

The Newsletter

Volume 25 Number 3

Fall 2026



ADRP

Association of Dalhousie Retirees & Pensioners

Here For You

From the Editor

In this content packed Newsletter, let me draw your attention to:

In addition to the Committee Reports, please take notice of the Memorandum from People and Culture (formally known as HR): *Effective **October 1**, the People and Culture main office, located in Room 150, Henry Hicks Building, will transition to an **appointment-only service model**.*

Read the comprehensive article by our new Board Member Keith Taylor on AI and additional links of interest on the topic.

See spotlights on what some of our members have been doing over the summer: participating in the Great Cycle Challenge, Rug Hooking, and Curating an Exhibit on the Art of Birding.

Your contributions are always welcome. You can send your stories and photos about travel, hobbies, or unique experiences, or any comments on any newsletter topic or issue, directly to newsletter@the.adrp.ca.



MY BUCKET LIST TRIP TO PARIS FOR ROLAND GARROS

The Editorial Board

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ADRP Board Meeting Dates Wednesdays, 2:00 PM

- Oct 21, 2026
- Nov 18, 2026

ADRP General Meeting Wednesday 1 P.M.

- Dec 16, 2026

December General Meeting

December 16, 2026

Old Ashburn Golf Club

In person

Annual membership fee of \$20.00 can be paid by E-transfer to treasurer@theadrp.ca if you are not already paying by cheque or payroll deduction. Please include your contact information.

NOTE: Membership dues are not income tax deductible as the ADRP is neither a registered charity nor an employee union.

Editorial Policy: The ADRP intends to publish the newsletter every three months. We hope the newsletter will serve the following purposes: to provide pertinent information, to provide a forum for the free exchange of views on issues relevant to our membership, and to serve as a documentary record of matters relating to the ADRP. The Editorial Board, under the ultimate direction of the ADRP Board, takes responsibility for the contents of the newsletter. Signed contributions will take the form of short articles and letters to the editor; these will normally represent the opinions of the author, and need not represent the views of the ADRP. Anonymous material will not be considered for publication. The Editorial Board retains the right to edit or reject contributed material and to elicit similar and opposing views surrounding any issue raised.

Newsletter Submission and Distribution Dates

Submissions Deadline

Distribution Date

November 24, 2026

Dec 01 2026

MEMBERS of the 2026-2027 ADRP BOARD

OFFICE	NAME	PAST POSITION
President	Heather Schellinck	Sr. Instructor, Psychology and Neurosciences
Immediate Past-President		
1st Vice President	David Tindall	Associate Professor, Physics
2nd Vice President	Deborah Tamlyn	Associate Professor, Nursing
Secretary	Ann Barrett	University Librarian
Treasurer	Linda MacNutt	Admin Asst, Faculty of Medicine
ADRP Directors-at-Large		
	Susan Hutchinson	Associate Professor, School of Health and Human Performance.
	Kevork Peltekian	Professor, Medicine
	Keith Taylor	Dean of the Faculty of Science, Associate Vice-President Academic.
COMMITTEES		
Benefits	Jenny White	Manager, Payroll Services
Membership	Heather Schellinck	Sr. Instructor, Psychology and Neuroscience
Communications & Newsletter Editor	Marilyn Klein	Technologist, Instructional Resources, Dentistry
Pension Advisory	Randy Barkhouse	Director, Computer Services
Social Director	Susan Holmes	Professor, College of Continuing Education

The ADRP Board of Directors meet in person or via Zoom monthly.

Minutes of Board of Directors' meetings are available <https://theadrp.ca/wp/minutes>

MEMORANDUM

*“Effective **October 1**, the People and Culture main office, located in Room 150, Henry Hicks Building, will transition to an **appointment-only service model**. Walk-in service will no longer be available. This includes the Retirement Services and Employee Benefits units.*

This change will allow People and Culture to provide more focused and effective support while maintaining privacy and confidentiality for employees and clients.

In order to schedule an appointment, the following People and Culture units should be contacted by email:

- **Employee Benefits:** benefits@dal.ca
- **Retirement Services:** pensions@dal.ca
- **Employee Health, Accommodation & Benefits:** ehab@dal.ca
- **All other People and Culture inquiries:** hr@dal.ca

*A **secured, locked drop box** will be available for employees and retirees who need to drop off forms. The drop box will be located at the front door of Room 150*

***Same-day in-person appointments** will also be available, as needed, for emergency and urgent requests.*

*A **doorbell and intercom system** will be available to help ensure service remains accessible and efficient.”*

The ADRP is getting organized for another busy year.

I am pleased to share some very positive news from our April AGM. Our Nominating Committee welcomed five new members to the Board. Ann Barrett has taken on the role of Secretary, while Deborah Tamlyn has agreed to serve as 2nd Vice-President. Susan Hutchinson, Kevork Peltikian and Keith Taylor have become Directors-at-Large. We are very grateful to you and all of our board members for volunteering. Your participation helps ensure the continued success of the ADRP.

Our summer social activities were also popular, with excellent participation from our members. The boat trip to Pearl Island and the summer social at Point Pleasant Park were particular highlights. We always enjoy hearing about the adventures and activities of our members, so please consider sharing your stories and photos with us for a future newsletter.

Our partnership with the Seniors' College Association of Nova Scotia continues. Up to ten ADRP members may access SCANS online courses at no cost during each of the winter and spring terms. We encourage members to take advantage of this opportunity. You can e-mail president@theadrp.ca (Note the spaces to prevent a bot finding and using the e-mail)

All told the future looks bright. I welcome any suggestions for activities and events that would interest our members.

There are approximately 885 members. 853 of these members have their dues deducted by payroll. Thirty-two of the remainder have paid by cheque or e-transfer. We have three honorary members, Michael Bradford, Sid Sodhi, and Colin Studdart

**AUDITED FINANCIAL STATEMENTS FOR THE YEAR ENDED
DECEMBER 31, 2025**

ADRP STATEMENT OF REVENUE & EXPENSE Jan 1, 2025 – Dec 31, 2025

REVENUE	Budget 2025	Actual 2025	Budget 2026
Dues	\$16,800.00	\$18,314.98	\$17,500.00
Interest	\$2,450.00	\$2,378.68	\$2,450.00
CURAC Rebate	\$60.00	\$171.90	\$150.00
Travel Grant	<u>\$1,200.00</u>	<u>\$2,400.00</u>	<u>\$1,200.00</u>
	<u>\$20,510.00</u>	<u>\$23,265.56</u>	<u>\$21,300.00</u>
EXPENDITURES	Budget 2025	Actual 2025	
Telephone	\$160.00	\$158.00	
Administrative Costs	\$1,500.00	\$595.13	
Treasurer Honorarium	\$0.00	\$0.00	
Insurance Directors & Officers + General Liability	\$1,137.00	\$1,387.00	
CURAC Dues	\$300.00	\$300.00	
CURAC Conference	\$8,500.00	\$5,736.99	
Social Committee	\$6,000.00	\$6,958.54	
25 th ADRP Anniversary Celebration	\$1,000.00	\$29.99	
GM & AGM – Room Rentals	\$2,500.00	\$2,670.61	
Communication Committee	\$3,000.00	\$1,409.41	
Bursary Fund	\$2,000.00	\$0.00	
SCANS Public Lecture	\$500.00	\$4,500.00	
SCANS course with Susan Hutchinson	\$1,400.00	\$925.14	
Other Donations	\$100.00	\$5,100.00	
TOTAL	<u>\$28,097.00</u>	<u>\$29,770.81</u>	
SURPLUS	<u>-\$7,587.00</u>	<u>-\$6,505.25</u>	
To Contingency Fund	<u>\$0.00</u>	<u>-\$5,000.00</u>	
To Accumulated Surplus	<u>-\$7,587.00</u>	<u>-\$1,505.25</u>	

ADRP BALANCE SHEET AS OF DECEMBER 31 2025

ASSETS	Dec 31 2025
CUA Chequing Account 10-3	\$1,739.00
CUA Savings Account 20-3	\$3.92
CUA Savings Account 21-3	\$1,811.43
GIC's with CUA	\$57,035.49
Dalhousie Account	\$482.67
SCANS Account	<u>\$1.00</u>
TOTAL	<u>\$61,073.51</u>

LIABILITIES	
Accounts Payable & Accruals	-\$4,158.78
Visa Balance	-\$2.65
Contingency Fund	\$45,333.71
Accumulated Surplus	\$19,901.23
TOTAL	<u>\$61,073.51</u>

NOTES

GIC: \$12,541.47@5% matures 11/27/2027

GIC: \$ 9,400.50@4.45% matures 05/27/2026

GIC: \$22,858.80@3.3% matures 12/19/2026

GIC: \$12,234.72@3.5% matures 11/17/2026

GIC: \$12,118.96@3.95% cashed out 05/17/2025 and deposited to CUA Chequing Account

CURAC conference was in Montreal

CURAC Travel Expenses paid for Susan Holmes, Ed Leach, Robin Whyte and Sue Hutchison

Donation to DFA for strike support was deducted from the Contingency Fund

Increased donation to SCANS for audiovisual support

Co-Sponsorship of Susan Hutchison's SCANS Course free to ADRP members

Insurance includes \$200 payment to Volunteer Canada

VISA had been overpaid in 2024 so started with a positive balance of \$116.69

Members of the Dalhousie Pension Plan will receive two important documents in the mail before the end of October. ***The first is the audit form which members must sign and return to the Pension Office in the included return envelope. This form acknowledges that one is entitled to their pension continuing.***

The second document is the first individual annual pension report, a new report required by provincial legislation. No action is required on that report, but if one has questions these can be directed as indicated in the report.

The asset returns shown below for the two funds of the Dalhousie Pension Plan revealed a remarkable and favorable turnaround for the final three months of the plan year ending June 30, 2026.

***Dalhousie Pension Trust Fund
Dalhousie Retirees' Trust Fund***

Interim performance – July 1, 2025 to June 30, 2026

Fund	July 1, 2025 to June 30, 2026	1 Year Net Return	3 Year Net Return
PTF	10.69%	10.17%	9.28%
RTF	11.26%	10.76%	9.92%
Consolidated Pension	10.99%		
TSX	32.89%		
S&P 500 - \$CAD	27.20%		
S&P 500 - \$US	22.33%		
EAFE - \$CAD	25.01%		
EAFE – local currency	24.93%		
FTSE Bond Universe	3.46%		
CPI	2.80%		

Market Value (millions)	PTF	RTF	Consolidated
June 30, 2025	\$969.6	\$1,065.4	\$2,035.0
June 30, 2026	\$1,045.9	\$1,141.3	\$2,187.2

The two most relevant number for pensioners in the above table are the 3-year net return of 9.92% for the Retirees Trust Fund (RTF), and the Consumer Price Index (CPI) increase of 2.8%.

The 3-year return of 9.92% means that automatic indexation equal to the 1-year CPI increase will be applied to eligible pensions effective January 2027. Eligibility for indexation is given in Rule 9c of the Pension Plan text.

Such indexing will take effect on 1 January of each year, excluding the 1 January following the date of retirement of a Member. The amount of indexing applied to a Member's pension on the first occasion shall be determined by applying the appropriate percentage from the following table to the rate of adjustment described in the previous paragraph.

Month of Retirement	Percentage to be Applied to Rate of Adjustment	Month of Retirement	Percentage to be Applied to Rate of Adjustment
January	150.00%	July	100.00%
February	141.67%	August	91.67%
March	133.33%	September	83.33%
April	125.00%	October	75.00%
May	116.67%	November	66.67%
June	108.33%	December	58.33%

If one's pension commenced in 2026 no indexation will be awarded January 1, 2027. If one's pension commenced in 2025 it will be adjusted according to the above table. Pensions in pay prior to January 1, 2025 will be adjusted upwards by 2.8%.

The 2.8% of automatic indexation added \$25.6 million to the liabilities of the RTF. The surplus of RTF assets over liabilities as measured by the actuarial valuation at June 30, 2025 was just over \$39 million. The estimated surplus at June 30, 2026 had increased to \$80 million, after accounting for the \$25.6 million cost of the automatic indexation. Both surplus amounts are relevant to the possibility of some catch-up on the 10.3% of missing indexation for those who were most affected

The RTF trustees at their discretion may use up to half of any RTF surplus at the most recent actuarial valuation to award catch-up indexation. The June 30, 2025 RTF surplus thus provides about \$19.5 million for that purpose. Each 1% of catch-up would use about \$7 million of the surplus. Whether the RTF trustees do award any catch-up is expected to be known by the end

of November. Important factors in that decision, besides looking back at the amount of actuarial surplus, and the subsequent estimated surplus, is looking forward at the investment outlook, both for equities and fixed income. This conservative approach is intended to reduce the possibility of the RTF falling into a deficit which must be amortized by payments from the Dalhousie operating budget.

Eligibility for any catch-up indexation is limited to those whose pensions were in pay at the time any missing indexation occurred. Most of the outstanding amount accrued in 2023 so if you were drawing a pension from Dalhousie in that year any catch-up awarded should be reflected in your 2027 pension. Given the small amount of surplus available any award is unlikely to substantially decrease the 10.3% missing.

Further positive information for Dalhousie pensioners was provided by the university actuary when describing the new mortality tables to be used in future valuations. On average, we're living longer! The downside to that is the increased cost of paying our pensions for longer. For the next actuarial valuation, effective no later than June 30, 2028, liabilities will be about 3% more, \$30 million plus, than they were under the previous mortality tables. These tables are revised about every ten years by the Canadian Institute of Actuaries.

One further topic under consideration by the Pension Advisory Committee may be relevant to a few pensioners at present, but could affect more in future. The change to the Dalhousie Plan when Enhanced CPP was introduced has been found to possibly and negatively affect the pension paid to anyone on LTD after the change was made. Whether that change can or must be corrected is an open question before the PAC and the employee groups. The university has obtained a legal opinion that no further change is required. Those who recall the 2006 legal opinion that was overturned by a grievance may not believe that the recent opinion is the final resolution.

To end this report, a notice has been received from Pension Services that is relevant to any pensioner who may wish an in-person appointment with that unit..

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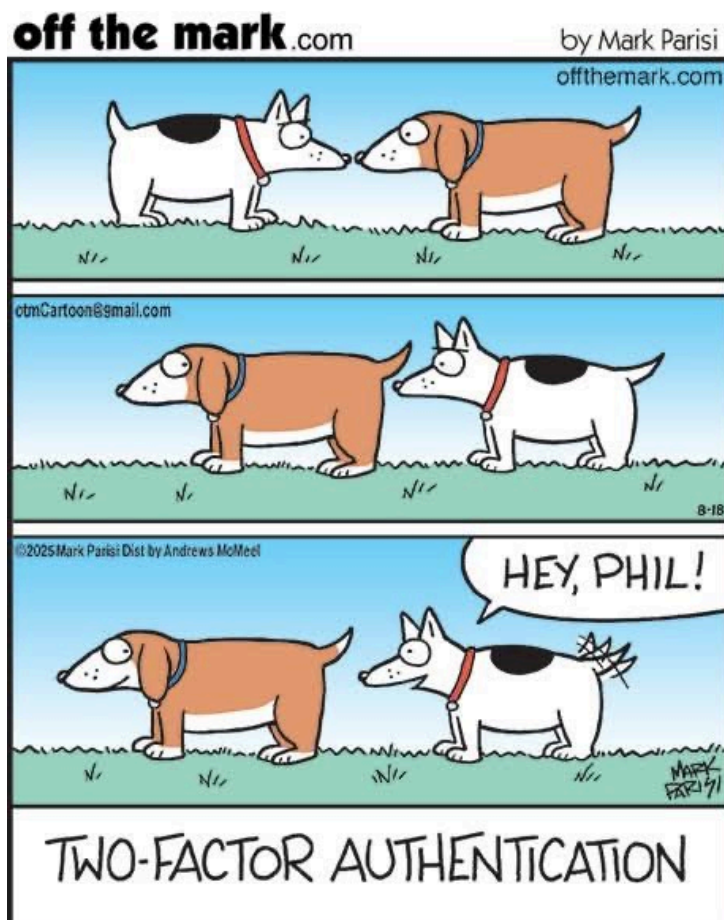
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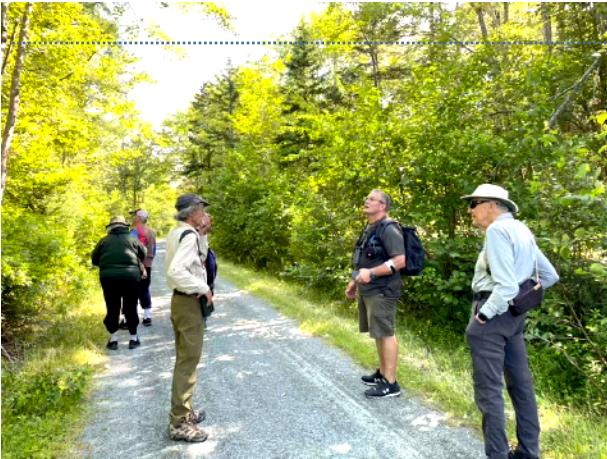
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- **Employee Health, Accommodation & Benefits:** ehab@dal.ca
- **All other People and Culture inquiries:** hr@dal.ca

While I was on vacation I was alerted to a hack to our web presence: an unauthorized entity (from the US) logged onto our CPanel site (an application we use to generate aliases email addresses and a few other functions for our Word Press site, which is hosted by Canadian Web Hosting. I immediately changed the password: “No new suspicious successful cPanel logins appeared after our password was reset in the logs reviewed. A later login attempt failed. Since then a full hosting-account malware scan showed no problems. We were required to enable two-factor authentication which ironically was not available to us at that time but has since been set up; so has the the ability to have a Team rather than a single person with administrative authority. I remind you that this spring it was discovered that our dearly departed former, President Phil O’Hara, was still listed as the owner of our site!

We are in need of additional volunteers as backup personnel hopefully with some IT internet/ expertise as backup personal or willingness to be trained. We are an organization of volunteers and all our members might consider stepping up to our various committees.





Birding walk on Shearwater Flyer Trail with Guide Marty Finch on June 3. We followed the walk with lunch at Jamieson's Pub.

In attendance were Stephanie Kaiser, Jean Burnell, Mary Brooks, Mitch Brooks, Ingrid Sketris, Wilma Clancy, Rita Caldwell, David Caldwell, Susan Holmes and Marty Finch.



Silver's Garden Tour, Prospect Bay, was June 11. We had lunch before at Watermark Restaurant (formerly Rhubarb.)

In attendance were Sherry Carmont, Christopher Harbinger, wife and son, Victor and Charlene Day, Christine Beauchamp, Elizabeth Welsh, David Lewis and Susan Holmes.



Flying Apron Cooking Class September 2026



Our cooking and organizational skills were challenged to make, and then consume, the following menu:

Cream of Butternut Squash Soup with Sour Cream and Paprika Oil

Sautéed Sustainable Blue Salmon

Barley Risotto

Roasted Seasonal Vegetables

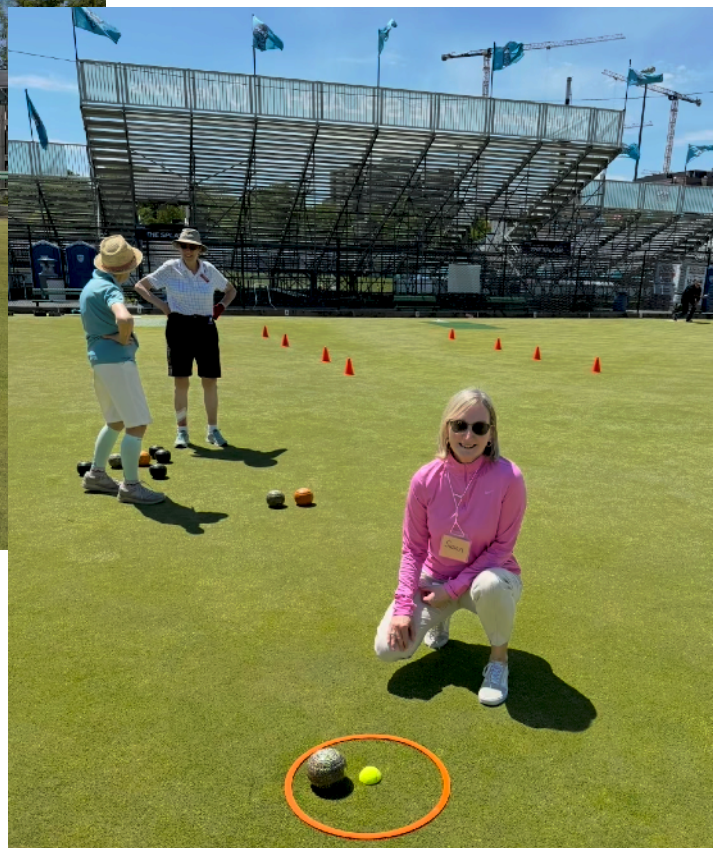
Ginger Apple Tart

Since the class I have made the Squash Soup again. It is delicious!

MITCH AND MARY BROOKS, STEPHANIE KAISER, SUSAN HOLMES, ROBIN AND JENNIFER WHYTE. THIS EVENT WAS ORGANIZED AND HOSTED BY MARY BROOKS.

Intro to Lawn Bowling

10 people signed up but it got rescheduled due to inclement weather. Only three of us were available for the alternate date.



SHEILA BANKS, CHRIS MOORE, INSTRUCTOR HILARY JARVIS AND SUSAN HOLMES ON A BEAUTIFUL ALTERNATE DAY.

Annual ice cream social & Shakespeare By The Sea - August 11

What a great turnout on a beautiful August evening for a rather serious performance of Julius Caesar. Thirty-two retirees, partners and friends enjoyed the evening, including several new faces.

Thanks to those who offered assistance in transporting ice cream and supplies to the park.

A good time was had by all.

We hope to see YOU there next August.



**Are you planning a hike or going to an event that could become an
ADRP social event? It's fun and easy to do.**

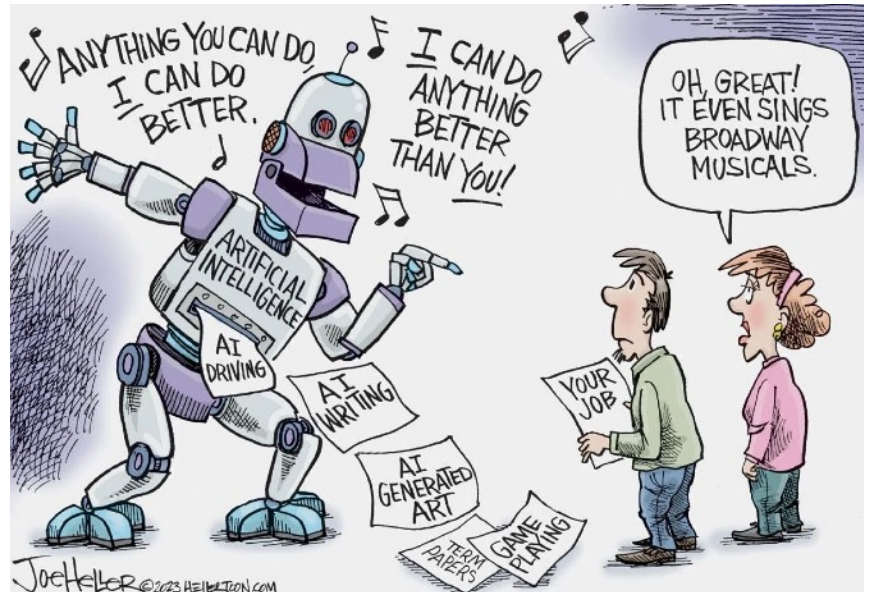
I am travelling lots these days so assistance from others to think of events and act as host would be most appreciated.

Susan Holmes

Socials@theadrp.ca

902 402 9477 text

In this note, I will discuss some of what has happened in the relationship between Artificial Intelligence (AI) and mathematics. By looking at the relationship with mathematics, I hope to convey the dramatic rate of increase in artificial thinking power that is taking place. I start with some of the history of AI, partly to note that Canadian scientists are responsible for a significant amount of the progress, and follow with a brief overview of how AI models became a product. I then turn to the impact AI is having on creativity before focusing on the stunning growth of mathematics ability in these thinking machines.



With permission: joe@hellertoon.com

History: The core components of an AI model, such as ChatGPT or Claude, are Artificial Neural Networks (ANNs), whose structure is inspired by the network of synapses connecting neurons in a living brain. In fact, Donald Hebb, a Dalhousie graduate raised in Chester, Nova Scotia, laid out the basic principles of how the connecting synapses in a brain strengthen during learning in his 1949 book titled *The Organization of Behavior*. The early designers of ANNs adapted Hebb's principles to the methods of training an ANN. Without introducing symbols and formulas, let me just say that an ANN is an arrangement of nodes (the neurons) and numerical weights on edges between nodes (synapses). Some nodes are inputs and some outputs; sometimes with several hidden layers between the input and output. The word deep in Deep Learning refers to these multiple layers. Training occurs as numbers at the input nodes are combined using the current weights to produce values at the output nodes, these outputs are compared to ideal targets, and a mathematical algorithm adjusts the weights. The adjustment algorithm is critical. Geoffrey Hinton (University of Toronto) adapted mathematical tools from statistical mechanics to vastly improve the efficiency of adjusting the weights. For this, and other, contributions to AI, he received the 2024 Nobel Prize in Physics jointly with John Hopfield.

The contributions of Hinton, Hopfield, and others in the late 1980s resulted in ANNs becoming capable enough to be applied to all kinds of specialized tasks from 1990 onwards. When a handwritten cheque is inserted into an ATM and correctly read, this is an example of an ANN trained on a huge set of samples of handwriting and thus learning how to read. In general, ANNs became good at pattern recognition. In the decade following 2000, the most impactful research

into ANNs took place at two Canadian research centers. One was headed by Hinton at the University of Toronto and the other by Yoshua Bengio at the Université de Montréal. I note that Bengio's papers have been cited more than a million times, according to Google Scholar, and I think that he is the most highly cited scientist in any discipline. Hinton is not far behind in citations. Bengio and Hinton were joined by Yann LeCun of New York University in publishing an excellent survey of the state of the art in a 2015 article in *Nature* with the title "Deep Learning".

AI Companies Arise: DeepMind was founded in London, England, in 2010 to develop deep learning models with an initial focus on learning how to play certain human games as a proof-of-concept that human level intelligence might be possible. By late 2017, DeepMind had a model called AlphaGo Zero, which was given only the rules of games such as chess, or the much more computationally complex game Go, and could learn to play beyond the grand master level in a few hours just by playing millions of games against itself. DeepMind then turned to the problem of predicting protein folding and had significant success with a model called AlphaFold. The principals in the development of AlphaFold, Demis Hassabis and John Jumper, received the 2024 Nobel Prize in Chemistry for this contribution to understanding protein structures. Google DeepMind is the source of the now commercially available AI model called Gemini.

Also, outside the Academy, a nonprofit company called OpenAI was founded in 2015 in California with funding from Elon Musk, Sam Altman, and several other wealthy members of the technology sector and with the mission to develop Artificial General Intelligence (AGI) for the benefit of all humanity. Both Google DeepMind and OpenAI made major improvements in the architecture around coordinating many ANNs and the concept of a Large Language Model (LLM) emerged. In November, 2022, a commercial LLM called ChatGPT was released by OpenAI. It is trained on curated, but very large, selections of written language and is generative in the sense that it can generate coherent meaningful content when prompted by the user. It can be configured for tasks such as generating computer code and it does this very well. ChatGPT had an explosive impact with over 100 million users signed up in less than two months. Anthropic released Claude in March of 2023. Other publicly available models to quickly follow were Gemini from Google, Grok from Xai and DeepSeek out of China. Each of the companies also have proprietary models for research purposes that are generally more capable than what you or I can access.

All the AI models are under continual improvement with a rapid turnover via updates. Each new version must be trained, which is computationally demanding, and each of the billions of prompts by users trigger computations that can also be demanding of computer time and data storage. Hence, we have large data centers being built seemingly anywhere where there is space and a cheap source of energy.

Creativity: Perhaps the most cherished trait for humans is creativity whether it is in the arts, blue- or white-collar professions, or the sciences. In the last four years, the unique humanity of creativity has come under question. With a subscription to any of the leading AI models, anyone

can use the model to generate a piece of music, a painting, or an essay that entertains or serves some purpose. Starting with a few inarticulate prompts, you can generate a polished speech or news release. Writing polished prose used to be a strictly human task and often the entry point into a rewarding career. Musicians often supplement their income by creating catchy jingles - this sideline could disappear. Sometimes we recognize artificial output and call it AI slop, but it is increasingly difficult to discern whether a machine or human created the content we are reading or viewing.

Writing computer code is a creative task with a twist, to be worthwhile, the code must compile and the resulting piece of software must do what it was meant to do. AI models can now create working software in response to appropriate prompts. Within the AI model, agents are set up with different roles. Some interpret the prompts from the user and set up a plan where the task is broken into subtasks. Other agents will write code for these subtasks, while yet other agents are designed to rigorously check that the newly created code achieves the goal of the subtask. And so on until a full product is made available to the user. This concept of rigorously checking the correctness of the code adapts well to mathematics.

Mathematics is mostly about building theoretical structures based on rules of logic. Often, there is a natural phenomenon that needs illumination and some mathematical theory is available, or needs to be developed, to provide that illumination. A good recent example is the rise of the science of genomics for which new kinds of probability theory are being developed. Long ago, the theory of calculus was created to describe dynamic change in the natural world. A subfield of calculus is the theory of partial differential equations (PDEs), which will come up later. For the most part, a student learns a theory by solving problems designed to force the use of that theory. Besides these pedagogical problems, there are also questions that arise during the development of a theory that do not have a solution, even by the expert developing the theory. We call these open problems and there are tons of them. In fact, each active research mathematician at every university in the world has a list of problems she, he, or they would like to solve for the advancement of the theories in their areas of interest. Solutions come through a combination of creativity and rigorous checking of details. Sometimes dozens or even hundreds of intermediate facts must be established for the solution of deeper questions.

AI Versus Math Problems: Four years ago, the AI models were not very good at mathematics, often giving laughable answers to simple word problems, so math ability was proposed as a way of benchmarking AI's march towards general intelligence. In early 2023, LLMs like Claude or ChatGPT could perform like a better than average high school student, but by the end of that year they would be top of the class. Google DeepMind developed two specialized models for mathematics, AlphaGeometry and AlphaProof, and tried them on the International Math Olympiad (IMO) in July of 2024. Each model solved 4 out of 6 problems, considered an outstanding performance at the time. In July, 2025, both Google and Open AI entered general

purpose LLMs and both solved 5 of the 6 problems correctly for a score of 35 out of 42. Note that just five human competitors, including Warren Bei of Canada, scored 42 out of 42.

By the beginning of 2026, ChatGPT, Claude, Gemini, and others that are available to anyone at a \$20/month subscription (or \$250/month if you want access to more power and compute time) could tackle serious open problems when prompted in the right way. Some examples that shocked me:

- February 2026: Gemini looked at the unsolved Erdős problems (<https://www.erdosproblems.com/>) and solved four of them.
- May, 2026: An internal model of Open AI disproved the unit distance problem, one of the more famous of the Erdős problems.
- July, 2026: Claude produced a counter example to the Jacobian conjecture. I would place this in a class deeper than the unit distance problem.
 - Up to here, AI is mostly finding counter examples; in a sense these are negative results.
- July, 2026: ChatGPT proved Crouzeix's conjecture. This is a positive result of something useful in linear algebra and operator theory. Getting close to home for me as it is a problem that was worked on by capable mathematicians in my general area of interest.
- August, 2026: An unreleased version of Claude proved that at least 67% (up from 41.6%) of the nontrivial zeros of the Riemann zeta function are on the critical line. The famous Riemann Hypothesis is that all the nontrivial zeros are on the critical line. Now this is something that some of the very best minds studied for over 150 years.

Any of the last three achievements, if done by a human, would endow that person with an international reputation. Proving the Riemann Hypothesis is one of the seven Millennium Prize Problems, which were picked in 2000 as the most important open problems in mathematics at that time, in the opinion of the committee that selected them. The above-mentioned major advance by Claude is still far from a solution to the Riemann Hypothesis.

Another of the seven Millennium problems concerns PDEs. The Navier-Stokes equations model how a fluid moves and solutions can be approximated with numerical methods and that is enough for most applications. The Millennium problem asks for a rigorous proof that solutions to the equations remain smooth for all time or an example of a solution that blows up in finite time under application of a smooth eternal force. (I have over simplified here.) On September 8, 2026, OpenAI announced that an internal model of ChatGPT found a smooth force where the solution blows up in finite time, thus solving the Navier-Stokes problem as articulated in the Millennium Prize set. They said their model set up 10,000 “agents” that worked for 88 hours, an

enormous amount of compute time that cost more than 10 million dollars. There is controversy around this breakthrough. A team of humans made major advances in recent months and many feel that it was bad form for OpenAI to throw massive resources, building on the work of those humans, to race to a solution.

This is where I was going to stop listing math results by AI. But yesterday, October 6, OpenAI posted 722 papers on the internet (<https://github.com/openai/math/tree/main/preprints>). These cover a wide selection of areas of mathematics and, looking at the titles, it seems that advances are made on many important problems. Indeed, one of the papers claims to construct a counterexample to something called the Kadison-Kaplansky Conjecture. This is something I worked on early in my career. The paper is 73 pages of dense mathematics, and I may not live long enough to work my way through it.

I don't think the word unprecedented comes close to conveying what a change has occurred in the past year in the nature and potential for mathematics research. How do we train PhD students now when a typical problem we might give as a thesis project can be solved in an hour by an AI model? There is no evidence yet that AI models can envision and develop new theories, but it is clear that our best currently active mathematicians will be able to push forward on their research programs at a much faster pace with the assistance of AI and this must be a good thing. But I go back to PhD students. How do they grow in the maturity of their thinking and vision without the experience of struggling with a hard and deep problem, followed by ultimate success?

Another issue is the disruption in our methods for evaluating research advances through peer review. As the production of papers by AI, or with the assistance of AI, accelerates, it is becoming impossible to get them refereed by experts at a matching pace. We could lose beautiful and important results in a sea of AI math, some of which may be slop.

So, within a couple of years, AI models went from being poor students, to exceptional high school students, and then to being as good as any human at solving math problems. Will they ever have the vision to propose and develop important new theories on their own? I think I hope not.

Generative AI explained in 2 minutes Contributed by Jen Schellinck

<https://www.youtube.com/watch?v=rwF-X5STYks>

Artificial intelligence explained in 2 minutes: What exactly is AI?

<https://www.youtube.com/watch?v=UdE-W30oOXo>

AI Simplified: 6 Concepts You Need to Know About Modern AI

<https://www.youtube.com/watch?v=mUw27wG7uFA&t=327s>

One of the more instructive cited a professor at the University of Montreal, co-winner of the 2018 Turing award, submitted by Randy Barkhouse

<https://www.bnnbloomberg.ca/business/artificial-intelligence/2026/09/16/were-losing-control-canadian-ai-pioneer-yoshua-bengio-warns/>

What Did You Do this Summer?

Kudos to Bob Loney who accepted [the Great Cycle Challenge](#) and reached his goal to raise funds in support of the SickKids Foundation, helping them to continue developing treatments and find a cure for childhood cancer. He finished 1st in the province!

Well Done Bob!



BOB LONEY		
\$22,786 Raised	\$20,000 Goal	\$0 To Reach Goal
8th In The Country	1st In my Province	1st In My Team
559 km Ridden	400 km Goal	0 km Remaining

A photograph of Bob Loney lying on his back in tall grass, smiling. He is wearing a red t-shirt with a cartoon character and a sign that says "KICKING CANCER'S BUTT!". He is also wearing a black helmet and green shorts.

End of Summer Post by a New Retiree August 31, 2026

Kimberly Haslam
August 31 · 🌳

My former colleagues returning to work
ME - busily hooking
This is the life for me. Sorry for being a retired bitch.



Any interest in our community in hand crafts? Let me know if you would like to participate in any organized meetups newsletter@theadrp.ca

From the IWK: We need finger puppets!

If you are interested in creating finger puppets and need patterns, please reach out to randi.turner@iwk.nshealth.ca. She will be happy to assist you and provide patterns.

Please keep finger puppets googly-eye, sequin, and gem-free. We want them to be safe, simple, and ready for little hands to enjoy!

Knitted Knockers are special handmade breast prostheses for women who have undergone mastectomies or other procedures to the breast.

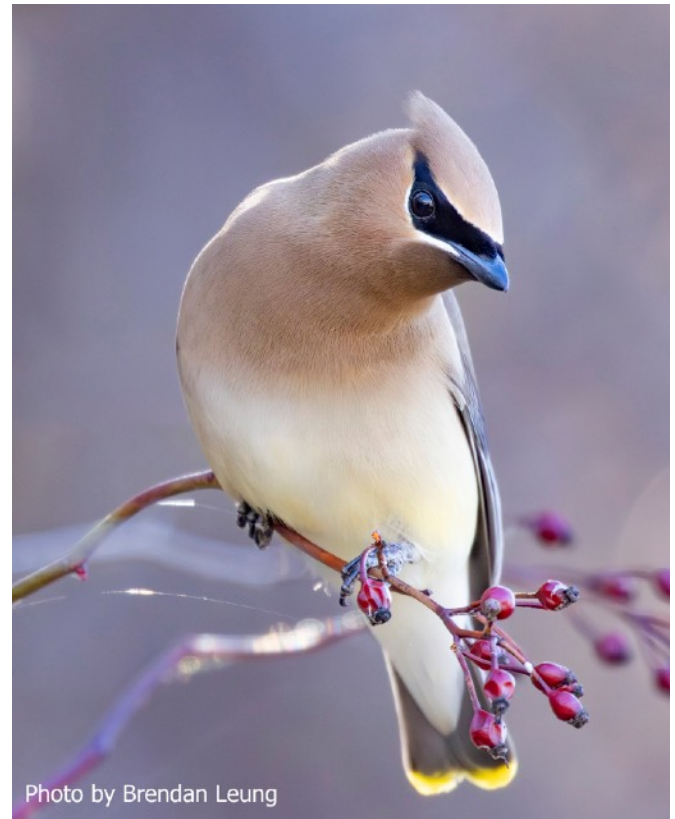
These soft comfortable lightweight prostheses are available for FREE ([request yours here](#)).

They are knit with love by our wonderful volunteers. <https://knittedknockerscanada.com/>

Patterns and video tutorials are available [here](#)

In the spirit of sharing our events in retirement I will mention that I organized and curated a show that will be exhibited at the NS Museum of Natural History that I call, "The Art of Birding". I am a birder and wildlife photographer and am always looking for venues to share my findings, so I invited other birders to join me through a message in the Nova Scotia Bird Society Facebook page. When we secured space in the Natural History Museum I expanded beyond framed photographs to include original art; paintings, needle felting and carving representations of birds. I also planned a number of exhibits to engage children.

"The Art of Birding" opened at the NS Natural History Museum (Summer Street in Halifax), on September 26. The exhibit includes photographs, paintings, needle felting and carving contributions by 21 birders and artists. There will also be activities for children to engage in. Topic-specific workshops by our artists are planned as well. The exhibit is included in Nocturne (with artists onsite) and will run to the end of January 2027, possibly into February. Look for notices from the Museum for more details.



Opportunity from the Seniors' College Association of Nova Scotia (SCANS)

In appreciation of ADRP's financial contribution to its AV equipment, SCANS is offering **online access** to one of its courses to up to 10 ADRP members in each of its 3 terms in the 2026-2027 academic year. The first term will start in October 2026 (Fall Term) and be followed by Winter and Spring Terms (exact dates and times for all to be announced at a later date). Some things to know:

- SCANS is making this available only to ADRP members who have never been a SCANS member
- This offer is available for only one course and one term per person
- This opportunity is for online attendance only at either an online or hybrid course
- Each course generally runs for 2 hours, once weekly, for 6 weeks
- Courses are usually announced on the [SCANS website](#) about 4 weeks before the Term starts
- ADRP has a page on its website for [SCANS information](#), including when Terms start, and for the duration of this opportunity will remind members of Term starts in an ADRP Bulletin.

ADRP is administering this offer to its members. You may apply by contacting President@theadrp.ca, including the following information:

- Your name, telephone number, and the email address to be contacted at,
- The Term that you would like to attend a course,
- Attestation that you are not and have never been a SCANS member, and
- Name of the course if known when you apply. Be sure to send the name of the course as soon as you know, if it was not known at the time you applied.

It is essential that all this information be received by ADRP at least 1 week before registration closes for the selected Term. ADRP will forward the information to SCANS, which will send you the link for the course.

ADRP realizes that you may want to reserve your spot before the courses are announced. We cannot guarantee that there will be a course to your liking for that Term (but find it hard to imagine that happening) and may be unable to accommodate Term changes. If you wish to see the course offerings before signing up, that is acceptable, although we will not necessarily be able to guarantee that there are still spots. However, our goal is that as many ADRP members as possible take advantage of this opportunity and we will do our best to make this work!

CURAC Conference Hosted by the McMaster University Retirees Association

(MURA)

May 19-21, 2027

Navigating Extraordinary Times

Program

Wednesday, May 19, 2027

CURAC Board Meeting

CURAC Annual General Meeting

Welcome cocktails in McMaster's Alumni Memorial Hall.

Thursday, May 20, 2027

There will be two sessions Thursday morning with speakers covering the pros and cons of AI and addressing mental health in these extraordinary times. The two Thursday afternoon sessions will be on energy transition and democracy.

The presentations will be followed by the CURAC Awards Banquet in the evening, showcasing the fabulous view from the 10th floor of McMaster's newest building, the McLean Centre for Collaborative Learning.

Friday, May 21, 2027

Friday morning: The discussion will center around the McMaster Institute for Research on Aging (MIRA) including the McMaster Optimal Aging Portal which is McMaster's flagship knowledge translation and public engagement platform. The Canadian Longitudinal Study on Aging (CLSA) also falls under MIRA and is the largest and most comprehensive national longitudinal research platform of its kind in Canada. The Labarge Centre for mobility in Aging also falls under MIRA. Topics could include dementia, frailty, aging & mobility, and much more.

Speakers include renowned research scientists Dr. Alison Sekuler, Dr. Jonathan Stokes, Dr. Dave Novog, Dr. Anthony Levinson, Dr. Parminder Raina and Dr. Stuart Phillips along with corporate leader and philanthropist Susan Cunningham. A couple other speakers' availability is still pending.

Venue

The venue for the CURAC Board and AGM meetings on Wednesday, May 19th are to be determined. Thursday and Friday, May 20 and 21 will be held in the McLean Centre.

Accommodations

A member of the local organizing committee (LOC) is working on arrangements with residences and hotels at the university.

Registration

The [Fourwaves](#) software system for registration has been adapted to McMaster. Fourwaves is a Canadian company that was started in 2012 by four PhD students in bioinformatics. They created a website to simplify the logistics of a symposium and give attendees easier access to its content.

Multimedia

[CCR Solutions](#) will be providing necessary equipment and staff to provide a hybrid conference with simultaneous translation. Recordings of the presentations will be posted on the CURAC website after the conference. CCR Solutions provided excellent services at two conferences hosted by the McGill University Retiree Association: 2021 (virtual) and 2025 (hybrid) and in 2022(virtual) co-hosted by University of British Columbia, Simon Fraser University, University of Victoria.

Sponsorship

CURAC Affinity Sponsors: Ron Champion, Chair of the CURAC Affinity Marketing Committee, is in touch with the sponsors who have agreements with CURAC to offer financial assistance for conferences.

Local sponsors: the MURA (LOC) is in the process of soliciting additional sponsorship.

Communication

A conference website is being designed by a member of the LOC and a Save the Date message will be sent to MURA members this month.

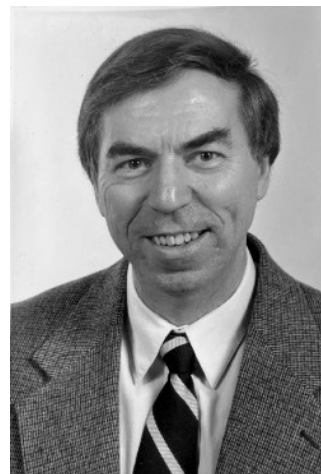
Information provided by Jan Nicholson, Chair, MURA Conference Committee (nichojr@mcmaster.ca) and Kate Maguire, McGill University Retiree Association Communications Coordinator, and Chair, CURAC Conference Committee (kate.maguire@mcgill.ca)

In Memoria

Please email any additions/omissions to newsletter@theadrp.ca



Susan Kirkland



Michael W. Gray



Robert Verber Fraser Jr.



Richard Arvid Singer



Mort Fels



Aidan Stokes



Robert (Ian) McAllister