

## JOB DESCRIPTION

| Job Information  |  |
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| Position Title   | Postdoctoral Fellow in Mathematics   |
| Category   | Postdoctoral Visitor   |
| Supervisor(s)  | Pavlos Motakis   |
| Unit   | Department of Mathematics & Statistics   |
| Location   | Keele Campus   |
| Background   |  |
| <p>The Mathematics and Statistics Department at York University is a large, research-active environment with researchers in various pure mathematics disciplines. The core of the NSERC-funded program "Applications of Asymptotic Structures in Banach Spaces" focuses on studying the geometric properties of Banach spaces and their bounded linear operators. Significant results achieved include the primariness of the <math>L_1(L_p)</math> spaces, the reduction of Haar multipliers on biparameter Haar system Hardy spaces and Bourgain-Rosenthal-Schechtman spaces, and the proof that separable <math>C(K)</math> spaces and Hilbert spaces are Calkin algebras. The long-term goal of this research is to make breakthroughs in areas pertaining to significant open problems in Banach space theory, such as the classification of complemented subspaces of <math>L_1</math>, expanding the list of unital Banach algebras that are Calkin algebras, and constructing reflexive Banach spaces with the scalar-plus-compact property.</p> |  |
| Overall Purpose of Postdoctoral Position   |  |
| <p>The position aims to develop techniques for manipulating vector structures in Banach spaces. This includes Haar-like systems in classical function spaces, spreading models, and asymptotic models. The goal is to study properties of bounded linear operators on both classical and non-classical Banach spaces related to the projectional reduction of operators, decompositions of Banach spaces, and quotient algebras of operators. Additionally, vector structures will be applied to study the rigidity properties of metric properties of normed spaces.</p>  |  |
| Key Responsibilities   |  |
| <ul style="list-style-type: none"> <li>• Conducting research on the topics of the above research program, such as contributing significantly to the development of new mathematical content and sharing findings with the research community through research articles, seminar lectures, conference presentations, and collaborations.</li> <li>• Assisting in mentoring graduate and undergraduate student researchers.</li> <li>• Teaching up to 1.0 FCE per year, normally up to two 3-credit courses.</li> </ul>  |  |
| Skills and Qualifications  |  |
| Educational Qualifications   | Applicants must have completed all requirements for a PhD with a specialization in a field of Banach space theory adjacent to the research program.  |
| Training/Experience Required   | The successful candidate will be expected to engage in outstanding and innovative research at the highest level. They must demonstrate the promise of research excellence of recognized international calibre, as shown in their research statement. This includes a record of publications (or forthcoming publications) in highly-ranked journals and in fields of Banach space theory directly adjacent to the research program, such as projectional factorizations of operators, hereditarily indecomposable Banach spaces, $\mathcal{L}_\infty$ -spaces, and asymptotic structures in Banach spaces with applications to operator theory or metric geometry. The candidate should also have a record of presentations at major conferences and strong recommendations from reputable referees. The teaching statement, teaching accomplishments, and strong letters of reference must demonstrate the promise of excellence in teaching. |
| Terms and Conditions   |  |

This postdoctoral position based in the Department of Mathematics and Statistics will be for a maximum period of 1 year in length, and is subject to available funds.

Salary: \$42,000 + benefits (subject to budgetary approval)

**Note:** There may be teaching opportunities up to a maximum of 1.0 FCE per year, with payment for any assigned teaching responsibilities equivalent to the prevailing rate for instruction in the CUPE 3903 Unit 2 collective agreement as adjusted annually. The current rate is \$10,376.00 + \$622.56 vacation pay before taxes per 0.5 FCE. This compensation is supplementary to the above salary, but teaching opportunities are not guaranteed.

#### **How to Apply**

- A cover letter
- A detailed and up to date CV
- A research statement
- A teaching statement
- At least two letters of recommendation, with one addressing teaching, sent directly by referees of high-standing

Please submit all documents by email to Professor Pavlos Motakis at [pmotakis@yorku.ca] by December 6, 2024 or until the position is filled. Qualified applicants may be invited for an interview by telephone or Skype. Only those applicants selected for consideration will be contacted.