipient/
- 1992 Governor General's Gold Medal www.gg.ca/en/honours/recipients/116-5733

#### Grants

2026 **Mathematics Bundle**. Banff International Research Station (BIRS) workshop 26w5629.

Glanfield, F (PI), Doolittle, E, McKenna, B www.birs.ca/event/26w5629

- 2025–2027 **Word Puzzles in Indigenous Languages**. Humanities Research Institute Fellowship, University of Regina. Doolittle, E (PI). (**\$5,000 over 2 years**) www.humanitiesresearch.org/profile-dr-edward-doolittle/
- The Math Bundle. Banff International Research Station (BIRS) workshop 25w5472.

  Doolittle, E (PI), Glanfield, F, McKenna, B www.birs.ca/events/2025/5-day-workshops/25w5472
- 2024–2030 **Critical Approaches to Indigenous Relationality**. Social Sciences and Humanities Research Council (SSHRC) Partnership Grant. www.prairierelationality.ca/cair-meet-our-team-co-applicants
  Jobin, S (PI), et. al, Doolittle, E, et. al (**\$2.5 million over 6 years**)
- 2024–2029 **SK-NEIHR: Indigenous Futurisms in Indigenous Health and Wellbeing: The natawihowin and mamawiikikayaahk Research, Training and Mentorship Networks**. Network Environments for Indigenous Health Research (NEIHR) operating grant, Institute of Indigenous Peoples' Health (IIPH), Canadian Institutes of Health Research (CIHR) research-groups.usask.ca/sk-neihr/index.php Henry, R (NPI), Campbell, L (PI), Doolittle, E (PI), et. al (\$5.575 million over 5 years)
- 2024–2026 **The Mathematics of Indigenous Games**. First Nations University Board of Governors Research Award. Doolittle, E (PI), Fallat, S. (**\$5000 over 2 years**)
- 2023–2028 **Mathematics Education for STEM as Place**. Social Sciences and Humanities Research Council (SSHRC) Insight Grant. www.sshrc-crsh.gc.ca/results-resultats/recipients-recipiendaires/2021/ig-ss-eng.aspx Nicol, C (PI), Doolittle, E, Glanfield, F, Thom, J (**\$360,000 over 5 years**)
- 2022–2027 **Banff International Research Station**. Natural Sciences and Engineering Research Council (NSERC) Discovery Institutes Support Grants. www.nserc-crsng.gc.ca/ase-oro/Details-Detailles\_eng.asp?id=767960 Pramanik, M (PI), Behjat, L, Doolittle, E, Frappier, M, Husain, V, Lewis, M, Sun, L. (**\$5 million over 5 years**)
- 2013 Understanding Relationships between Aboriginal Knowledge Systems, Wisdom Traditions, and Mathematics: Research Possibilities. Banff International Research Station (BIRS) workshop 13w5120. Doolittle, E; Glanfield, F www.birs.ca/events/2013/5-day-workshops/13w5120
- 2010–2012 Creating a Research Network to Develop an Understanding of Relationships between Aboriginal Knowledge Systems, Wisdom Traditions, and Mathematics Education. Social Sciences and Humanities Research Council (SSHRC) Aboriginal Research Development Grant.

  Glanfield, F (PI), Donald, D, Doolittle, E, Sterenberg G (\$25,000 over 2 years)

  www.outil.ost.uqam.ca/crsh/Detail.aspx?Cle=78132&Langue=2
- 2008 MATH 104/105 Development of Online Calculus. Technology Enhanced Learning grant, Ministry of Advanced Education, Government of Saskatchewan.

  Herman, Allen (PI) & Doolittle, E. (\$30,000)
- 1991–1995 **NSERC Postgraduate Scholarship (\$56,000 over 4 years)** www.nserc-crsng.gc.ca/ase-oro/index\_eng.asp?new

## Supervision

- 2024-on Layne Burns, MSc in Mathematics, University of Regina (**Co-supervisor**)
- 2024-on Whitney Ogle, MA in Indigenous Education, University of Regina (Committee Member)
- 2023–2024 Layne Burns, Natural Sciences and Engineering Research Council (NSERC) Undergraduate Student Research Award (USRA) in Mathematics, First Nations University of Canada (**Supervisor**)
- 2023-on John Porrit, PhD in Mathematics Education, University of Regina (Co-supervisor)

Ehdaa Matia, PhD in Mathematics Education, University of Regina (Committee Member) 2023-on 2022-2023 Shana Graham, Postdoctoral Fellowship, University of Regina (Co-supervisor) Myron Medina, PhD in Curriculum Studies, University of British Columbia (External Examiner) 2022 open.library.ubc.ca/media/download/pdf/24/1.0421274/4 Tannen Acoose, PhD in Mathematics, University of Regina (Committee Member) 2020-on Vanessa Braun, MA in Curriculum and Instruction, University of Regina (External Examiner) 2018 ourspace.uregina.ca/server/api/core/bitstreams/17ba3eee-6a3b-40aa-add6-4fe95b865431/content Shana Graham, PhD in Education, University of Regina (Committee Member) 2017-2020 ourspace.uregina.ca/server/api/core/bitstreams/8facba27-f8f1-4d29-b47b-e0d2e7634000/content 2012-2017 Tannen Acoose, MSc in Mathematics, University of Regina (Co-supervisor) ourspace.uregina.ca/server/api/core/bitstreams/8fe04ddf-4683-467a-837c-220914dcacc0/content Meseret Bowden, MSc in Mathematics, University of Regina (Supervisor) 2003-2005

#### Papers in Refereed Journals

- future Lemon, M., Thom, J. S., <u>Doolittle, E.</u>, Glanfield, F., & Nicol, C. Time, place, and learning STEM as place. *Journal of Curriculum Studies*. Revised and submitted.
- future Dosselmann, R., Doolittle, E., & Tayal, V. Quipu data structure. Submitted to Springer New Generation Computing.
- future Doolittle, E., & Burns, L. Analysis of a Game Like the Peach Stone Bowl Game. In preparation.
- Nicol, C., Thom, J. S., <u>Doolittle, E.</u>, Glanfield, F., & Ghostkeeper, E. (2023) Mathematics education for STEM as place. *ZDM Mathematics Education*, 55(7), 1231–1242. doi:10.1007/s11858-023-01498-z
- Adusei, K. K., Ng, K. T. W., Karimi, N., Mahmud, T. S., & <u>Doolittle, E.</u> (2022). Modeling of municipal waste disposal behaviors related to meteorological seasons using recurrent neural network LSTM models. *Ecological Informatics*, 72, 101925. doi:10.1016/j.ecoinf.2022.101925
- 2020 Leung, F.-S., Radzimski, V., & <u>Doolittle, E.</u> (2020). Reimagining Authentic Mathematical Tasks for Non-STEM Majors. *Canadian Journal of Science, Mathematics and Technology Education*, 20(2), 205–217. doi:10.1007/s42330-020-00084-9
- 2017 Miller, A. M., & <u>Doolittle, E.</u> (2017). RaráMuri Bird Knowledge and Environmental Change in the Sierra Tarahumara, Chihuahua, Mexico. *Journal of Ethnobiology*, *37*(4), 663–681. doi:10.2993/0278-0771-37.4.663
- 2010 Kajander, A., Mason, R., Taylor, P., <u>Doolittle, E.</u>, 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 <u>Doolittle, E., & Glanfield, F. (2007)</u>. 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., & <u>Doolittle, E.</u> (2006). Respectful actions in research: Aboriginal adolescents speaking their future. *Delta Kappa Gamma Bulletin*, 72(3), 23–29.
- 2000 Ferrando, S. E., <u>Doolittle, E.,</u> Bernal, A. J., & Bernal, L. J. (2000). Probabilistic matching pursuit with Gabor dictionaries. *Signal Processing*, 80(10), 2099–2120. doi:10.1016/S0165-1684(00)00071-2

## **Book Chapters**

- future Doolittle, E., Graham, S., & Hughes, A. Division with remainder: Indigenous perspectives. Under review.
- 2025 <u>Doolittle, E., & Hughes, A. (2025)</u>. Perhaps we didn't need a bridge: In dialogue with Indigenous mathematics. In K. Kiewitt, R. Lutz, G. Cajete, M. do C. dos S. Gonçalves, & D. K. Johanna (Eds.), *Decolonizing Western-Indigenous Dialogues: Interwoven Epistemologies for Multiple Modernities*. Bloomsbury Academic. www.bloomsbury.com/ca/decolonizing-westernindigenous-dialogues-9781350425200
- 2018 <u>Doolittle, E.</u> (2018). Off the Grid. In S. Gerofsky (Ed.), *Contemporary Environmental and Mathematics Education Modelling Using New Geometric Approaches: Geometries of Liberation* (pp. 101–121). Palgrave Pivot. doi:10.1007/978-3-319-72523-9\_7
- 2018 <u>Doolittle, E.</u> (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:10.1007/978-3-319-92390-1

### Conference Proceedings

- future <u>Doolittle, E</u> (2024). "Mathematics as a Spiritual Being". Invited talk in the *Proceedings of the Fifteenth International Conference on Mathematics Education (ICME-15)*
- Staats, S., Ugboajah, I., Chronaki, A., <u>Doolittle, E, & Sircar, S. (2021)</u>. "There is no America without inequality": Imagining social justice writing in a calculus class. In D. Kollosche (Ed.), *Exploring new ways to connect: Proceedings of the Eleventh International Mathematics Education and Society Conference* (Vol. 1, pp. 260–263). Tredition. doi:10.5281/zenodo.5393187
- 2020 Gourdeau, F., Deguire, P., LeBlanc, M., <u>Doolittle, E., Nolan, K., Gibara, R., & Mathieu-Soucy, S. (2020)</u>. Initiating and nurturing collaborations between mathematicians and mathematics educators. In J. Holm & S. Mathieu-Soucy (Eds.), *Proceedings of the 2019 Annual Meeting of the Canadian Mathematics Education Study Group* (pp. 125–137). Canadian Mathematics Education Study Group.
  www.cmesg.org/wp-content/uploads/2021/06/CMESG-2019-website.pdf
- 2011 <u>Doolittle, E, Lunney Borden, L., & Wiseman, D. (2011).</u> Can we be thankful for mathematics? Mathematical thinking and Aboriginal peoples. In P. Liljedahl, S. Oesterle, & D. Allan (Eds.), *Proceedings of the 2010 Annual Meeting of the Canadian Mathematics Education Study Group* (pp. 81–94). Canadian Mathematics Education Study Group. www.cmesg.org/wp-content/uploads/2015/01/CMESG2010.pdf
- 2007 <u>Doolittle, E.</u> (2007). Mathematics as medicine. In P. Liljedahl (Ed.), *Proceedings of the 2006 Annual Meeting of the Canadian Mathematics Education Study Group* (pp. 17–25). Canadian Mathematics Education Study Group. www.cmesg.org/wp-content/uploads/2015/01/CMESG2006.pdf

#### **Invited Talks**

- future Doolittle, E. 2025 Hagey Lecture, University of Waterloo uwaterloo.ca/hagey-lectures/
- 2025 Keshen, J, Ottmann, J, Yost, C, <u>Doolittle, E</u>. ReconciliAction Panel, National Building Reconciliation Forum 2025, First Nations University of Canada and the University of Regina
- 2024 <u>Doolittle, E.</u> Mathematics as a Spiritual Being. Department of Mathematics and Statistics, University of Saskatchewan usask.cloud.panopto.eu/Panopto/Pages/Viewer.aspx?id=001c1142-f3a6-476b-bed9-b13c0037c04f
- 2023 Doolittle, E. Adrien Pouliot Award Prize Lecture. 2023 CMS Winter Meeting, Canadian Mathematical Society.
- 2023 Doolittle, E. Indigenizing University Mathematics. Invited plenary speaker at Alberta Mathematics Dialogue 2023
- 2021 Borwein, N., & <u>Doolittle, E.</u> Indigenous Mathematics. Keynote presentation at Indigenising University Mathematics 2021, University of Newcastle, Australia carmamaths.org/meetings/ium/video/Theme 4 Edward and Naomi.mp4
- 2018 <u>Doolittle, E.</u> What is Indigenous Mathematics? Weweni Indigenous Scholars Speaker Series, University of Winnipeg www.uwinnipeg.ca/indigenous/weweni/weweni-2018/what-is-indigenous-mathematics.html
- 2018 <u>Doolittle, E.</u> Geometries of Liberation. Keynote presentation at Living Mathematics in Our Communities: Listening to the Land, 8th Aboriginal Mathematics Symposium, First Nations House of Learning, University of British Columbia
- 2014 <u>Doolittle, E. Native American Mathematics. Louise and Richard K. Guy Lecture, University of Calgary mathtube.org/lecture/video/native-american-mathematics</u>
- 2014 <u>Doolittle, E.</u> Indigenous Mathematics. Invited speaker, N'gwii Kendaasmin (We'll Learn Together): Drawing on Indigenous Knowledges to Transform Teaching and Learning in Mathematics and Science, Ontario Institute for Studies in Education, University of Toronto
- 2014 Doolittle, E. Indigenous Mathematics. Indigenous Math and Science Symposium, University of Manitoba
- 2006 <u>Doolittle, E.</u> Mathematics as Medicine. Plenary speaker, 30<sup>th</sup> Annual Meeting of the Canadian Mathematics Education Study Group, University of Calgary www.cmesg.org/wp-content/uploads/2015/01/CMESG2006.pdf

#### Articles in Periodicals

- 2021 <u>Doolittle, E</u> (2021, December). Explorations in Indigenous Mathematics: Drum Lacing. *Crux Mathematicorum*, 47(10), 481–486. cms.math.ca/publications/crux/issue/?volume=47&issue=10
- 2021 <u>Doolittle, E</u> (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

- 2020 <u>Doolittle, E</u> (2020, March). Mathematics and Reconciliation. *CMS Notes*, *52*(2), 2–5. notes.math.ca/en/article/mathematics-and-reconciliation/
- 2019 Barr, D., Desaulniers, S., <u>Doolittle, E,</u> & 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

#### Peer Review and Editorial Work

2025	Chair, Expert Committee, Canada Foundation for Innovation (CFI) www.innovation.ca
2024-on	<b>Guest Editor</b> , <i>Education Sciences</i> special issue Indigenous Pedagogies and Perspectives in STEM and Mathematics Education: Learning that Supports the Well-Being of Self, Family, Community, Land, and Ancestors www.mdpi.com/journal/education/special_issues/THJA7SLWC2
2024	Referee, International Journal of Science and Mathematics Education springer.com/journal/10763
2022	<b>Peer Review Member</b> , First Nations Biobanking and Genomic Research committee, Canadian Institutes of Health Research (CIHR) www.researchnet-recherchenet.ca/rnr16/vwOpprtntyDtls.do?prog=3635
2020	<b>Referee</b> for the <i>Engaged Scholar Journal: Community-Based Research, Teaching and Learning</i> special issue on Indigenous and Trans-Systemic Knowledge Systems esj.usask.ca/index.php/esj/issue/view/5160
2018	Referee for the Minnesota Journal of Undergraduate Mathematics pubs.lib.umn.edu/index.php/mjum/
2016-2017	Referee, Canadian J. of Science, Mathematics, and Technology Education springer.com/journal/42330
2014	Referee, in education journal journals.uregina.ca/ineducation
2012	<b>Member</b> , Multidisciplinary Assessment Committee (MAC), Canada Foundation for Innovation (CFI) www.innovation.ca
2012	<b>Member</b> , Insight Grants Selection Committee (Aboriginal Research), Social Sciences and Humanities Research Council (SSHRC) sshrc-crsh.gc.ca
2009	<b>Referee</b> , Canadian Journal of Science, Mathematics, and Technology Education special issue Indigenous Science Education From Place link.springer.com/journal/42330/volumes-and-issues/9-3
2005-2009	<b>Reviewer</b> for Math Makes Sense — Pearson WNCP Edition, K-9, Pearson Canada www.pearsoncanadaschool.com/Math/products/mms-wncp-k-9.html
1996-1997	Language Editor for Ivrii, V. Microlocal Analysis and Precise Spectral Asymptotics. Springer.

#### Reports

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

### **Problem Solutions**

- 2006 <u>Doolittle, E</u> (2006a). Solution to Problem 3026. *Crux Mathematicorum*, 32(3), 184–185. <u>Doolittle, E</u> (2006b). Solution to Problem 3028. *Crux Mathematicorum*, 32(3), 186–187. <u>Doolittle, E</u> (2006c). Solution to Problem 3029. *Crux Mathematicorum*, 32(3), 187–188. <u>cms.math.ca/publications/crux/issue/?volume=32&issue=3</u>
- 2006 <u>Doolittle, E</u> (2006d). Solution to Problem 3080. *Crux Mathematicorum*, 32(7), 473–475. cms.math.ca/publications/crux/issue/?volume=32&issue=7
- 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. cms.math.ca/publications/crux/issue/?volume=14&issue=2
- 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.

  Cms.math.ca/publications/crux/issue/?volume=14&issue=3

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.

cms.math.ca/publications/crux/issue/?volume=14&issue=4

### **Open Software**

2025 **Curriculum Vitae**, adaptation of a GitHub template for developing a readable curriculum vitae in LaTeX. O edoolittle/cv.

### **Open Educational Resources**

2025 **Calculus I**, resources including Beamer slides, problem sets, and solutions, for use in conjunction with Stewart Calculus. acoustic education conjunction with Stewart Calculus.

#### Selected Presentations, Workshops, and Other Media

- 2025 <u>Doolittle, E.</u> Rotations in Indigenous Mathematics and in Mathematics Education. Talk at The Math Bundle, Banff International Research Station (BIRS) workshop 25w5472
- 2025 <u>Doolittle, E.</u> Indigenous Students and Mathematics Competitions, Math Unity: Enhancing Diversity in Mathematics Through Outreach, 2025 Canadian Mathematical Society Summer Meeting
- 2025 <u>Doolittle, E.</u> Indigenous Games in Statistics Education and Research, Indigenizing the statistics curriculum, 2025 Statistical Society of Canada Annual Meeting tinyurl.com/indigenous-games-stats-ed-pptx
- 2025 <u>Doolittle, E. Division with Remainder: Indigenous Perspectives.</u> Alberta Mathematics Dialogue 2025, University of Calgary tinyurl.com/division-with-remainder-pptx
- 2025 <u>Doolittle, E.</u> Tips and Tricks for UR Courses. FNUniv Instructors Lunch and Learn, First Nations University of Canada urcourses.uregina.ca/mod/page/view.php?id=2932292&forceview=1
- 2025 <u>Doolittle, E.</u> Mathematics as Story. Storytelling through Art, Language, and Action, 15<sup>th</sup> Annual Storytellers Conference, Department of Indigenous Studies, State University of New York at Buffalo
- 2024 <u>Doolittle, E.</u> String Figures and Knots. Aboriginal and Torres Strait Islander Mathematics Alliance (ATSIMA) STEM Camp, Birrigai Outdoor School, Australian Capital Territory
- 2024 <u>Doolittle, E. Presenter and Organizer for Indigenising University Mathematics 3 international conference held at La Trobe University, Melbourne, Australia</u>
- 2023 <u>Doolittle, E.</u> Better Living Through Combinatorics. Topic Session at the 47<sup>th</sup> Annual Meeting of the Canadian Math Education Study Group
- 2023 <u>Doolittle, E., Glanfield, F., Nicol, C., & Thom, J. (2023, September 1). Indigenous Math Podcast 1 (No. 1) [Broadcast]. CFNU Radio, First Nations University of Canada. www.cfnuradio.ca/voices/</u>
- 2023 <u>Doolittle, E, & Czuy, K. (2023, June 3).</u> Mathematics is Creation, Being, & Medicine (No. 15) [Broadcast]. Ancestral Science Podcast, Relational Science Circle open.spotify.com/episode/21oDjAQvZIOVWIIRh3CaKS
- 2022 <u>Doolittle, E.</u> Indigenous Maths, Global Math, and Indigenizing Mathematics. The Centre for Indigenous Knowledges and Languages (CIKL), and the Department of Mathematics and Statistics, York University www.youtube.com/watch?v=ptk\_Ga43Wg
- 2022 <u>Doolittle, E. Presenter and Organizer for Indigenizing University Mathematics 2 international conference held at</u> First Nations University of Canada and Yamuloong Centre, Garden Suburb, Australia
- 2022 <u>Doolittle, E.</u> Bridging Indigenous Mathematics and Global Mathematics. Turtle Island Indigenous Science Conference 2022, University of Manitoba
- 2022 <u>Doolittle, E.,</u> Russell, G., & Ricketts, K. 'Tent Talk' on Indigenous Mathematics. Teaching and Learning Here and Now 2022 conference at the University of Regina
- 2022 <u>Doolittle, E,</u> & Native Stories. (2022, April 3). Indigenous Mathematicians Podcast: Edward Doolittle [Broadcast] nativestories.org/indigenous-mathematicians-edward-doolittle/
- 2022 <u>Doolittle, E.</u> Mathematics and Reconciliation. Interdisciplinary Research Institute for Mathematical and Statistical Modelling in Scientific Discovery, Innovation and Sustainability (MS2Discovery), Wilfrid Laurier University

- 2021 Doolittle, E. Indigenizing Mathematics, University of Toronto Mathematics Department Equity Forum
- 2021 Leung, F-S, Radzimski, V, & <u>Doolittle, E</u>. Reimagining Authentic Mathematical Tasks Non-STEM Majors, Paper Panel Presentation A, Fields MathEd Forum: (Re)imagining the M in STEM
- 2020 <u>Doolittle, E.</u> Online presentation on Indigenous mathematics for Teachers for the Federation of Sovereign Indigenous Nations (FSIN), Saskatchewan
- 2020 <u>Doolittle, E.</u> Online presentation for Langara College on Indigenizing math education at the post-secondary level
- 2019 <u>Doolittle, E,</u> & Russell, G. Mathematics as a Tool for Colonization, keynote presentation at Provoking Curriculum, Faculty of Education, University of Regina
- 2019 <u>Doolittle, E,</u> & Nolan, K. Initiating and Nurturing Collaborations Between Mathematicians and Mathematics Educators, panel presentation at the Canadian Mathematics Education Study Group annual meeting
- 2019 <u>Doolittle, E.</u> Word Puzzles in Indigenous Languages, presentation at the Canadian Mathematical Society summer meeting
- 2019 <u>Doolittle, E.</u> 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
- 2019 Leung, F.-S., <u>Doolittle, E, Zazkis, R., & Marken, K. Looking In, panel presentation at Innovations in New Instructor Training, Banff International Research Station workshop 19w2231 www.birs.ca/events/2019/2-day-workshops/19w2231/videos/watch/201906220942-Doolittle.html</u>
- 2018 Russell, G., Bazzul, J., <u>Doolittle, E., Donald, D., Higgins, M., & Ji, X. Exploring Indigenous Spiritualities In-Relation:</u>
  How Might Science and Math Education Become Different? Panel at the Canadian Society for the Study of Education XLVI Annual Conference
- 2017 <u>Doolittle, E.</u> Harmonics, Nodal Lines, and Acoustic Levitation, keynote presentation at the Treaty 4 Math Fair in Fort Qu'appelle, Saskatchewan
- 2017 <u>Doolittle, E.</u> Transformations, Symmetry, and the Starblanket, a talk for Grade 9 students at Campbell Collegiate high school in Regina
- 2016 <u>Doolittle, E. From String Figures to the Fields Medal at the 6th Aboriginal Students in Math and Science Workshop</u> for Indigenous high school students at Simon Fraser University
- 2016 <u>Doolittle, E.</u> 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 <u>Doolittle, E.</u> Indigenous Students of Mathematics, 17th Annual Meeting of Canadian Mathematics Department Chairs
- 2015 CBC & <u>Doolittle, E.</u> "Residential Schools Robbed Edward Doolittle of the Mohawk Language. Then He Reclaimed It." CBC Radio, June 4, 2015. tinyurl.com/www-cbc-ca-radio-asithappens
- 2015 <u>Doolittle, E.</u> The Development of a Plains Cree Pangrammatic Autogram at STEMfest, an international conference, in Saskatoon
- 2014 Doolittle, E. Cree Syllabic Crosswords, FNUniv Endangered Alphabets conference
- 2014 <u>Doolittle, E.</u> Indigenous Math Education, University of Regina/High School Transitions Committee Joint Professional Development conference
- 2013 <u>Doolittle, E.</u> Mathematics of Planet Earth: Graph Theory of the Food Chain for the Science Camp for Aboriginal Youth, First Nations University
- 2013 <u>Doolittle, E.</u> 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 <u>Doolittle, E.</u> Graph Theory in an Indigenous Context, in First Nations Math Education, Banff International Research Station workshop 12w5076 www.birs.ca/events/2012/5-day-workshops/12w5076/videos/watch/201211210914-Doolittle.html
- 2012 Doolittle, E. Seeing Sounds, 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 <u>Doolittle, E.</u> Aboriginal Perspectives in the Saskatchewan Mathematics Curriculum, Emerging Professionalism Conference, Faculty of Education, University of Regina
- 2009 <u>Doolittle, E.</u> Music and Signal Processing, presentation to Aboriginal K-12 students at the Kehewin Education Institute
- 2009 <u>Doolittle, E.</u> Teaching Aboriginal Perspectives in High School Mathematics at the Sun Country School District Professional Development Conference
- 2005 <u>Doolittle, E. Building Community through Science Curriculum Actualization, Awasis Conference (organized by the Saskatchewan Teachers' Federation)</u>
- 2002 <u>Doolittle, E.</u> Knots in Aboriginal Mathematics Education, Guest lecture for the Aboriginal Teacher Education Program, Queen's University
- 1998 <u>Doolittle, E.</u> 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 <u>Doolittle, E.</u> Introduction of Hopi filmmaker Victor Masayesva Jr., Editing Aboriginal Oral Texts: the thirty-second annual Conference on Editorial Problems, University of Toronto coilink.org/20.500.12592/xdq1t6
- 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

## Selected Teaching Experience

2020-on	Professor, MATH 110 (Calculus I) remote modality (online, synchronous), First Nations University of Canada
2020-on	Mentor, Putnam Competition Training, University of Regina
2023	<b>Sessional Lecturer</b> , EDPJ/EDJI 1100 (Mathematics Education for Primary/Junior/Intermediate) for the Waaban Indigenous Education Program at York University
2013-2014	<b>Professor</b> , AMTH 001/091/092 (Adult Mathematics) for community-based access programs in Onion Lake and Piapot First Nations, First Nations University
2012	<b>Professor</b> , MATH 101 for the community-based Aboriginal Teacher Education Program (Fort Qu'appelle), First Nations University
2018	<b>Professor</b> , EMTH 215 (Elementary Mathematics Education), Department of Indigenous Education, First Nations University
2001	Instructor, Leadership and Management, Grand River Polytechnic, Six Nations
2000	Lecturer, Native Studies, Faculty of Environmental Studies, York University
1999-2001	Lecturer, ABS201Y (Aboriginal Studies), Faculty of Arts and Science, University of Toronto
1998-1999	<b>Instructor</b> , Elementary Mathematics Education, Aboriginal Teacher Education Program, Faculty of Education, Queen's University
1999	Instructor, Business Math, First Nation Management Training and Confederation College, Sioux Lookout
1997-1998	Lecturer, MAT 188F/196F (Linear Algebra/Calculus), Faculty of Engineering, University of Toronto
1997	Lecturer, MAT135Y (Calculus I), Faculty of Arts and Science, University of Toronto
1996	Lecturer, MAT186F (Calculus IB), Faculty of Engineering, University of Toronto
1992-1994	Academic Counselor, First Nations House, University of Toronto
1986-1996	Teaching Assistant, Department of Mathematics, University of Toronto

### Selected Community Service

2023-2025	Member, Academic Performance Review Committee, First Nations University of Canada www.fnuniv.ca
2023-2024	Regina and First Nations University of Canada
	event.fourwaves.com/2024tiisc/pages/8c2de33c-254b-4cc1-a379-dfc8e2621e19
2022-2024	Executive Member, Canadian Mathematics Education Study Group www.cmesg.org
2021-on	<b>Member</b> , Canada Jay Mathematical Competition committee, Canadian Mathematical Society cms.math.ca/competitions/cjmc/
2020-2027	<b>Member</b> , Mathematics and Reconciliation Committee, Canadian Mathematical Society cms.math.ca/about-the-cms/governance/committees/#rmc
2019-on	<b>Member</b> , Bargaining Team, First Nations University of Canada Academic Bargaining Unit, University of Regina Faculty Association www.urfa.ca
2018-2022	Mentor, Verna J. Kirkness Foundation program www.vernajkirkness.org
2018	Judge, Yakutia International Science Fair in Yakutsk, Russia ysf.lensky-kray.ru/en/
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-on	Member, Pension and Benefits Committee, First Nations University of Canada www.fnuniv.ca
2015-2017	Secretary/Treasurer, Native Heritage Foundation of Canada
2013-2014	<b>Chair</b> , First Nations Environmental Contaminants Program (FNECP) Selection Committee www.sac-isc.gc.ca/eng/1583779185601/1583779243216
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	Mentor, Canada's International Math Olympiad team www.birs.ca/events/2007/summer-schools/07ss005
2006-2008	Member, Canadian Mathematical Olympiad committee cms.math.ca/competitions/cmo/
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	<b>Member</b> , Presidential Advisory Committee on Race Relations and Anti-Racism Initiatives, University of Toronto www.utoronto.ca

## Research Impact: Selected Citations

- 2025 Lu, J., Si, H., Xu, J., & Xu, T. (2025). An overview of applications and trends of STEM for learning effectiveness An umbrella review based on 22 meta-analyses. *Educational Research Review*, 100712. doi:10.1016/j.edurev.2025.100712
- Bakan, G., & Bircan, M. A. (2025). Enhancing 21st century skills of primary school students in rural areas through STEM activities. *The Journal of Educational Research*, 0(0), 1–16. doi:10.1080/00220671.2025.2517265
- Beumann, S., Weber, D., & Benölken, R. (2025). Identifying and Fostering Giftedness in Students with Disabilities
   Potential Barriers in Identification and Support from a Mathematics Educational Perspective. *International Journal of Science and Mathematics Education*. doi:10.1007/s10763-025-10587-2
- 2025 Du, W., Cao, Y., Tang, M., Wang, F., & Wang, G. (2025). Factors influencing AI adoption by Chinese mathematics teachers in STEM education. *Scientific Reports*, *15*(1), 20429. doi:10.1038/s41598-025-06476-x
- Abtahi, Y., & Planas, N. (2024). Mathematics teaching and teacher education against marginalisation, or towards equity, diversity and inclusion. *ZDM Mathematics Education*, 56(3), 307–318. doi:10.1007/s11858-024-01602-x
- Anderson, J. (2024). How mathematics in STEM can contribute to responsible citizenship education in schools. In J. Anderson & K. Makar (Eds.), *The Contribution of Mathematics to School STEM Education: Current Understandings* (pp. 243–256). Springer Nature. doi:10.1007/978-981-97-2728-5\_14

- 2024 Loh, K. Q., & Dasgupta, M. (2024, July 24). The forces of stage design: An interdisciplinary approach to teaching normal force, frictional force, and design ethics for non-STEM majors. 2023 ASEE Midwest Section Conference. doi:10.18260/1-2-660.1137-46369
- 2024 Rosa, M., & Orey, D. C. (2024). Contributions of the pedagogical Action of ethnomodelling to STEM Education. In J. Anderson & K. Makar (Eds.), *The Contribution of Mathematics to School STEM Education: Current Understandings* (pp. 277–293). Springer Nature. doi:10.1007/978-981-97-2728-5\_16
- Nordkild, S. I., & Hætta, O. E. (2023). Mathematics teaching in lávvues from the perspectives of Indigenous education and critical peace education. *Journal of Peace Education*, 20(2), 176–195. doi:10.1080/17400201.2023.2206731
- 2023 Ortega-Álvarez, R., & Casas, A. (2023). Biocultural salient birds: Which biological and cultural factors define them? *Frontiers in Conservation Science*, 4. doi:10.3389/fcosc.2023.1215967
- 2023 Retana-Guiascón, O. G., Santos-Fita, D., Pereyra-Camaal, A., Mejenes-López, S. de M. A., & Vargas-Soriano, J. (2023). Conocimiento morfo-anatómico de las aves por mayas yucatecos. *Huitzil*, *24*(1). doi:10.28947/hrmo.2023.24.1.720
- 2023 Xenofontos, C., & Mouroutsou, S. (2023). Resilience in mathematics education research: A systematic review of empirical studies. *Scandinavian Journal of Educational Research*, 67(7), 1041–1055. doi:10.1080/00313831.2022.2115132
- Guano, E., & Moretti, C. (2022). A tale of two ethnographers: Urban anthropologists read Invisible Cities. In B. Linder (Ed.), "Invisible Cities" and the Urban Imagination (pp. 117–130). Springer International Publishing. doi:10.1007/978-3-031-13048-9\_9
- 2022 Khan, S., & Bowen, G. M. (2022). Why Multispecies' Flourishing? *Journal of Research in Science, Mathematics and Technology Education*, 5(1), 1–10. doi:10.31756/jrsmte.515
- 2022 Rubel, L. H., Herbel-Eisenman, B., Peralta, L. M., Lim, V., Jiang, S., & Kahn, J. (2022). Intersectional feminism to reenvision mathematical literacies & precarity. *Research in Mathematics Education*, 24(2), 224–248. doi:10.1080/14794802.2022.2089908
- 2021 La France, S. (2021). Engaging in Speculation and Critical Reflection About Future Assessment Practice [MEd, University of Alberta]. tinyurl.com/thesis-lafrance-2021-09
- 2021 Maciejewski, W. (2021). Teaching math in real time. *Educational Studies in Mathematics*, 108(1), 143–159. doi:10.1007/s10649-021-10090-9
- 2021 Meyer, S., & Aikenhead, G. (2021). Indigenous culture-based school mathematics in action part II: The study's results: what support do teachers need? *The Mathematics Enthusiast*, 18(1–2), 119–138. doi:10.54870/1551-3440.1517
- 2021 Schiano, B. A. (2021). Redesigning Developmental Math to Improve Community College Retention Rates and Student Success [EdD, Centenary University]. www.proquest.com/docview/2524205938/abstract/6D9302DD5E3A4935PQ/1
- 2020 Abtahi, Y. (2020). The "M" in STEM as a Note of Caution: Resilient to What and Responsive to Whose Culture. Canadian Journal of Science, Mathematics, and Technology Education, 20(2), 281–287. doi:10.1007/s42330-020-00093-8
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- 2020 McDougall, D. (2020). Building Knowledge in a Time of Physical Distancing. *Canadian Journal of Science, Mathematics, and Technology Education*, 20(2), 167–170. doi:10.1007/s42330-020-00096-5
- Aikenhead, G. S. (2017). Enhancing School Mathematics Culturally: A Path of Reconciliation. *Canadian Journal of Science, Mathematics, and Technology Education, 17*(2), 73–140. doi:10.1080/14926156.2017.1308043
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- 2012 Wagner, D., & Lunney Borden, L. (2012). Aiming for equity in ethnomathematics research. In B. Herbel-Eisenmann, J. Choppin, D. Wagner, & D. Pimm (Eds.), *Equity in Discourse for Mathematics Education: Theories*, *Practices*, *and Policies* (pp. 69–87). Springer Netherlands. doi:10.1007/978-94-007-2813-4\_5

- 2011 Lunney Borden, L. (2011). The 'verbification' of mathematics: Using the grammatical structures of Mi'kmaq to support student learning. For the Learning of Mathematics, 31(3), 8–13. flm-journal.org/Articles/2F7403012375137CE62E2DE320F4B.pdf
- 2009 Panina-Beard, N. (2009). Striving for success: Education and career aspiration experiences in the lives of young Aboriginal women [MA in Counselling Psychology, Trinity Western University]. tinyurl.com/panina-beard-2009
- 1996 Honsberger, R. (1996). *From Erdős to Kiev: Problems of Olympiad Caliber*. Mathematical Association of America. bookstore.ams.org/dol-17

### Research Impact: Selected Acknowledgments

- 2024 CEMC. (2024). Problems with purpose: Volume 2. cemc.uwaterloo.ca/resources/problems-with-purpose.php
- Khan, S., & Higgins, M. (2024). In conversation with Steven Khan: Sensible and sense-able qualitative literacies for multi-species flourishing. In S. Tolbert, M. F. G. Wallace, M. Higgins, & J. Bazzul (Eds.), *Reimagining Science Education in the Anthropocene*, Volume 2 (pp. 389–408). Springer International Publishing. doi:10.1007/978-3-031-35430-4\_21
- 2023 CEMC. (2023). Problems with purpose: Volume 1. cemc.uwaterloo.ca/resources/problems-with-purpose.php
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- 2020 Graham, S. R. W. (2020). Disrupting Euro-Western onto-epistemologies (re)imagining possibilities for mathematics education through/with Indigenous knowledges and complex conversations [PhD in Education, University of Regina]. hdl.handle.net/10294/9302
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- 2018 Hogue, M. (2018). *Dropping the "T" from CAN'T: Enabling Aboriginal post-secondary academic success in science and mathematics*. JCharlton Publishing. tinyurl.com/hogue-dropping-t-from-cant
- 2017 Acoose, T. D. (2017). Some probability properties of the crack distribution [MSc in Mathematics, Faculty of Graduate Studies and Research, University of Regina]. hdl.handle.net/10294/8440
- 2016 Russell, G. (2016). Valued kinds of knowledge and ways of knowing in mathematics and the teaching and learning of mathematics: A worldview analysis [PhD in Curriculum Studies, University of Saskatchewan]. harvest.usask.ca/items/11a8b074-934b-4cb1-ab5a-491a42960462/full
- 1998 Ivrii, V. (1998). Microlocal Analysis and Precise Spectral Asymptotics. Springer Science & Business Media.