Position Title:	Scientific Engineer
Program:	Connected Minds: Neural and Machine Systems for a Healthy, Just Society York University, Keele Campus
Contract Term:	1 year with possibility of extension
Annual Salary:	$100-120K per year
Hours of Work:	Full-time; 35 hours per week

ABOUT CONNECTED MINDS:

Connected Minds: Neural and Machine Systems for a Healthy, Just Society (2023-2030) combines York's existing science and technology research ecosystem, and longstanding institutional strengths in the social sciences, arts, and humanities with Queen's University's complementary strengths in neuroscience, health, and artificial intelligence, as well as a substantial consortium of multi-sector partners. The Connected Minds vision is to co-create and co-lead socially responsible, community engaged research that produces innovative technologies, policies, and regulations that optimize the benefits and mitigate the risks of the new techno-social collective. Connected Minds will fund 35 strategic faculty hires, partner-focused seed, team, and prototyping grants, KM/commercialization events, and an ambitious multi-institutional micro-credential training program with 385 trainees and cross-sector stakeholders. All activities will require interdisciplinary participation, and we will prioritize projects that benefit Indigenous and other equity-deserving groups. With CFREF funding, Connected Minds will lead Canada and the world in the socially responsible creation and adoption of scientific and technological innovation to promote a healthy, resilient, and just techno-social collective.

JOB PURPOSE:

Reporting administratively to the Executive Director, and scientifically to the Lead of the Infrastructure and Facilities Committee, the Scientific Engineer provides advanced technical and engineering support for Connected Minds research laboratories.

This role supports faculty, staff, and students with the design, fabrication, installation, calibration, and maintenance of specialized laboratory equipment and systems and coordinates with the shop technician to complete projects. The role plays a key part in ensuring laboratories are safely maintained, technically advanced, and able to support worldclass research in human and technology focused experiments.

MAJOR DUTIES:

Equipment Design & Fabrication

- Design, fabricate, and assemble specialized electronic, electromechanical, and optical devices for experimental research.
- Develop circuit diagrams, layouts, and schematics using CAD tools, construct and test prototypes.

- Interface electronic and computer systems to support data collection and experiment automation.
- Prepare clear technical documentation.

Installation & Calibration

- Install and configure laboratory systems including display, auditory, motion tracking, and sensor devices.
- Calibrate instruments for accuracy (e.g., spatial coordinates, brightness/colour, audio levels, body position).
- Troubleshoot and upgrade laboratory systems to support new research projects.
- Maintain accurate documentation of system configurations.

Maintenance & Troubleshooting

- Diagnose and repair hardware and software issues in laboratory devices and computer interfaces.
- Maintain equipment inventories, warranties, and service records for shop and laboratory equipment.
- Liaise with vendors and York procurement staff regarding parts and equipment purchases.

Training, Supervision & Support

- Train and support students and staff on proper equipment installation, operation, and maintenance.
- Provide technical guidance and functional supervision within the workshop, including oversight of technical staff.
- Ensure compliance with institutional and provincial safety requirements.

Software & Systems Integration

- Develop or adapt low-level software interfaces for device control and data acquisition.
- Integrate systems connections; assist with programming microcontrollers.
- Support Linux and Python based environments for experiment automation and data logging.

QUALIFICATIONS:

Education

- Diploma or Bachelor's degree in Electrical or Electronic Engineering, Automation, Instrumentation, or a related field.

Experience

- Minimum of five (5) years' experience providing technical support in research or experimental laboratory environments.

- Demonstrated experience designing, assembling, and troubleshooting analog and digital circuits.
- Minimum of 2 years of experience managing staff
- Experience with software–hardware integration and signal processing is preferred.
- An electrical engineering background with demonstrated experience supporting experimental laboratory environments will be considered an asset.

Knowledge, Skills, and Abilities

- Strong practical knowledge of electronics, circuits, and instrumentation.
- Experience with analog and digital circuit design and PCB design workflows.
- Knowledge of microcontroller systems, signal sampling, and basic signal processing.
- Experience with low-level software programming and software–hardware interfacing.
- Familiarity with Linux and Python environments is an asset.
- Experience supporting experimental laboratories; familiarity with neurophysiology or psychophysics labs is an asset.
- Knowledge of system communication protocols and expansion via USB, Ethernet, and PCI/PCIe.

Working Conditions

- Ability to perform strenuous physical activities including lifting to 50 lbs unassisted, bending, standing, and climbing.
- Ability to perform fine motor tasks such as soldering, wire wrapping, and manipulation of delicate components.
- Use of manual tools and power equipment common to electronic fabrication and repair.
- Occasional exposure to electrical and chemical materials in accordance with safety protocols.
- Regular interaction with faculty, graduate students, and technical staff across Connected Minds labs.

Note: The duties of the Scientific Engineer may evolve as the Connected Minds program expands and priorities shift. Flexibility, comfort with ambiguity, and a readiness to adapt to change will be essential.

Application Instructions:

Please submit a cover letter and resume to Nicoleta Negoita, Senior People Partner, at nicol23@yorku.ca This position is open until filled.