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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 | <b>Member</b> , 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      | <b>Mentor</b> , 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 of My Work

- 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
- Aikenhead, G. (2020). School Science and Mathematics Storylines. *Canadian Journal of Science, Mathematics, and Technology Education*, 20(4), 682–699. doi:10.1007/s42330-020-00115-5
- 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
- Vashchyshyn, I., & Lunney Borden, L. (2017). Spotlight on the profession: In conversation with Dr. Lisa Lunney Borden. *The Variable: An SMTS Periodical*, *2*(5), 18–23.
- Fyhn, A. B., Nutti, Y. J., Nystad, K., Eira, E. J. S., & Hætta, O. E. (2016). "We had not dared to do that earlier, but now we see that it works": Creating a culturally responsive mathematics exam. *AlterNative: An International Journal of Indigenous Peoples*, 12(4), 411–424. doi:10.20507/AlterNative.2016.12.4.6
- 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 of My Work

- 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
- First Nations University of Canada. (2023, March 24). Mohawk Language Program Signing Event [Video recording]. www.facebook.com/watch/live/?ref=watch\_permalink&v=735653604603851. Acknowledgment at 13:30.
- Nolan, K., & Lunney Borden, L. (2023). It's all a matter of perspective. For the Learning of Mathematics, 43(2), 8–14. flm-journal.org/Articles/38B48D80ABF94B2B6AA2C0373439D.pdf
- Medina, M. A. (2022). Weaving Indigenous mathematics: Ways of sensing, being, and doing [PhD in Curriculum Studies, University of British Columbia]. open.library.ubc.ca/media/download/pdf/24/1.0421274/4
- 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
- Braun, V. K. (2018). Beyond the numbers: Gaining perspective on the Mathematics Problem towards the successful transition of students into university mathematics [MEd in Curriculum and Instruction, Faculty of Graduate Studies and Research, University of Regina]. hdl.handle.net/10294/8549
- 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.