VISION 2020

DEPARTMENT OF MATHEMATICS AND STATISTICS, UNIVERSITY OF OTTAWA

OUR DEPARTMENT TODAY

In 2010, the Department of Mathematics and Statistics at the University of Ottawa is a vibrant research community comprising 37 full-time professors, 10 postdoctoral fellows, 85 graduate students and some 200 undergraduate students. We are committed to excellence in research and teaching, in both official languages. Our results has been published in internationally renowned journals and we organize workshops and summer schools every year. We proudly teach the fundamentals of mathematics and statistics to approximately 6000 incoming students each year. Our Department is dedicated to offering high quality programmes to our students and steadily strive for high student satisfaction.

RESEARCH

Our department is a collaborative and supportive association of internationally recognized researchers. All members hold an NSERC grant – an impressive record. The pursuit of high-quality, fundamental, curiosity-driven research is at the heart of our success, and it drives our passion for mentoring graduate and undergraduate students. Our Vision 2020 is to maintain our excellence in research through our tradition of exceptionally strong hiring and our affiliations with the Fields Institute and the Centre de Recherches Mathématiques (CRM), and also to seek out opportunities for growth.

The pure mathematics of today is the basis of applications tomorrow. Fundamental research is the traditional strength of our Department. Our researchers work in such key areas as algebra, analysis, differential equations, discrete mathematics, dynamical systems, logic, number theory, probability, statistics and topology. Since many of the most important results that have appeared in mathematics over the last few decades lie at the intersection of different fields, our diversity gives us an unparalleled advantage for future research and innovation. In addition to its commitment to pure mathematics, the department maintains strong interdisciplinary collaboration within and outside of academia. Applying mathematical tools to areas such as biostatistics, optimization, and mathematical modeling of ecosystems and population health greatly advances those fields and provides recommendations to managers and policy makers. At the same time, it offers new challenges for pure mathematical research.

Going forward, the department sees several opportunities for growth. Possible future initiatives include creating a Centre for Modeling, Analysis and Simulation of Complex Systems as well as seizing a leadership role in financial mathematics in Ottawa. Furthermore, our department will contribute its significant expertise to the Institute for Biostatistics and Cryptologic Research Institute.

GRADUATE EXPERIENCE

We foresee continued strong growth in our graduate student population, as our knowledge economy drives the demand for graduate degrees in mathematics and statistics. These students, in turn, support both our research and our commitment to high-quality undergraduate teaching. They conduct their own research, offer tutorials for undergraduate students and play a vital role in the success of the Math Help Centre. Graduate students form an integral part of our Department and fostering our thriving graduate program is a part of Our Vision 2020.

Mathematics is a truly international discipline, and the best departments attract top graduate students from around the world. In order for the department to maintain its competitiveness, we aim to increase the number of available international scholarships. We also plan to become a sponsor of the Mathematical Sciences Research Institute, which would provide the opportunity for our students to participate in cutting edge summer workshops with the best students from around the world. Furthermore, we envision offering new and exciting interdisciplinary programmes, for example in biomathematics.

UNDERGRADUATE EXPERIENCE

We anticipate growth in the undergraduate population in our own discipline as well as in the many programmes that our first and second year courses serve. Our Vision 2020 is to maintain our high quality of student experience in all courses through the commitment of an enthusiastic, research-oriented professoriate, the maintenance of relatively small class sizes, and the continued development of more small-group tutorials to support an intimate learning environment. We foresee adapting teaching technologies to help increase student engagement in and out of the classroom, and expanding our highly successful Math Help Centre. We intend to create and expand current opportunities for undergraduate students to participate in mathematical and statistical research, through courses such as the newly created honours project, or through summer research assistantships, funded from variety of sources, including NSERC and MITACS.

SERVICE TO THE COMMUNITY

We will maintain our vital sponsorship of both Fields and CRM, which have given our Department an unparalleled international profile through our opportunities to organize workshops and recruit postdoctoral fellows. Our Department will embrace

leadership opportunities, such as with the Next Einstein Initiative, which builds bridges between scientific communities in Africa and worldwide. Locally, we will continue to raise the profile of mathematics through the organization of our annual math camps, workshops for high school students and other outreach activities such as Let's Talk Science. We also envision the creation of a Statistical Consulting Service that would provide our students with hands-on experience while at the same time helping to serve the statistical needs of researchers at the University of Ottawa and its affiliates.

FACILITIES

Our Vision 2020 includes a state-of-the-art, accessible building with sufficient space for our department and the services we offer.

CONCLUSION

Our Vision 2020 is of a vibrant, bilingual Department of Mathematics and Statistics, central to the University of Ottawa's mission and renowned for its excellence in teaching and research.