

## THE SENIOR COLLEGE MESSENGER

Issue 36: October, 2024

*This is an organ for members of Senior College to submit short articles that share news, letters to the editor, reactions to the program and anything that they feel will be of general interest. Its regular appearance will allow for an exchange of opinion of topics of interest to the members. In particular, it would be interesting to record reactions to the talks, colloquium topics, books discussed and items appearing in the Messenger.*

*Please submit contributions to the co-editors, Ed Barbeau at [barbeau@math.utoronto.ca](mailto:barbeau@math.utoronto.ca) or Mary Finlay at [booksaplenty1949@gmail.com](mailto:booksaplenty1949@gmail.com).*

### SENIOR COLLEGE RESEARCH GRANTS

Senior College has a budget of \$5000, available for research grants. Fellows and External Fellows may submit applications for small grants before November 1. For further information,

### AN ONTARIO EDUCATION IN RETROSPECT

*In the essay that follows, Peter Stokes recalls the secondary education curriculum in Ontario in the 1950s. It was probably similar to that in most North American jurisdictions, where teenagers either entered employment or one of three types of high schools: technical, commercial or the strongly academic collegiate institute. For a number of reasons, such a system is no longer viable today, but we can ask whether the present system is suitable to prepare citizens to thrive in a modern society.*

*The first question each of should ask, in the context of our disciplines, is what should be necessarily included in a modern school syllabus. While the system we were brought up in provided us with basic skills and covered a canon of literature and history, the modern world is much more complicated and citizens are asked to deal with issues that involve culture, history, science, politics and mathematics that are subtle and require a deeper understanding.*

*At the end of his essay, Peter talks about the value of continuing education. It is clear that we are facing a crisis of credentialism, where students may enter some career only after they have spent a prolonged period taking course and gathering certificates and degrees, often at the risk of sustaining a high level of debt and delaying important life decisions. Are there situations in which young people can have early experience in a productive career and receive whatever necessary qualifications on an "as-needed" basis? In particular, what does this look like for university students? Already, there are limited opportunities in some fields to obtain practical experience while studying; can this be parlayed into remunerative work?*

**Peter B. Stokes:** The most severe challenge in my educational development was Grade 13 (then called Senior Matriculation). My school (DeLa Salle) had typical Ontario secondary school curriculum which included languages (English, French, Latin), mathematics (algebra, geometry), history and geography, with four sets of in-school examinations each year. But, Grade 13 was the real hurdle; teachers prepared us exhaustively for final written provincial examinations marked centrally. Matriculation required an overall average of 60%, with no allowance for school grades.

At the time, tuition fees to the university were relatively low; it was possible for students to pay their tuition fees with earnings from summer employment. In 1957, there was only one university in Toronto and the minimum admission requirement was Grade 13 with at least 60%, although certain honours and professional programs (such as engineering) required considerably higher grades. As I recall, my own marks arrived by post in mid-August, and with the minimum needed to pass, I gained admission to the General Program in the Faculty of Arts. Over the three year General Program, my grades improved steadily as I was able to move into my preferred area of literature studies. Graduating with a Bachelor of Arts degree in 1960, I decided to continue with further study in English literature; my program required five undergraduate courses in a fourth (makeup) year and three undergraduate courses in the fifth year. Following the completion of a dissertation in 1963, I finished a Master of Arts degree and proceeded to the world of full-time work, first in the insurance industry and then, happily, in university administration.

My formation was by no means complete. Emphatically I must state that I believe in continuing and mid-career education. While engaging in administrative matters at Queen's University, I entered an in-service program (1976-78) and completed requirements for a Master of Public Administration (MPA) degree. Subsequently in 1982, I entered a part-time study program at the Ontario Institute for Studies in Education and completed an EdD program in 1990.

Perhaps this somewhat awkward educational and professional trajectory of my own working life has wider relevance. For example, I see continuing education and learning as a necessary, life-long endeavour for today's professional practitioners.

- Significant economic, social, and personal changes are inevitable and in this context general education is advantageous.
- Over the past several decades there has been an astonishing increase in the number and variety of institutions delivering advanced education, with a commensurate increase in the availability and access to diversified types of programming, especially part-time and continuing education with different modes of delivery.
- Today we also live with institutional changes in higher education as never before: the increasing prevalence of international students; new types and requirements for technical literacy; the amazing proliferation of student services to offset physical and mental disabilities; and generally intensified research initiatives.
- As a personal opinion, apprenticeship initiatives and programming in Ontario are in disarray, and pathways to professional occupations, especially for immigrants, obscure and frustrating.
- Large, ongoing challenges persist and our ever-present media will never cease their fusillade on prevailing topics such as student stress, faculty burnout, grade inflation and scandals related to international student recruitment practice.
- Meaningful realignment of the many entities and advanced education programs serving the province in preparation for an unknown future will require vision, superior planning and perseverance.

Certainly expectations on the part of prospective employers, graduates, the general public, and the Ontario government regarding the products and presumed benefits of university teaching and learning are extremely high. Unfortunately, there are no current expectations of significantly increased governmental funding to alleviate soaring costs in our diversified post-secondary system across this province.

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## IN MEMORIAM

Max Nemni (June 13, 1935 - August 29, 2024)  
 Professor of Political Science, Laval University (External Fellow)

John (Jack) T. Stevenson (July 3, 1932 - September 9, 2024)  
 Professor of Philosophy

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## CALENDAR OF COMING EVENTS

Events marked with **F** are for fellows and external fellows. Registration a few days ahead is necessary for each event. This can be done in response to a weekly email from Senior College or the Faculty Club to its members that describes the events or through the Senior College website.

*Talks: Wednesdays 10-12 (Zoom and in person at the Faculty Club)*

October 2: Ian Cusson, *Indigeneity in contemporary opera*

October 9: Ken Bartlett, *Raphael and the mystery of the frame*

October 16: Nandita Bajaj, *Connecting the dots between reproductive autonomy and environmental sustainability*

October 23: Soren Brothers, *Climate, lakes and museums*

October 30: Paul Stevens, *Robinson Crusoe and the slave trade: a treatise against adventure*

November 6: Mary Nyquist, *Early modern freedom, tyranny, and the rhetorical poser of 'slave'*

November 13: Yvonne Bombard, *Delivering precision genomic medicine*

November 20: Clifford Orwin, *The 2024 election result*

November 27: Franca Iacovetta, *Remembering Emma Goldman in Toronto*

*Colloquia: Thursdays, 2-4 pm*  
*Senior College Centre, 256 McCaul St. (masks advised)*

October 17: *The issues about introducing a universal basic income in Canada. How to pay for it and how to administer it* (Organizer: Trevor Lloyd)

November 14: *The problems of social media* (Organizer: Phil Sullivan)

*Book Club: Mondays 2-4 pm (Zoom only) (F)*

October 7: George Monbiot, *Regenesi: feeding the world without devouring the planet* (2022) Leader: Sara Shettleworth)

November 4: Jane Mayer, *Dark money: the hidden history of the billionaires behind the rise of the radical right* (2017) (Leader: John David Stewart)

December 2: Martin Puchner, *Culture: the story of us from cave-art to K Pop* (2023) (Leader: Meg Fox)

January 6: André Alexis, *Fifteen dogs* (2015) (Leader: Meg Fox)

February 3: Kenneth Miller, *The visionary scientists who unlocked the mysteries of sleep* (2023) (Leader: Daphne Maurer)

March 3: Timothy Garten Ash, *Homelands: a personal history of Europe* (2023) (Leader: David Milne)

April 7: Ursula K. Le Guin, *The dispossessed* (1974) (Leader: Molly Wills)

May 5: Emily Wilson, *The Odyssey, by Homer in the new poetic translation* (2017) (Leaders: Linda Hutcheon & Martin Revermann)

June 2: Andrew Stobo Sniderman & Douglas Sanderson (Amo Binashii), *The Valley of the Birdtail* (2022) (Leader: Janet Paterson)

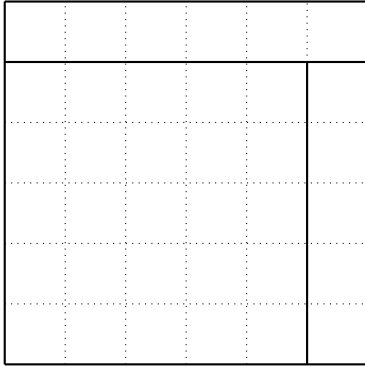
July 7: Fei-Fei Li, *The worlds I see: curiosity, exploration and discovery at the dawn of AI* (2023) (Leader: Susan Pfeiffer)

### Aftermath

Long ago, one of the natives on the remote island, Styrgo Haap, noticed that  $3^2 + 4^2 = 5^2$  and was quite bemused that one square could be written as the sum of two others. He soon came upon  $5^2 + 12^2 = 13^2$  and told the local shaman, who claimed to have received from the gods this rule of prophecy: take an odd number, square it and write the square as the sum of two consecutive integers; then the odd number along with these consecutive integers would provide another example. Thus,  $7^2 = 49 = 24 + 25$  and indeed  $7^2 + 24^2 = 25^2$ . From then on, he would live up the each celebration of the winter solstice with a new prophecy:  $9^2 + 40^2 = 41^2$ , and so forth.

As time went on, people became more confident of the shaman's prophecy, doubting little that, for example,  $23^2 + 264^2 = 265^2$ . Anyone who actually squared the numbers in question, found that the equation was satisfied; the shaman's reputation was duly enhanced. However, this did not satisfy everyone in the priestly class, who worried that when the numbers got large enough the system might fail. One of them (his name was Sam) noted that if you took the difference of two consecutive squares, you got the sum of their roots. For example  $6^2 - 5^2 = 6 + 5 = 11$ . Then you could look for consecutive integers adding to a square and work from there – a new way of formulating the original strategy.

This was still all empirical and intuitive. How can one be really sure that the difference of any two consecutive squares is always the sum of its roots? Sam thought that, by looking at a particular case, you could infer how things would work in general. He came up with this diagram to show that  $6^2 - 5^2 = 6 + 5$ .



In due course, the island was colonized by those who brought the fruits of the Enlightenment. It was then that it was realized that one could acquire certain knowledge by setting up a structure, in this case algebra, with rules and by logical reasoning, in a way that could be universally accepted across boundaries of race and culture. The shaman's method can be wrapped up in a simple verifiable algebraic equation,

$$(2n + 1)^2 + [2n(n + 1)]^2 = [2n(n + 1) + 1]^2,$$

where  $n$  is any integer whatsoever.