

Carl-Georg (Charly) Bank's resume - December 2020

Degrees

- Ph.D. 2002 (UBC) "Teleseismic investigation of the upper mantle beneath the Archean Slave craton, NW Canada, and of the Moho beneath Canadian broad-band stations"
- M.Sc. 1997 (UBC) "Structure of the upper mantle below south-central Saskatchewan from teleseismic travel-time inversion"
- Diplom-Geophys., 1994 (LMU) "Ultraschallseismische Messungen an Gneisen"

Positions

- Associate Professor, Teaching Stream, University of Toronto, Department of Earth Sciences (since 2015, Senior Lecturer 2009-2015, Lecturer 2005-2009)
- Visiting Assistant Professor, Dept. of Geology, Colorado College 2002-2005

Awards

- University of Toronto Teaching Fellowship 2015-16
- University of Toronto Joan Foley Quality of Student Experience Award 2013
- Faculty of Arts and Science Excellence in Teaching Award 2011

Research interests (with select **publications** or presentations)

educational research

• geoeitics

- Bank, C.-G. and A. M. Ryan, 2020. Engaging students in ethical decision-making: a case study from an undergraduate geoscience course. *International Journal of Ethics Education*, 5: 51-65, doi: [10.1007/s40889-020-00085-0](https://doi.org/10.1007/s40889-020-00085-0)
- Ryan, A. M., and C.-G. Bank, 2017. The Need for Geoethics Awareness from a Canadian Perspective. *Geosciences*, 7(4), 120, doi:[10.3390/geosciences7040120](https://doi.org/10.3390/geosciences7040120)

• student skills development

- Bank, C-G, and H. Daxberger, 2020. Concept maps for structuring instruction and for assessment in a large introductory science course, *Journal of College Science Teaching*, 49(6), 50-60
- Bank, C. and A. M. Ryan, 2009: Real problems, real research, real students: authentic research with undergraduates as a win-win-win collaboration, *Collected Essays on Learning and Teaching (CELT)*, 2: 180-186. [link](#)
- Bank, C.-G., 2006: Reading and writing taught in an introductory course on plate tectonics, *J. Geosci. Ed.*, 54(1): 25-30. [pdf](#)

• teaching software

- SIGkit: Software for Introductory Geophysics Toolkit (with Sarah Kruse, Univ. of S. Florida; funding: USD 40k from MathWorks, CAD 14.7k from UofT); SERC peer-reviewed teaching activity <https://serc.carleton.edu/NAGTWorkshops/geophysics/activities/218515.html>
- Volume of oceans, and sea-level variations; SERC peer-reviewed exemplary teaching activity https://serc.carleton.edu/NAGTWorkshops/data__models/matlab15/activities/114906.html

select near-surface geophysics projects with undergraduate students (* = student author/presenter)

• archaeology

- 2018 Historical Archaeology near Dresden, ON
- *Wadsworth, W., C.-G. Bank, K. Patton, and D. Doroszenko, 2020. Forgotten Souls of the Dawn Settlement Project: A geophysical exploration of unmarked graves in Southwestern Ontario. *Historical Archaeology*, Vol 54, doi: [10.1007/s41636-020-00251-7](https://doi.org/10.1007/s41636-020-00251-7)
- 2014 Archaeological geophysics at Kathu, South Africa
- Papadimitrios, K., C.-G. Bank, S. Walker, and M. Chazan, 2019. Paleotopography of a Paleolithic landscape at Bestwood 1, South Africa, from ground-penetrating radar and magnetometry, *South African Journal of Science*, 115(1/2), Art. 4793, 7 pg., doi: [10.17159/sajs.2019/4793](https://doi.org/10.17159/sajs.2019/4793)

2012 Archaeogeophysics at Palaikastro, Crete [*Guo et al., GSA 2012]

● **forensic**

since 2012 Forensic geophysics at test site near Bolton, ON [*Edwards et al., fall AGU 2016]

*Deng, E. A., K. O. Doro, and C-G Bank, 2020. Suitability of magnetometry to detect clandestine buried firearms from a controlled field site and numerical modeling, *Forensic Science International*, 314: 110396, doi: 10.1016/j.forsciint.2020.110396

● **environmental**

since 2010 Geophysical investigations at the Deep River field site [*Stoikopoulos et al., fall AGU 2019;

*Sears et al., Joint Assembly 2015; *Graves et al., fall AGU 2013; *Meadows et al., fall AGU 2011]

● **urban**

2008 Locating the TTC subway tunnel below Queens Park [*Carter et al., AESR 2018]

2007 Remote sensing of an archaeological target in Toronto

*Modi, N., Y. *Kim, & Y. *Majumder, 2008, Ground-penetrating radar survey: the search for the foundation remnants of the first Huron Street Public School, *Journal of Undergrad. Life Sci.*, 2: 78-80. [link](#)

● **geologic**

2015 Gold and gravels in the Yukon

*Lee, Y.K., Bank, C.-G. and Laxton, S., 2017. Near-surface geophysical investigation of a gravel site near Whitehorse, Yukon. In: *Yukon Exploration and Geology 2016*, K.E. MacFarlane and L.H. Weston (eds.), Yukon Geological Survey, p. 141-148. [link](#)

2007 Remote sensing of two dikes in N Ontario

*Tudor, C., F. *McGowan, J. *Koziar, and U. *Iqbal, 2008, Magnetometrical dike hunt: a Grenvillian expedition, *Journal of Undergraduate Life Sciences*, 2: 74-76. [link](#)

2006 Surveys at Ship Rock, New Mexico (6 abstracts in [20th Keck Research Symposium 2007 volume](#))



Visiting Hutton's Section in Edinburgh 2017; research excursion to Greece 2012

Courses taught in past five years

ESS103 Geology in public issues (2020)

ESS105 Our home planet (2020)

ESS261 Earth system evolution (2015, 2017, 2018, 2020)

ESS241 Geologic structures and maps (2016, 2017 with excursion to Oman)

JGA305 Environmental and Archaeological Geophysics (2015, 2016, 2017, 2019, 2020)

ESS450 Geoph. Field Techn. (2015, 2016, 2017, 2018, 2019)

ESS490 Capstone Fieldtrip (2017 Iceland and Scotland, 2018 Scotland)

ESS104 Controversies in earth science (2019)

ESS345 Computational Geology (2015, 2017)

ESS262 Earth system processes (2017)

ESS452 Geophys. Imaging (2020)

Service

outreach: past president of the [Canadian Geoscience Education Network](#); work with high-school teachers

- Bank, C. D. Jackson, & L. Hymers, 2009: Attracting students to the Earth sciences: an example of individual and collective outreach efforts by industry, academia and secondary education, *Geoscience Canada*, 36(3): 107-111.

institutional: As Undergraduate Associate Chair (2009-2015) I initiated a revamping of our geophysics specialist programme, and facilitated the creation of a new "Earth and Environmental Systems" majors program. Since summer 2017 I have been Dean's Designate for Student Academic Integrity.