SMITH ENGINEERING
Queen's University

Electrical and Computer Engineering

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Tenure-Track/Tenured Faculty Positions in Supercomputing/ High-Performance Computing

Department of Electrical and Computer Engineering

Stephen J.R. Smith Faculty of Engineering and Applied Science

Queen's University at Kingston, Canada

Queen's University is situated on traditional Anishinaabe and Haudenosaunee Territory.

The Stephen J. R. Smith Faculty of Engineering and Applied Science at Queen's University invites applications for **two tenure-track/tenured positions at the rank of Assistant or Associate Professor with specialization in supercomputing, high-performance computing, and extreme-scale systems** in the Department of Electrical and Computer Engineering. We are seeking scholars with demonstrated leadership in computing systems for modelling and simulation, digital twins, and AI infrastructure, with a preferred starting date of September 1, 2027. This posting is for new positions within the University.

The available positions are:

Tenure-Track or Tenured Tier 2 Canada Research Chair. Canada Research Chairs were established as part of a national strategy to foster research excellence (www.chairs-chaires.gc.ca). The successful candidate must submit an external application to the Tri-agency Institutional Program Secretariat that meets the requirements for the successful nomination of Tier 2 Chair as defined by the Canada Research Chairs Program:

- be an excellent emerging world-class researcher who has demonstrated particular research creativity;
- have demonstrated the potential to achieve international recognition in their field in the next five to ten years;
- have the potential to attract, develop and retain excellent trainees, students and future researchers; and
- be proposing an original, innovative research program of high quality.

Decreased teaching and administrative responsibilities will be associated with this position to enable the candidate to develop a world-class research program.

Tenure-Track or Tenured Faculty Position (made possible by a transformative $30M investment by Bruce Mitchell Sc'68, DSc'20). The successful candidate will receive direct research support for the first 5 years of their tenure from the Bruce Mitchell Research Program, including resources to support the recruitment of multiple postdoctoral researchers/students. Decreased teaching and administrative responsibilities will be associated with this position to enable the candidate to develop a world-class research program.

Qualifications (both positions)

The ideal candidate will have:

- a PhD or equivalent degree completed at the start date of the appointment.
  Note: the requirement for a PhD is that of the University and not the CRC program.
- a background in supercomputing systems and a solid understanding of the challenges of building and operating and/or using large supercomputers along with an understanding of most of the common software used on these systems, such as:
  - batch systems (e.g. SLURM)
  - communication libraries (e.g. MPI, NCCL/RCCL)
  - shared memory node parallel programming models (e.g. OpenMP, CUDA/HIP, Kokkos, etc.)
  - the composition of communication libraries and node parallel programming (e.g. MPI+X).
  - I/O communication libraries (e.g. SCR, Adios, HDF5 and concepts e.g., POSIX).
- deep expertise in one or more supercomputing/HPC research areas. Examples of possible expertise (not an exhaustive list) include:
  - Supercomputing compute system design and optimization
  - Filesystems, software and/or hardware
  - Application performance and optimization
  - Middleware and/or software in one or more of the above areas
  - Networking
  - Interaction of supercomputers with emerging compute paradigms including, but not limited to edge systems and quantum computers
- enthusiasm about teaching supercomputing/HPC to diverse groups.

The main criteria for selection are:

- Evidence of high-quality scholarly research expertise that complements existing research areas in the department that is demonstrated through peer-reviewed publications, research funding, and/or other evidence of scholarly impact;
- Evidence of the potential for research leadership, and the ability to build a research program with an international presence within the next five to ten years (as appropriate to the discipline);
- A commitment to translation of knowledge and scholarly impact through engagement with collaborative networks, and other diverse forms of scholarship
- Evidence of effective teaching and mentorship at both the undergraduate and graduate levels, and an ongoing commitment to academic and pedagogical excellence;
- A demonstrated commitment to the principles of Indigenization, Equity, Diversity, Inclusion, Accessibility, and Anti-racism (I-EDIAA) in the teaching and research environment;
- Professional engineering licensure in Canada, or the eligibility to obtain licensure, is a requirement. Note that all forms of engineering licensure in Canada are considered acceptable (e.g. P.Eng., temporary engineering license, provisional engineering license, etc.);
- Postdoctoral and/or industrial experience will be considered an asset;

The successful candidates will be required to make contributions through service to the Department, the Faculty, the University, and/or the broader community.

Eligibility for Tier 2 Canada Research Chair
Nominees for Tier 2 Canada Research Chair positions must be within 10 years from their first independent academic research-related appointment at the time of nomination. Applicants who are more than 10 years from their first independent academic research-related appointment (and where career breaks exist) may have their eligibility for a Tier 2 Canada Research Chair assessed through the program's Tier 2 justification process. Acceptable justifications are generally limited to breaks in the candidate's research career due to maternity or parental leave, extended sick leave, clinical training, and family care. Please contact research@queensu.ca for more information on the Tier 2 justification process.

The diverse backgrounds of applicants and the type of scholarship appropriate to their research areas, as well as the diverse range of scholarly methodologies and ways of measuring impact, will be taken into account when assessing the quality of the scholarly or creative work. Candidates will be evaluated using the principles of the **Declaration on Research Assessment (DORA)** and with attention to the diverse ways excellence can be demonstrated. The successful candidate will also be expected to make contributions through service to the Department, the Faculty, the University, and/or the broader community. The annual salary for this appointment is expected to be between $150,000 and $180,000. Actual Salary will be commensurate with qualifications and experience.

Research Security
To ensure that the Canadian research ecosystem is as open as possible and is safeguarded as necessary, the Government of Canada has introduced the Policy on Sensitive Technology Research and Affiliations of Concern (STRAC Policy). Canada Research Chair nominees are required to comply with the STRAC Policy. Candidates in strong consideration for the Tier 2 CRC position will be supported by Queen's to determine whether any mitigation steps are necessary to ensure eligibility for a Canada Research Chair award and relevant funding programs.

Vaccination Requirements
Prior to May 1, 2022, the University required all students, faculty, staff, and visitors (including contractors) to declare their COVID-19 vaccination status and provide proof that they were fully vaccinated or had an approved accommodation to engage in in-person University activities. These requirements were suspended effective May 1, 2022, but the University may reinstate them at any point.

The Faculty and Department
Our rapidly changing world presents unprecedented opportunities and significant challenges. Smith Engineering is changing the face of engineering education, so future engineers can be leaders in the face of complex and multidisciplinary global issues. This new model of engineering education will be technically rigorous, experientially focused, socially conscious

and creatively inspired. It will ensure graduates have the knowledge and tools to not only create our technology and processes but to guide their evolution, and how they integrate with society and the world. To promote ongoing teaching success, there is support for course development and delivery provided by the Engineering Teaching and Learning Team, the Queen's Centre for Teaching and Learning, the Department, and Smith Engineering.

The Department of Electrical and Computer Engineering has 36 full-time and 4 cross-appointed faculty, approximately 1200 undergraduate students, and over 200 masters and doctoral students. The Department is deeply engaged with the Ingenuity Labs Research Institute and is home to the Queen's Centre for Energy and Power Electronics Research (ePOWER). It also maintains strong connections with several multidisciplinary centres and initiatives, including the Center of Health Innovation, CMC Microsystems, Nanofabrication Kingston, GreenCentre Canada, Innovation Park, and the Dunin-Deshpande Queen's Innovation Connector.

Smith Engineering delivers 10 undergraduate programs to over 3000 undergraduate students, and 5 graduate programs to over 500 graduate students. The Faculty is well known for its record of leadership in interdisciplinary engineering education, including being one of the first engineering schools in Canada to establish an Integrated Learning Centre, significant community service learning modules in First-Year instruction, an interdisciplinary "design spine" coordinated across all undergraduate programs in the Faculty, and a course in Technology Engineering and Management that draws students from engineering, business, arts and science, and law.

Among our top priorities in Smith Engineering is providing opportunities for early career academics to develop exceptional research and teaching contributions while fostering an inclusive environment where all faculty can thrive. Support for faculty to develop strong research programs includes Special Research Grant opportunities, grant writing workshops and review services, and one-to-one mentorship from experienced colleagues.

Smith Engineering understands that we need to focus on making Engineering for Everyone and is working toward a more diverse and inclusive community in an effort to make our learning and working environment better, and to advance the practice of engineering. The Faculty strives to make a difference through commitments such as the establishment of a Chair for Women in Engineering to improve the proportional representation of women in engineering, the new Engineering Strategic Plan, the dynamic outreach programs including Indigenous Futures in Engineering and Black Youth in STEM. Visit Inclusive Queen's for more information on equity, diversity and inclusion resources and initiatives.

Institution

From Nobel Prize-winning research exploring the building blocks of the universe to cancer care and treatment to sustainable technologies, Queen's University is tackling humanity's most pressing challenges.

A member of the U15 group of Canadian research universities, Queen's is home to a vibrant research community that includes 46 Canada Research Chairs, two Canada Excellence Research Chairs, and over 20 research institutes that work in partnership with communities, governments, and industry to advance research and innovation, making a measured impact on Canada and the world.

Queen's is in the top 200 of the QS World University Rankings. In 2025, for the fifth straight year, Queen's ranked among the global top 10 in the Times Higher Education (THE) Impact Rankings. THE Impact Rankings is an international ranking of universities that are advancing the UN Sustainable Development Goals within and beyond their local communities. Queen's placed sixth worldwide and first in Canada out of over 2,300 universities in more than 120 countries.

At Queen's University, we are committed to advancing I-EDIAA as core priorities that shape our workplace and research culture. We recognize that diversity drives innovation, strengthens collaboration, and helps remove barriers so that everyone can thrive. Our eight employee resource groups (ERGs) play a vital role in fostering belonging, amplifying diverse voices, and supporting employees across the university. Faculty and their dependents are eligible for an extensive benefits package that includes prescription drug coverage, vision care, dental care, long term disability insurance, life insurance, and access to the Employee and Family Assistance Program. Employees also participate in a pension plan, and tuition assistance is available for qualifying employees, their spouses, and dependent children. Queen's values families and provides a "top up" to government parental leave benefits for eligible employees on maternity/parental leave, as well as partial reimbursement for eligible daycare expenses. Full details are outlined in the Queen's–QUFA Collective Agreement, and more information on employee benefits can be found through Queen's Human Resources.

The City

The University is situated on the traditional territories of the Haudenosaunee and Anishinaabe, in historic Kingston on the shores of Lake Ontario. Queen's is an integral part of the Kingston community, with the campus nestled in the core of the city, only a 10-minute walk to downtown. Kingston's residents enjoy an outstanding quality of life with a wide range of cultural and creative opportunities, including live music venues, art festivals and a thriving artistic community. Living in Kingston provides access to many natural areas, hiking trails, and proximity to vibrant First Nations communities, including Tyendinaga and Akwesasne.

Kingston is a unique Canadian city of 132,000 with a distinct blend of history, recreation, industry, and learning. Kingston offers unique waterfront living with many recreational opportunities. It is within a two-and-a-half-hour drive (two-hour train ride) to the commercial, industrial and political hubs of Toronto, Montreal, and the nation's capital, Ottawa, and a thirty-minute drive from the international bridge linking Ontario and upstate New York. The city is also the origin of the Rideau Canal system – a UNESCO International Heritage site, and is close to Frontenac Provincial Park, the Thousand Islands National Park, and the Frontenac Arch UNESCO World Biosphere Reserve. The Queen's University Biological Station, north of

the city, encompasses 34 km2 of diverse lands, affording premier learning and research opportunities.

How to Apply
The University invites applications from all qualified individuals. Queen's is strongly committed to employment equity, diversity and inclusion in the workplace and encourages applications from Black, racialized/visible minority and Indigenous people, women, persons with disabilities, and 2SLGBTQ+ persons.

Applications from all qualified candidates will be considered in the applicant pool. The successful candidate must be legally eligible to work in Canada at the time of appointment. In accordance with Canadian immigration requirements, priority will be given to Canadian citizens, permanent residents of Canada, and any qualified individuals who have a valid legal work status in Canada. Please indicate in your application if you have a valid legal work status in Canada.

We recognize that certain circumstances, including career interruptions, caregiving responsibilities, leaves, or other circumstances, including systemic barriers, may affect a nominee's record of research achievement. Applicants are encouraged to provide relevant information to contextualize their research record.

Queen's is committed to providing support and accommodation for applicants with disabilities at all stages of the recruitment processes. If you require accommodation for submitting your application or during the interview process, please contact Ms. Tiwalade Olobayo in the Department of Electrical and Computer Engineering at: ecesearch@queensu.ca.

Those interested in this position should submit a complete application package, including the following documents:

- a cover letter, specifying: 1) whether you would like to be considered for one or both of the available positions and confirming your alignment with the Tier 2 CRC eligibility criteria if interested in that position; 2) whether you have a valid legal work status in Canada; and 3) whether your proposed research is advancing a Sensitive Technology Research Area, and if so, whether you have any active affiliation with a Named Research Organization;
    - Candidates in strong consideration will be supported by Queen's to determine whether any mitigation steps are necessary to ensure eligibility for the CRC award and relevant funding programs. The information is collected solely to assess eligibility for funding and will not be used to evaluate academic merit.
- a current Curriculum Vitae including a list of publications (publications with students should be clearly indicated), awards, grants (secured and pending), and other evidence of scholarly impact;
- a research statement with a summary of the proposed research program for the next 5 years, and the ways in which the program is/will make an impact in the field through

high-impact publications in top-tier HPC venues, industry collaborations, technology transfer, and/or other forms of scholarly impact;
- a statement of teaching interests and experience (including teaching outlines and evaluations if available);
- a statement describing your experience with and commitment to advancing I-EDIAA, including how these principles inform your research, training, and teaching; and,
- contact information for three referees who could provide references upon request. Referees will be contacted only for shortlisted candidates, with advance notice.

Closing date: The deadline for applications is **December 1, 2026**.

Applicants are encouraged to apply and upload all documents in their application packages electronically as PDFs on the following website: https://apply.smithengineering.queensu.ca/124076.

As part of the application process at Queen's University, our recruitment system uses Artificial Intelligence (AI), as defined under the Ontario Employment Standards Act, to ask job-related questions and confirm eligibility for hire. All final hiring decisions are made using non-AI related processes.

Academic staff at Queen's University are governed by a Collective Agreement between the University and the Queen's University Faculty Association (QUFA), which is posted at https://www.queensu.ca/facultyrelations/qufa/collective-agreements-lous-moas and at https://qufa.ca/collective-agreement/.