Program Identification

Baruch College

Bachelor of Science in Financial Engineering

Department of Mathematics

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Department of Mathematics

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Approved by the Faculty of the Weissman School of Arts and Sciences:

December 11, 2013

College Representative: David P. Christy, Provost and Senior Vice President

Signature: ____________________________ Date: ________________

Proposed Initiation Date: September, 2015
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BSFE Program Proposal Executive Summary

The Department of Mathematics in the Weissman School of Arts and Sciences of Baruch College proposes to establish a Bachelor of Science in Financial Engineering (“BSFE”). We anticipate opening the program in fall 2015.

The Master of Science program in Financial Engineering (“MFE”) has been a resounding success for Baruch College. While the faculty and students of Baruch’s MFE program are succeeding, there is a need to educate undergraduates in the materials necessary to thrive in the industries that utilize such computational and mathematical skills. The proposed BSFE program offers Baruch students the ability to gain such an education.

The program is first and foremost a course of study in mathematics, with a focus on the computational tools and techniques needed to thrive in the financial engineering industry. In today’s specialized world, a sophisticated level of mathematical understanding is an essential competitive edge.

A key objective of the program is to ensure that our graduates are well positioned to find employment, or to continue into graduate studies in a mathematical, computational, or financial field. Elite financial institutions hire, and elite graduate programs accept, only the most capable and well-trained individuals. It is a major goal of our program that graduating students both know how to solve real problems and be able to continue their studies. An additional goal of the program is to ensure that our students leave with communication skills of the quality demanded by the business community.

The academic rigor of our program is an important component, to ensure that our graduates are prepared for both the job and the higher education markets. Another equally important strategic feature of the program will be its emphasis on computational techniques. We will require that our BSFE students are well-versed in programming languages being used in industry.

Using tools learned in the program, students will be required to analyze various relevant situations and give visual and oral presentations of their work that will be open to both faculty and students. The presentations will also be an opportunity for the students to improve their communication skills, an important aspect in any employment decision.

The skills required to be successful in a quantitative role in the financial industry can typically not be acquired as part of only one undergraduate degree. A sophisticated grasp of mathematical ideas and techniques, strong computational and programming skills, good communication skills, and adequate knowledge of finance and accounting cannot currently be achieved without undertaking further post-graduate study. In particular, our own Baruch MFE admission requirements list all of the skills addressed in this proposed new undergraduate curriculum but none of Baruch’s current undergraduate programs enable students to acquire these skills in just one degree.

Holders of the proposed BSFE degree are likely to be very attractive to employers in the financial
industry; graduates can expect to find roles in investment banks, asset management companies, hedge funds, and regulatory agencies. Moreover, motivated students can expect to be admitted to leading masters and Ph.D. programs. Offering this financial engineering program should make the Weissman School an attractive target for the best undergraduate students, which will in turn will help to attract the best faculty and students to other programs besides financial engineering.

More philosophically, one might go so far as to say that this proposed program of undergraduate study is indicative of a new trend to study and teach concrete and applicable mathematics. Our proposed program is by its nature interdisciplinary, combining pure and applied mathematics, computer science, economics and finance. The students we attract to our MFE program come from all over the world and we expect no less for our proposed undergraduate program.

As a consequence of the strong reputation of our MFE program, outstanding students who would otherwise not consider Baruch among their college choices may now apply with the realistic expectation that doing well in this program would significantly increase their chances of being accepted to the MFE program after graduation. Thus, the BSFE program would serve as an in-house “feeder” to our MFE program.

The BSFE will consist of four components, totaling 120 credits: 45 in required Mathematics courses, and the rest spread across Core credits, Economics and Finance courses, and minor and elective courses. As a preliminary requirement, students must complete two semesters of calculus. As this program includes courses in Economics and Finance, students who would usually not consider a traditional mathematics major will find this program attractive.

Our present faculty have expertise in all areas related to the proposed major and we can offer all the courses in this proposal immediately. As there will be five new mathematics courses, this translates into about one or two additional courses each semester to be offered by the department, which presently offers about one-hundred and fifty sections each semester; an additional course or two each semester will have a minimal impact upon our teaching load. The responsibility to teach the proposed financial engineering courses will fall upon our full-time faculty.

There is no need for additional facilities or for any new equipment, as the present facilities include the sophisticated Subotnick Financial Services Center as well as Bloomberg terminals readily available for our students to use. The department houses the Ercolano Library and in addition, the MFE program has a well-stocked reference library for our financial engineering students. Along with the Baruch College library, no additional library resources are needed. The department has access to various on-line sources which will also be available.

We anticipate an entering class with about 15 – 20 students, with increasing enrollments each year until we reach about 35 – 40 students per year. The costs associated with this program are just to cover the new courses. The first year there will be no new courses, three new courses the second and third year, and ultimately five new courses the fourth year and thereafter. Five courses would result in an additional $20,000 in adjunct replacement costs. The actual cost could be considerably less, as we offer multiple sections of lower level courses, and a significant portion of these costs can
be absorbed by other existing sections by running them at near capacity. There would be no additional resources required.

There is universal support for such a program at Baruch. Myong Soo Lee, Interim Dean of the Zicklin School, clearly appreciates the cumulative effect this program can have on both the Zicklin and Weissman schools. Presidential Professor James Gatheral and Professor Andrew Lesniewski, senior faculty in the Mathematics department, each come from distinguished careers in the financial industry, and appreciate the high regard which such a program will be held by our graduates’ future employers. In addition, we have solicited external evaluations from well-regarded professionals in both academia and industry, these may be found in Appendix B.

There is universally strong support indicating the value and rigor of the proposed major, as well as a need and opportunities for its graduates. Students with a strong background in financial mathematics will have opportunities to pursue graduate programs at the best universities and find excellent employment opportunities in the financial sector.
BSFE Program Proposal Abstract

The proposed Bachelor of Science in Financial Engineering (BSFE) program offers several benefits to the Baruch College community. Not only will it attract extremely qualified students who may not have considered applying to a public college, the program will strengthen the undergraduate offerings in mathematics in both the theoretical and applied realms, giving more learning options to our pure mathematics and actuarial science majors and minors. It will also prepare our graduates for positions in industry and academia. In addition, it will be an in-house ‘feeder” to our successful Master of Science in Financial Engineering (MFE) program, which has become one of the pre-eminent financial engineering graduate programs in the country.

The minimal costs involved with implementing this program, as well as the increase in visibility of the Weissman School of Arts and Sciences as a destination school for undergraduates interested in the intersection of mathematics, computer science, and finance, makes the BSFE program a brilliant addition to the program offerings of Baruch College’s Department of Mathematics.

1. Purpose and Goals

The Department of Mathematics in the Weissman School of Arts and Sciences of Baruch College proposes to establish a Bachelor of Science in Financial Engineering (BSFE). We anticipate opening the program in fall 2015.

The Master of Science program in Mathematical Finance (later renamed Financial Engineering; abbreviated hereafter as “MFE”) has been a resounding success for Baruch College. QuantNet, in 2013, ranked the program #4 in the nation, which is the highest ranking for a program in a public university, is higher than those of a number of first tier private colleges. Job placement for graduates is at over 90%, with an average starting salary for 2012-2013 graduates of $113,000. Our students have won numerous accolades, including top honors in the Rotman International Trading Competition, the IAFE Academic Case Competition, and the Metaquotes Automated Trading Championship.
While the faculty and students of Baruch’s MFE program are succeeding, there is a need to educate undergraduates in the materials necessary to thrive in the industries that utilize such computational and mathematical skills. The proposed BSFE program offers Baruch students the ability to gain such an education.

**Academic Goals**
The body of mathematics drawn upon to solve problems in finance is a well-recognized area of academic pursuit. The number of mathematical journals devoted to this field – Finance and Stochastics, Journal of Computational Finance, Journal of Financial and Quantitative Analysis, and Mathematical Finance, to name a few – is evidence of this phenomenon. Additionally, long-established mathematics journals focusing on areas such as probability and differential equations have been publishing papers concerning applications in finance for well over a decade. We note also that other universities in the Tri-State area offer BS degrees in Financial Engineering (Columbia University, Princeton University), Quantitative Finance (Stevens Institute of Technology), or Financial Mathematics (Brooklyn College).

The program we propose is first and foremost a course of study in mathematics, with a focus on the computational tools and techniques needed to thrive in the financial engineering industry. A perusal of Section 4 (Curriculum) shows that the proposed courses are organized by mathematical content, following the structure of our MFE curriculum. In today’s specialized world, a sophisticated level of mathematical understanding is an essential competitive edge.

An additional goal of the program is to ensure that our students leave with communication skills of the quality demanded by the business community. A version of the course MTH 4300 (Algorithms, Computers, and Programming II) will have an oral presentation component that will require students to be able to present technical work in a professional manner.

**Employment Objectives**
A key objective of the program is to ensure that our graduates are well positioned to find employment, or to continue into graduate studies in a mathematical, computational, or financial
field. Elite financial institutions hire, and elite graduate programs accept, only the most capable and well-trained individuals. It is a major goal of our program that graduating students both know how to solve real problems and be able to continue their studies. We also expect that best graduates of this undergraduate program will continue their studies in our graduate MSFE program. This new “feeder” program may allow us to increase the size of our graduate program while maintaining its high standards.

The academic rigor of our program as discussed above is an important component of our strategy to ensure that our graduates are prepared for both the job and the higher education markets. Another equally important strategic feature of the program will be its emphasis on computational techniques. C++ is the predominant computer language of Wall Street, and we will require that our BSFE students be well-versed in this language as well. Two other programming languages are also being used in industry, Python and R; Python is already taught in our courses, and we plan to integrate R into MTH 4130.

In this practical and hands-on spirit, all students will be required to prepare and deliver presentations. Using tools learned in the program, students will be required to analyze these situations, and give visual and oral presentations of their work that will be open to both faculty and students. The presentations will also be an opportunity for the students to improve their communication skills, an important aspect in any employment decision.

2. Need and Justification

The skills required to be successful in a quantitative role in the financial industry can typically not be acquired as part of only one undergraduate degree. A sophisticated grasp of mathematical ideas and techniques, strong computational and programming skills, good communication skills, and adequate knowledge of finance and accounting cannot currently be achieved without undertaking further post-graduate study.

In particular, our own Baruch MFE admission requirements lists all of the skills addressed in this proposed new undergraduate curriculum but none of Baruch’s current undergraduate
programs enable students to acquire these skills in just one degree. So far, we have accepted a very few exceptional Baruch undergraduate students who subsequently did extremely well, successfully landing good jobs in the financial industry. These MFE graduates are now some of our most dedicated alumni, supporting the MFE program with time and money.

As the letters from industry leaders supporting this application indicate, holders of the proposed Bachelor of Science in Financial Engineering degree are likely to be very attractive to employers in the financial industry; graduates can expect to find roles in investment banks, asset management companies, hedge funds, and regulatory agencies. Moreover, motivated students can expect to be admitted to leading masters and Ph.D. programs. Just as importantly, our offering this financial engineering program should make the Weissman School an attractive target for the best undergraduate students, which in turn will help to attract the best faculty and students to other programs besides financial engineering.

More philosophically, one might go so far as to say that this proposed program of undergraduate study is indicative of a new trend to study and teach concrete and applicable mathematics. Our proposed program is by its nature interdisciplinary, combining pure and applied mathematics, computer science, economics and finance. The students we attract to our MFE program come from all over the world and we expect no less for our proposed undergraduate program.

3. Students

The proposed program will require a strong mathematics background; students wishing to pursue this major will first need to demonstrate a high level of understanding of the first two semesters of calculus. This may be accomplished by scoring a 4 or better on the calculus AP BC exam; by scoring a 4 or better on the calculus AP AB exam, and by completing MTH 3010 (calculus II) with a B+ or better; or by completing both MTH 2610 (calculus I) and MTH 3010 with a combined GPA of at least 3.5. Students then take MTH 3050 (Multivariable and Vector Calculus) and MTH 4000 (Bridge to Higher Mathematics); admission to the program will require a minimum grade of B in each of these two courses.
Baruch College has many entering freshmen who satisfy either of the first two preliminary requirements; there are also a number of Macauley honor students who would also be eligible to take MTH 3050 and 4000. As this program includes courses in economics and finance, students who would usually not consider a traditional mathematics major will find this program attractive.

As a consequence of the strong reputation of our MFE program, outstanding students who would otherwise not consider Baruch among their college choices may now apply with the realistic expectation that doing well in this program would significantly increase their chances of being accepted to the MFE program after graduation.

4. Curriculum

The BS in Financial Engineering will consist of four components, totaling 120 credits:

- 43 Core credits, consisting of 13 credits of Required Core (including a STEM alternative MTH 2610), 18 credits of Flexible Core, and 12 credits of College Option (including foreign languages);
- 12 credits in required Economics and Finance courses;
- 45 credits in required Mathematics courses;
- 20 credits in minor and elective courses.

Program Requirements
As a preliminary requirement, students must complete two semesters of calculus, which may be achieved by any one of the following three methods:

- Calculus AP BC with grade 4 or 5
- Calculus AP AB with a grade of 4 or 5 and MTH 3010 with B+ or higher (4 credits)
- MTH 2610 and MTH 3010 with a combined GPA of at least 3.5 out of 4.0

Students must meet the following requirement to gain admission to the program:

- MTH 3050 and MTH 4000 (both new courses) with a minimum grade of B in each course.

The 12 credits of required Economics and Finance come from the following courses (3 credits
Required Courses
Following is a list of the twelve required mathematics courses for the B.S. in Financial Engineering, totaling 45 credits. This list includes existing courses as well as five new courses, which are so labeled.

Preliminary Courses

- **MTH 3050 (NEW, 4 hours/4 credits)** Multivariable and Vector Calculus  
  **Prerequisites:** MTH 2610 and MTH 3010 with a combined GPA of at least 3.5; or Calculus AP AB with a grade of 4 or 5 and MTH 3010 with a B+ or higher; or Calculus AP BC with a grade 4 or 5  
- **MTH 3300 (3 credits)** Algorithms, Computers, and Programming I  
- **MTH 4000 (NEW, 4 hours/4 credits)** Bridge to Higher Mathematics  
  **Prerequisites:** MTH 3020 or MTH 3030 or MTH 3050. MTH 4000 will be a prerequisite to MTH 4115.

Upper Level Courses

- **MTH 4100 (3 credits)** Linear Algebra  
- **MTH 4115 (NEW, 4 hours/4 credits)** Numerical Methods for Differential Equations  
- **MTH 4120 (4 credits)** Introduction to Probability  
- **MTH 4125 (4 credits)** Introduction to Stochastic Processes  
- **MTH 4130 (4 credits)** Mathematics of Statistics  
- **MTH 4300 (3 credits)** Algorithms, Computers, and Programming II  
  **Remark:** This second programming course will include a computational project and an oral presentation.  
- **MTH 4500 (4 credits)** Introductory Financial Mathematics  
- **MTH 4600 (NEW, 4 hours/4 credits)** Data Analysis and Simulation for Financial
Engineers

**Prerequisites:** MTH 4125, MTH 4130, and MTH 4500

- **MTH 5500 (NEW, 4 hours/4 credits)** Stochastic Calculus for Finance
  **Prerequisites:** MTH 4125, MTH 4500

**New Courses**
A detailed description of the new courses may be found in the Course Proposal section of the Appendix.

**Integration with and Impact upon Existing Majors**
The department presently offers two majors, in mathematics and actuarial science. The proposed BSFE major will initially have a number of courses in common with these majors, for example, MTH 4100 and MTH 4120. It is our expectation that when the BSFE program’s enrollment sufficiently increases, we will offer separate sections of such courses, geared more specifically toward financial applications. It is also expected that courses like MTH 4000, the bridge course, will prove attractive to the other majors, making revisions to courses desirable.

**Elective Courses and Minors**
If entrance requirements and other introductory coursework are relieved by AP credit or transfer credit, or the student wishes to extend his/her undergraduate studies beyond a fourth year, a minor course of study is recommended but not required. Possible options include Economics, Communication Studies, or Statistics. Alternatively, with departmental permission, students may opt to take electives that would further enhance their understanding of their field of study, including but not limited to:

- **ECO 4000** Statistical Analysis for Economics and Finance (3 credits)
- **STA 3155** Regression and Forecasting Models for Business Applications (3 credits)
- **STA 4158** Analysis of Time Series (3 credits)
- **MTH 4135** Computational Methods in Probability (3 credits)

**Typical Course of Study (Full-Time Student)**
A sample 120-credit course of study for a full-time student is presented below. The first two
semesters fulfill the student’s Required Core. Semesters three and four begin the mathematical content in earnest, while fulfilling prerequisites for the required finance courses and beginning the College Option. At the end of semester four, the entry requirements for the BSFE are complete. For the final two years, the complexity and difficulty of mathematics coursework increases while maintaining a well-rounded schedule, and culminating in the completion of the Economics and Finance requirement and College Option in semester six, and the final Mathematics courses and Flexible Core in semester eight.
<table>
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<tr>
<th>Semester</th>
<th>Course</th>
<th>Course Name</th>
<th>Hours</th>
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<td>Flexible Core: Creative Expression</td>
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<td>Macroeconomics</td>
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<td>2</td>
<td>ENG 2150</td>
<td>Writing II</td>
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<td>MTH 3010</td>
<td>Elementary Calculus II</td>
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<td>Flexible Core: Scientific World (lab co-req w/ lect)</td>
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<td>2</td>
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<td>3</td>
<td>ACC 2101</td>
<td>Principles of Accounting</td>
<td>4</td>
<td>3</td>
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<td>ENG 28x0</td>
<td>Great Works of Literature I or II</td>
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<td>MTH 3050</td>
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<td>MTH 3300</td>
<td>Algorithms, Computers, and Programming I</td>
<td>4</td>
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<td>TOTAL CREDITS FOR SEMESTER 3</td>
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<td>Speech Communication</td>
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<td>Flexible Core: World Cultures and Global Issues</td>
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<td>MTH 4120</td>
<td>Introduction to Probability</td>
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<td>TOTAL CREDITS FOR SEMESTER 5</td>
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<td>FIN 3610</td>
<td>Corporate Finance</td>
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<td>MTH 4125</td>
<td>Introduction to Stochastic Processes</td>
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<td>MTH 4300</td>
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<td>TOTAL CREDITS FOR SEMESTER 6</td>
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<td>MTH 4130</td>
<td>Mathematics of Statistics</td>
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<td>Introductory Financial Mathematics</td>
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<td>7</td>
<td>FC</td>
<td>Flexible Core: The Individual and Society</td>
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<td>Data Analysis and Simulation for FE</td>
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<td>MTH 5500</td>
<td>Stochastic Calculus for Finance</td>
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<td>TOTAL CREDITS FOR SEMESTER 8</td>
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</table>

Total Credits for the Program = 120
**Program’s Learning Goals**

The Bachelor of Science in Financial Engineering degree program will prepare students for higher-level work in the fields of finance, economics, mathematics, computer science and engineering. Through a well-rounded, theoretical and technical curriculum, graduates of this program will be able to more competitively begin employment or graduate studies in financial engineering or a related field.

Upon completion of the BSFE program, students will be able to:

- apply the fundamental quantitative modeling methodologies both at the theoretical and practical levels;
- implement quantitative models and methodologies in computer code;
- present quantitative ideas both orally and in writing to technical and non-technical audiences;
- acquire employment in the financial industry in a variety of positions requiring strong quantitative and programming skills;
- continue their education in financial engineering, mathematics, computer science, or a related field in graduate school.

**5. Faculty**

This past academic year we hired five new faculty, bringing our full-time complement to thirty-one. This total is expected to be thirty-two by the fall of 2014. Our present faculty has expertise in all areas related to the proposed major and we can offer all the courses in this proposal immediately. The faculty most likely to teach these undergraduate courses are indicated below with a short professional biography included; their curriculum vitae may be found in Appendix D.
**Michael Carlisle** is a probabilist with research interests in two-dimensional random walks, Brownian motion, and financial applications of probability. He joined Baruch’s faculty after acting as teaching assistant for the MFE program’s probability sequence during his graduate studies at the CUNY Graduate Center, where he received his Ph.D.

**Jim Gatheral** was involved in all of the major derivative product areas as bookrunner, risk manager, and quantitative analyst in London, Tokyo and New York, in a career in the financial industry that spanned over 25 years. Between 1996 and 2005, he led the Equity Quantitative Analytics Group at Merrill Lynch. His current research focus is on volatility modeling and modeling equity market micro-structure for algorithmic trading. Dr. Gatheral is a frequent speaker at both practitioner and academic conferences around the world. His bestselling book, “The Volatility Surface: A Practitioner’s Guide”, has become a standard reference for practitioners, academics and students alike. In April 2013, Dr. Gatheral was named Presidential Professor at Baruch College.

**Warren B. Gordon** is the Chair of the Mathematics Department and Co-Director of the MFE Program. He has a special interest in mathematical physics, differential equations, mathematics education and the use of technology in the classroom. He holds a B.E. (Electrical) from CUNY’s City College and earned his Ph.D. in mathematics from New York University’s Courant Institute of Mathematical Sciences.

**Peter Gregory** is deputy chair of the mathematics department. He holds a BS in mathematics and a MAT (Master of Arts in teaching mathematics) from Union College in Schenectady, NY. He earned his Ph.D. in mathematics from the Graduate Center – CUNY. He was awarded the 2011 Chancellor’s Award for Excellence in Undergraduate Mathematics Education. His research interests include mathematics education and algebraic topology, in particular unstable homotopy theory.

**Sarah Harney** joined Baruch in 2003. She received her Ph.D. in mathematics from the University of Strathclyde, Scotland, and held a Post-Doc at the University of Alberta, Canada. She received an Engineering Undergraduate Teaching Award and several nominations for
Distinguished Teaching awards. Her research interests are in the area of pedagogy with a particular focus on the use of technology in the classroom.

**Douglas Howard** brings to Baruch eight years of Wall Street experience, where he developed an expertise in computational methods in finance. He continues to consult to Wall Street firms and writes about applications of probability in finance. His research on the properties of spatially disordered systems, a class of probabilistic models motivated by certain physical phenomena, was funded by a grant from the National Science Foundation (NSF). He holds a B.S. in mathematics from MIT, an M.B.A. in finance from Columbia, and a Ph.D. from the Courant Institute.

**Elena Kosygina**'s main research interests are in the areas of stochastic processes, interacting particle systems, and partial differential equations. She is also interested in applications of probabilistic techniques to finance. A graduate of Moscow State University, she received her Ph.D. from the Courant Institute.

**Andrew Lesniewski** is an expert in quantitative finance and financial engineering, and has sixteen years of industrial experience in quantitative research and modeling, risk management, and trading. He has pioneered a number of methodologies that are widely used by the financial industry, including the popular SABR model. Prior to joining Baruch, Dr. Lesniewski was the Head of Financial Engineering at the Depository Trust & Clearing Corporation, the world’s largest clearing house, and the Head of Quantitative Research at Ellington Management Group, a multibillion dollar hedge fund. Prior to that, Dr. Lesniewski was the Head of FIRST, the quantitative research team in charge of fixed income modeling in the New York office of BNP Paribas, where he also worked as a trader in charge of a number of portfolios of structured interest rate options. Dr. Lesniewski was also an adjunct professor at the Courant Institute. Before moving to industry, he was on the faculty of Harvard University. Dr. Lesniewski holds a Ph.D. in Mathematics from the Swiss Federal Institute of Technology (ETH) in Zurich, Switzerland.
Ivan Matic works in probability theory, statistical mechanics, and partial differential equations, using techniques from analysis, probability and combinatorics to study large time behavior of variational problems related to solutions of stochastic Hamilton-Jacobi equations. He is also interested in problem solving and is a co-author of the book *The IMO Compendium*. He holds a B.Sc. degree from University of Belgrade and Ph.D from the University of California at Berkeley.

Anita Mayo’s primary research interests are applied mathematics and numerical analysis. She has taught at, and been a visiting member at, several universities, and spent twenty years at the IBM Watson Research Center. She developed fast and accurate numerical methods for solving a variety of differential equations, and applied these techniques to problems in elasticity, electromagnetic theory and fluid mechanics, including some directly arising in the manufacturing of chips and recording devices. More recently, she has been working in the area of computational finance, primarily option pricing. She has a Ph.D. from the Courant Institute at NYU.

Carlos J. Moreno, who is also on the faculty of the CUNY Graduate Center, has over sixty publications, including two books, on topics related to algebra and number theory. His research, funded by several NSF grants, has earned him a reputation as a world-class mathematician. At the Graduate Center, he has had extensive experience serving as graduate thesis adviser. He earned his B.A. and his Ph.D. in mathematics at NYU.

Jarrod Pickens joined Baruch’s faculty in 2010. He holds a B.S. in Physics and Mathematics from the University of Pittsburgh, and earned a M.A. and Ph.D. in Mathematics from the University of California, Santa Barbara. His research interests include the Ricci flow and mathematical physics.

Rados Radoicic’s main research interests are in the areas of discrete and computational geometry, Ramsey theory, additive number theory, extremal combinatorics and graph theory. He is also interested in applications of probabilistic techniques to finance. He earned his B.S. and his Ph.D. in mathematics at the Massachusetts Institute of Technology. His research is
funded by the National Science Foundation.

**Anja Richter** has a background in stochastic analysis, specifically backward SDEs and affine processes. Her current focus is the application of these ideas in the modeling of volatility. More precisely she aims to address the question of how one constructs models that are arbitrage free and evolve in a time consistent fashion, as well as the fitting of these models to real data. She obtained her Ph.D. from Humboldt-Universitaet zu Berlin, and subsequently held an appointment as a post-doctoral researcher at the Swiss Federal Institute of Technology (ETH) in Zurich.

**Barry I. Shaw** has been teaching mathematics, computer algorithms and programming at Baruch for many years. He has a special interest in algorithmic graph theory and its applications to real life problems, and is involved in the study of Quantum computing. C++ is the preferred language in his computer courses, and Python for scientific and financial computing. He holds a B.A. from Yeshiva University in mathematics and physics, and M.A. and Ph.D. from the Belfer Graduate School of Science at Yeshiva University.

**Dan Stefanica** is an applied mathematician specializing in numerical methods for financial applications. He studied methods for fitting smooth yield curves to market data and wrote the book *"A Primer for the Mathematics of Financial Engineering"* and its *"Solutions Manual"*, based on material taught in the Advanced Calculus with Financial Engineering Applications refresher seminar to incoming students of the Baruch MFE Program. In other NSF-funded research with application in finance, he designed fast algorithms for the numerical solution of PDEs and worked on geophysical fluid dynamic problems. He has a Ph.D. in mathematics from the Courant Institute and is Co-Director of the Baruch MFE Program.

**Sherman Wong** works in the field of ergodic theory and dynamical systems. He has written on topological properties of systems arising from zero-finding algorithms, such as the Newton-Raphson method, the Steffenson acceleration method, and the Bairstow method. His undergraduate and doctoral degrees were earned at UC Berkeley.
Tai-Ho Wang’s work mostly focuses on option pricing in basically two directions: determining optimal model-free bounds and their corresponding hedging strategies for multi-asset options in a no-arbitrage framework, and the Lie symmetry analysis of financial models. He also works on the robustness and masking effect of certain statistical methodologies by using influence functions and their pair-perturbation counterparts. He received his B.A. and Ph.D. in applied mathematics from National Chiao Tung University, Taiwan.

Mona Zamfirescu works in the fields of probability theory, stochastic analysis, control and optimization problems and their applications to finance. She received her B.A. from the University of Bucharest and her Ph.D. in statistics from Columbia University.

**Anticipated Teaching Responsibilities**
As indicated in this proposal, there will be five new mathematics courses; this translates into about one or two additional courses each semester to be offered by the department, which presently offers about one-hundred and fifty sections each semester; an additional course or two each semester will have a minimal impact on our teaching load. The responsibility to teach the proposed financial engineering courses will be met by our full-time faculty.

**6. Facilities and Equipment**
There is no need for additional facilities or for any new equipment. The present facilities include the sophisticated Subotnick Financial Services Center as well as Bloomberg terminals readily available for our students to use.

**7. Library and Instructional Materials**
The department houses the Ercolano Library and in addition, the MFE program has a well-stocked reference library for our financial engineering students. Along with the Baruch College library, no additional library resources are needed. The department has access to various online sources which will also be available.
8. Budget

Projected Enrollment

We anticipate an entering class with about 15 – 20 students, with increasing enrollments each year until we reach about 35 – 40 students per year.

Cost Assessment

The costs associated with this program are just to cover the new courses. The first year there will be no new courses, three new courses the second and third year, and ultimately five new courses the fourth year and thereafter. Five courses would result in an additional $20,000 in adjunct replacement costs. The actual cost could be considerably less, as we offer multiple sections of lower level courses, and a significant portion of these costs can be absorbed by other existing sections by running them at near capacity.

Resources Requested

The requested resources are the adjunct replacement expenditures of: for years 2 and 3, $13,200 ($4000 + $400 fringe benefits for three courses), and $22,000 for years 4 and 5 (five courses).

9. Internal Evaluation

There is universal support for such a program at Baruch. In the appendix to this proposal there are letters of support from Myong Soo Lee, Interim Dean of the Zicklin School, as well as from James Gatheral, Presidential Professor, and Professor Andrew Lesniewski, both senior faculty in the Mathematics department. Dean Lee clearly appreciates the cumulative effect this program can have on both the Zicklin and Weissman schools. Professors Gatheral and Lesniewski each come from distinguished careers in the financial industry, and appreciate the high regard which such a program will be held by our graduates’ future employers.

During the program’s first five years of operation, the office of the Dean of the Weissman School of Arts and Science will closely track the functioning and the performance of the program. Throughout the program, emphasis will be placed on studying practical applications of mathematics in finance and building a solid mathematical understanding of financial phenomena. We therefore believe that the two most relevant measures of the success of our program will be the ability of our graduates to obtain (1) professional positions in the world of
finance, and (2) acceptance into a masters program in financial engineering. Other criteria will include:

- the number of applications received and the percent of accepted applications,
- the average SAT scores for the students admitted in the program,
- the percent of students enrolled in the program who come from schools not usually represented at the college,
- the average GPA maintained by the students,
- the length of time required by students to complete the program,
- the quality of the Capstone presentations which represent the final step required before graduation.

10. External Evaluation

We have solicited external evaluations from professionals in both academia and industry. Their letters are in Appendix C. A brief professional biography of each of them follows:

(1) Sasha Stoikov is Head of Research at Cornell Financial Engineering Manhattan and a former Senior VP in the High Frequency Trading group at Cantor Fitzgerald. He has worked as a consultant at Morgan Stanley and was an instructor at the Courant Institute of New York University and at Columbia’s IEPR department. He holds a Ph.D. from the University of Texas and a B.S. from Massachusetts Institute of Technology.

(2) Roger Lee is an Associate Professor in the Department of Mathematics at the University of Chicago. His research interests include robust pricing and hedging, implied volatility, asymptotics, and realized volatility contracts. He has a Ph.D. from Stanford and a B.A. from Harvard.

(3) Peter Carr is a Managing Director at Morgan Stanley with 15 years of experience in the derivatives industry. He was also a finance professor for eight years at Cornell University, after obtaining his PhD from UCLA in 1989. He is presently the Executive Director of the Math Finance program at NYU's Courant Institute, the Treasurer of the
Bachelier Finance Society, and a trustee for the Museum of Mathematics in New York. He has over 70 publications in academic and industry-oriented journals and serves as an associate editor for eight journals related to mathematical finance. He was selected as Quant of the Year by Risk Magazine in 2003 and shared in the ISA Medal for Science in 2008. The International Association of Financial Engineers (IAFE) and Sungard jointly selected Dr. Carr as its 2010 Financial Engineer of the Year.

(4) Alireza Javaheri is the Head of Equities Quantitative Research Americas at J.P. Morgan. He has been working since 1994 in the field of derivatives quantitative analysis in various investment banks including Goldman Sachs and Citigroup. He holds an M.Sc. in Electrical Engineering from Massachusetts Institute of Technology and a Ph.D. in Finance from Ecole des Mines de Paris. He is also a CFA charter holder. He has authored several quantitative finance papers on the subject of volatility, including articles with Peter Carr, Paul Wilmott and Espen Haug. His book "Inside Volatility Arbitrage" was elected the quantitative finance book of the year by Wilmott magazine.

(5) Robert Almgren is a Co-founder of Quantitative Brokers. Until 2008, Dr. Almgren was a Managing Director and Head of Quantitative Strategies in the Electronic Trading Services group of Banc of America Securities. From 2000-2005, he was a tenured Associate Professor of Mathematics and Computer Science at the University of Toronto, and Director of its Master of Mathematical Finance Program. Before that, he was an Assistant Professor of Mathematics at the University of Chicago and Associate Director of the Program on Financial Mathematics. Dr. Almgren holds a B.S. in Physics and Mathematics from the Massachusetts Institute of Technology, an M.S. in Applied Mathematics from Harvard University, and a Ph.D. in Applied and Computational Mathematics from Princeton University. He has an extensive research record in applied mathematics, including several papers on optimal securities trading, transaction cost measurement, and portfolio formation.
There is universally strong support indicating the value and rigor of the proposed major, as well as a need and opportunities for its graduates. Students with a strong background in financial mathematics will have opportunities to pursue graduate programs at the best universities and find excellent employment opportunities in the financial sector.
CURRICULUM FORM A

NEW COURSE PROPOSAL

WEISSMAN SCHOOL OF ARTS & SCIENCES
PLEASE RETURN THIS FORM TO SONYA WAHAB, OFFICE OF THE ASSOCIATE DEAN, B8-265

DEPARTMENT: Mathematics        COURSE NUMBER: 3050        DATE: October 7, 2013
COURSE TITLE: Multi-variable and Vector Calculus        CREDITS: 4        HOURS PER WEEK: 4

LEARNING GOALS OF COURSE:

Upon completion of this course students will be able to:

1. perform vector operations with dot and cross products; analyze the motion of an object in the space.
2. use equations to describe curves and surfaces in the space; find arc length and curvature.
3. find domains, limits, and partial derivatives of multivariable functions, compute directional derivatives and gradients, apply derivative analysis to geometric problems, approximation problems, and optimization problems.
4. evaluate double and triple integrals and use them to find the volume, center of mass, moments of inertia and surface area.
5. evaluate line integrals and surface integrals, understand and use the major theorems in vector calculus (the Fundamental Theorem of Line Integral, Green’s theorem, Stokes’ theorem, and the Divergence theorem); apply vector analysis to potential and conservation of energy problems.

LEVEL: TIER 3
FREQUENCY OF OFFERING: Every Year        PROJECTED ENROLLMENT: 25-30
PREREQUISITES: MTH 3010 with a B+ or higher, or Calculus BC with a grade 4 or 5
COREQUISITE(S): NONE

OTHER DEPARTMENT(S) CONSULTED:
OTHER SCHOOL(S) CONSULTED: ( ZSB _____ SPA _____)
CROSS-LISTED IN _________________________ DEPARTMENT(S) (If applicable)

BULLETIN DESCRIPTION:
In this course, the primary goal is to study the geometry of change in two and three dimensional space. In particular, we use vectors to mathematically describe curves and surfaces in space, and to study the derivatives (rates of change) and integrals (average properties) of functions and vector fields that are defined on curves and surfaces. The unity between geometry and algebra is
most succinctly expressed in the four versions of the Fundamental Theorem of Calculus we study: the fundamental theorem of calculus for vector fields on curves, Green's theorem, Stokes' theorem, the Divergence theorem and applications. The emphasis will be on the understanding the geometry behind numerous algebraic manipulations, while providing a bit more focus on mathematical concepts.

RATIONALE:
This is a required course for Financial Engineering majors. Essentially, this course modifies MTH 3020, adding the main theorems of vector calculus needed for the course on numerical methods for differential equations in finance (MTH 4115).

PLEASE ATTACH:
(1) COURSE OUTLINE
(2) NAME OF REQUIRED TEXT(S) AND READINGS
(3) EVALUATIVE CRITERIA

APPROVED BY DEPARTMENT DATE 11/12/13
APPROVED BY WSAS CURRICULUM COMMITTEE DATE: 11/14/13
APPROVED BY WSAS FACULTY DATE: 12/11/13
Curriculum for Mathematics 3050 - Multi-variable and Vector Calculus


Course Outline:

- Vectors, dot product, determinant, cross product, linear transformations, inverse matrices
- Equations of planes, distances, parametric equations for lines and curves
- Arclength, velocity, acceleration, Kepler’s laws
- Level curves, partial derivatives, tangent plane approximations
- Max-min problems
- Least squares, second derivative test
- Differentials, chain rule
- Gradient, tangent plane, directional derivative
- Lagrange multipliers
- Partial differential equations
- Double integrals
- Polar coordinates, applications
- Change of variables
- Vector fields and line integrals in the plane
- Path independence and conservative fields
- Gradient fields and potential functions
- Green’s theorem
- Flux, normal form of Green’s theorem, simply connected regions
- Triple integrals in rectangular and cylindrical coordinates
- Spherical coordinates, surface area
- Vector fields in 3D, surface integrals and flux
- Divergence theorem, applications and proof
- Line integrals in space, curl, exactness and potentials
- Stokes’ theorem
- Topological considerations, Maxwell’s equations

Evaluation: Periodic class tests counting two-thirds of the grade; a cumulative final exam counting one-third of the grade. Graded problem-sets and quizzes may augment the class-test average.
CURRICULUM FORM A
NEW COURSE PROPOSAL
WEISSMAN SCHOOL OF ARTS & SCIENCES
PLEASE RETURN THIS FORM TO SONYA WAHAB, OFFICE OF THE ASSOCIATE DEAN, B8-265

DEPARTMENT: Mathematics COURSE NUMBER: 4000 DATE: October 8, 2013
COURSE TITLE: Bridge to Higher Mathematics CREDITS: 3 HOURS PER WEEK: 4

LEARNING GOALS OF COURSE:
Upon completion of this course, students will be able to:

• explain and apply the basic methods of contemporary mathematics. They will be able to use these methods in subsequent courses in probability (MTH4120), stochastic processes (MTH 4125), graph theory (MTH 4140), combinatorics (MTH 4150), algorithms, computers and programming (MTH 4300), introductory financial mathematics (MTH 4500), and 5000-level courses in financial engineering.
• use logical notation to define and reason about fundamental mathematical concepts such as sets, relations, functions, and integers.
• evaluate elementary mathematical arguments and identify fallacious reasoning (not just fallacious conclusions).
• synthesize induction hypotheses and simple induction proofs.
• prove elementary properties of modular arithmetic and explain their applications in computer science, for example, in cryptography and hashing algorithms.
• apply graph theory models of data structures and state machines to solve problems of connectivity and constraint satisfaction, for example, scheduling.
• apply the method of invariants and well-founded ordering to prove correctness and termination of processes and state machines.
• derive closed-form and asymptotic expressions for sequences defined by recurrences.
• calculate numbers of possible outcomes of elementary combinatorial processes such as permutations and combinations.
• calculate probabilities and discrete distributions for simple combinatorial processes; calculate expectations.
• solve brainteasers and puzzles, often faced in job interviews across the financial and software sector, and study in a small team with fellow students.
• understand the basic concepts of analysis and topology such as (un)countable sets, metric spaces, open/closed/bounded/compact/connected sets, which will provide a necessary foundation for potential graduate-level study of probability theory and stochastic calculus.

LEVEL: TIER 3
FREQUENCY OF OFFERING: Every Year PROJECTED ENROLLMENT: 25-30
PREREQUISITES: MTH 3010 COREQUISITE(S): NONE
BULLETIN DESCRIPTION: This class introduces the fundamental and unifying concepts of the contemporary mathematics. Topics covered divide into four categories: 1) fundamental concepts of mathematics: definitions, proofs, sets, functions, elementary number theory; 2) discrete structures: graphs, counting; 3) discrete probability theory; 4) elements of analysis and topology. The underlying goal is to teach students about careful mathematics: precisely stating assertions about well-defined mathematical objects and verifying these assertions using mathematically sound proofs.

RATIONALE:
This is a required course for Financial Engineering majors. It provides the bridge to advanced mathematics that is necessary for further studies in probability theory, statistics, algorithm design, and mathematical finance.

PLEASE ATTACH:
(1) COURSE OUTLINE
(2) NAME OF REQUIRED TEXT(S) AND READINGS
(3) EVALUATIVE CRITERIA

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swahab 8/10 CURR FORM A
Curriculum for Mathematics 4000 – Bridge to Higher Mathematics

Recommended textbooks:

Course Outline:

1. Logical foundations (propositional logic, predicates, quantifiers, Russell paradox)
2. Proof techniques (proofs by contradiction, mathematical induction, invariants).
3. Number theory (divisibility, primes, modular arithmetic, RSA)
4. Functions (relations, inverse functions, bijections)
5. Ordered sets, irrational, algebraic and transcendental numbers. real and complex number fields, Euclidean spaces
6. Counting (combinations, permutations, words, inclusion-exclusion, recurrences, generating functions)
7. Discrete probability (conditional probability, random variables, expectation, variance, discrete probability distributions, Markov inequality, Chebyshev inequality)
8. Elements of analysis and topology ((un)countable sets, metric spaces, open/closed/bounded/compact/connected sets, Cantor set, Heine-Borel theorem, Weierstrass theorem)
9. Graph theory (trees, matchings, connectivity, coloring, scheduling, TSP, digraphs, state machines)
10. Optimization (linear programming, simplex algorithm)

Evaluation: Periodic class tests counting two-thirds of the grade; a cumulative final exam counting one-third of the grade. Graded problem-sets and quizzes may augment the class-test average.
CURRICULUM FORM A

NEW COURSE PROPOSAL

WEISSMAN SCHOOL OF ARTS & SCIENCES
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COURSE TITLE: Numerical Methods for Differential Equations in Finance

CREDITS: 4                           HOURS PER WEEK: 4

LEARNING GOALS OF COURSE:
Upon completion of this course students will be able to
1. Find closed form solutions to ordinary and partial differential equations derived from
   financial models
2. Derive the celebrated Black-Scholes formula by solving the Black-Scholes PDE
3. Compute values of European, American, and exotic options using finite difference
   numerical methods
4. Download options market data and use it as input for codes generating implied volatility
   surfaces.

LEVEL: TIER 3

FREQUENCY OF OFFERING: Every Year       PROJECTED ENROLLMENT: 25-30

PREREQUISITES: MTH 3030 or MTH 3050, MTH 4100        COREQUISITE(S): NONE

OTHER DEPARTMENT(S) CONSULTED:
OTHER SCHOOL(S) CONSULTED: ( ZSB _____ SPA _____)  
CROSS-LISTED IN _________________________ DEPARTMENT(S) (If applicable)

BULLETIN DESCRIPTION: This course covers exact solutions of ordinary and partial
differential equations, as well as numerical solutions to these differential equations using finite difference
methods. The financial applications include the Black-Scholes model and corresponding formulas, as well
as practical issues of computing implied volatilities for American and European options from market data.
The course will provide students with practical numerical tools for financial derivatives
valuation.

RATIONALE:
This is a required course for Financial Engineering majors. It can be also taken as an elective by
advanced actuarial science and mathematics majors.

PLEASE ATTACH:
1. COURSE OUTLINE
2. NAME OF REQUIRED TEXT(S) AND READINGS
3. EVALUATIVE CRITERIA

APPROVED BY DEPARTMENT DATE 11/12/13
APPROVED BY WSAS CURRICULUM COMMITTEE DATE: 11/14/13
APPROVED BY WSAS FACULTY DATE: 12/11/13

swahab 8/10 CURR FORM A

BSFE Proposal A-7
Curriculum for MTH 4115 - Numerical Methods for Differential Equations in Finance

Textbooks:


Course Outline:

2. Linear ODEs with constant coefficients. Linear ODEs with variable coefficients.
3. Perpetual options pricing.
4. Euler’s method and the trapezoidal rule for solving ODEs.
5. Parabolic, hyperbolic, and elliptic PDEs. Fundamental solution and general solution for the diffusion equation.
7. The Black-Scholes PDE. Exact solution and Black-Scholes formulas.
9. Numerical solution of the Black-Scholes PDE.
10. American options valuation using finite differences.
11. Implied volatility computation using finite difference methods from options market data.
12. PDE formulation and numerical valuation for Asian options.

Evaluation: Graded problem-sets will count as one third of the grade. A midterm exam will count as one third of the grade. A cumulative final exam will count as one third of the grade.
DEPARTMENT: Mathematics      COURSE NUMBER: 4600        DATE: October 27, 2013

COURSE TITLE: Data Analysis and Simulation for Financial Engineers

CREDITS: 4                           HOURS PER WEEK: 4

LEARNING GOALS OF COURSE:
Upon completion of this course students will be able to:

1. analyze the risk profile of a portfolio by means of the CAPM (Capital Asset Pricing Model) and APT (Arbitrage Pricing Theory) frameworks using such tools as linear regression, principal component and factor analysis
2. analyze univariate financial time series using (a) basic statistical methodologies such as histograms, empirical distribution functions, maximum likelihood estimators; (b) one of the standard time series models
3. estimate stochastic volatility using the GARCH model
4. sample from various distributions, simulate data sets and basic stochastic processes
5. apply MCMC (Markov Chain Monte Carlo) methods to analysis of financial data
6. use an HMM (Hidden Markov Model) or a Kalman filter to predict or smooth financial time series
7. construct an optimal portfolio by using mean-variance analysis
8. perform risk assessment of a portfolio using VaR (Value-at-Risk) and CVaR (Conditional Value-at-Risk) estimation

LEVEL: TIER 3

FREQUENCY OF OFFERING: Every Year               PROJECTED ENROLLMENT: 25-30

PREREQUISITES: MTH 4125, MTH 4130, MTH 4500
COREQUISITE(S): NONE

OTHER DEPARTMENT(S) CONSULTED: ( ZSB______ SPA _____)
OTHER SCHOOL(S) CONSULTED: ( ZSB______ SPA _____)
CROSS-LISTED IN _________________________ DEPARTMENT(S) (If applicable)

BULLETIN DESCRIPTION: This is a “capstone” course for financial engineering majors which brings to life their sophisticated mathematical background (in probability, stochastic processes, statistics, and financial mathematics) by connecting it to hands-on analysis of data and simulation techniques needed for real world financial engineering applications. Course topics
include time series analysis, Markov Chain Monte Carlo methods, hidden Markov models, portfolio risk management.

**RATIONALE:**
This is a required course for Financial Engineering majors. It relies on a sophisticated mathematical background acquired in prerequisite courses and equips students with modern data analysis and simulation techniques used in financial engineering industry.

**PLEASE ATTACH:**
(1) COURSE OUTLINE
(2) NAME OF REQUIRED TEXT(S) AND READINGS
(3) EVALUATIVE CRITERIA

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swahab 8/10 CURR FORM A
Curriculum for MTH 4600 – Data Analysis and Simulation for Financial Engineers

The course readings will be based on instructor's notes and readings from several sources. The following text will be used as a principal reference:


Other recommended texts:

Course Outline:

- Basic Financial Data Analysis (*6 hours*)
  - Cross-sectional and time series data
  - Descriptive statistics
  - Histograms
  - Distribution functions and likelihood functions
- Multivariate models (*8 hours*)
  - Review of multi-normal distribution
  - Cholesky decomposition and simulating multi-normal variables
  - Linear regression models
  - CAPM (Capital Asset Pricing Model)
  - Principal component analysis and factor analysis
  - APT (Arbitrage Pricing Model)
- Time series models (*10 hours*)
  - Stationarity, correlations and autocorrelations
  - AR models
  - MA models
  - ARMA models
  - Unit roots and the Dickey-Fuller test
  - Cointegration
  - Stochastic volatility and GARCH
- Bayesian Data Analysis and Markov Chain Monte Carlo (*8 hours*)
  - Review of Bayes’ theorem, prior and posterior distributions
  - Review of Markov chains
  - Metropolis-Hastings algorithm
  - Gibbs sampler
• State space models (8 hours)
  ° Hidden Markov models
    ▪ Maximum likelihood for the HMM
    ▪ The sum-product algorithm
    ▪ The Viterbi algorithm
  ° Linear dynamical systems and the Kalman filter
• Non-parametric methods (6 hours)
  ° Kernel smoothing
  ° Splines and curve fitting
  ° Treasury curve construction
• Portfolio risk management (8 hours)
  ° Review of the mean variance portfolio model
  ° The Black-Litterman model
  ° VaR and CoVaR
  ° Postmodern portfolio theory

**Evaluation:** One midterm exam counting one third of the grade, several computational homework assignments counting one third of the grade, and a cumulative final exam counting one-third of the grade.
CURRICULUM FORM A

NEW COURSE PROPOSAL

WEISSMAN SCHOOL OF ARTS & SCIENCES
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DEPARTMENT: Mathematics  COURSE NUMBER: 5500  DATE: October 17, 2013

COURSE TITLE: Stochastic Calculus for Finance
CREDITS: 4  HOURS PER WEEK: 4

LEARNING GOALS OF COURSE:
Upon completion of this course students will be able to
(a) define the Ito stochastic integral, account for its significance, and perform basic calculations
(b) use Ito's formula in a variety of contexts and interpret the results
(c) solve basic stochastic differential equations arising in financial modeling
(d) explain and apply the change-of-measure technique for risk-neutral valuation of financial derivatives

LEVEL: TIER 3
FREQUENCY OF OFFERING: Every Year  PROJECTED ENROLLMENT: 25-30

PREREQUISITES: MTH 4120, MTH 4125, MTH 4500  COREQUISITE(S): NONE

OTHER DEPARTMENT(S) CONSULTED:
OTHER SCHOOL(S) CONSULTED: (ZSB _____ SPA _____)
CROSS-LISTED IN _________________________ DEPARTMENT(S) (If applicable)

BULLETIN DESCRIPTION: This course is an introduction to stochastic calculus and its applications to modern finance. The core topics developed in the course are the Ito stochastic integral, Ito's formula, and basic stochastic differential equations. The course will provide students with indispensable tools for valuation of financial derivatives and for keeping up with developments in financial modeling.

RATIONALE
This is a required course for Financial Engineering majors. It can be also taken as an elective by advanced actuarial science and mathematics majors.

PLEASE ATTACH:
1. COURSE OUTLINE
2. NAME OF REQUIRED TEXT(S) AND READINGS
3. EVALUATIVE CRITERIA

APPROVED BY DEPARTMENT  DATE: 11/12/13
APPROVED BY WSAS CURRICULUM COMMITTEE  DATE: 11/14/13
APPROVED BY WSAS FACULTY  DATE: 12/11/13

swahab 8/10 CURR FORM A
Curriculum for Mathematics 5500 - Introductory Stochastic Calculus for Finance


Course Outline:

1. Review of key concepts of probability and stochastic processes needed for stochastic calculus
2. Ito stochastic integral and its properties
3. Ito's formula and its variants
4. Ito stochastic differential equations
5. The general linear stochastic differential equations
7. Applications of stochastic calculus to valuation of financial derivatives

Evaluation: Periodic class tests counting two-thirds of the grade; a cumulative final exam counting one-third of the grade. Graded problem-sets and quizzes may augment the class-test average.
Appendix B

Internal Letters of Support

The internal letters are from:

(1) Myung Soo Lee, Interim Dean, Zicklin School of Business
(2) James Gatheral, Presidential Professor of Mathematics
(3) Andrew Lesniewski, Professor of Mathematics
October 23, 2013

Warren Gordon, Ph.D.
Professor & Chair
Department of Mathematics
Weissman School of Arts and Sciences
Baruch College, City University of New York
One Bernard Baruch Way
New York, New York 10010

Dear Warren:

After reviewing your curriculum development on a financial mathematics major under the Department of Mathematics, I conclude that the Zicklin School of Business can hugely benefit from the new major graduates when they pursue masters level degrees at the Zicklin School. The School offers MBA in Finance and MS in Finance degrees where the graduates with a BA in mathematics with a financial mathematics major will do very well given the strong quantitative training offered by the major. Since we now have a joint doctoral program in business through Baruch College and The Graduate Center, I can expect that some of the program graduates may apply for the Zicklin School's doctoral programs in finance.

Given the potential contribution of the graduates of the financial mathematics major of your BA in mathematics program, I strongly support for the creation of such major.

Please let me know if you need any further feedback on the process.

Best,

[Signature]

Myung Soo Lee
Interim Dean
October 24th, 2013

Warren B. Gordon, Ph.D.
Professor and Chair
Department of Mathematics

Dear Warren,

I am writing to express my strong support for the proposal to offer a new Bachelor of Science in Financial Engineering (BSFE) program.

From the perspective of the Department of Mathematics and the Weissman School of Arts and Sciences, the proposed new degree program promises to attract highly motivated and talented students. Such students are not only a pleasure to teach but they enrich the educational environment for all other students and help raise standards overall. Our excellent faculty, already familiar with the requirements of teaching financial mathematics and engineering at the masters level, will be more than up to the task of meeting the expectations of these excellent undergraduate students and their future employers.

Indeed, as a former practitioner, I can predict that holders of the proposed Bachelor of Science in Financial Engineering degree are likely to be very attractive to employers in the financial industry; graduates can expect to find roles in investment banks, asset management companies, hedge funds, regulatory agencies and so on. Sufficiently motivated students can also expect to be admitted to leading masters and PhD programs.

I see this new program as reflecting a new trend to study and teach concrete and applicable mathematics: mathematics that is no less rigorously taught but with an emphasis on computation and applicability. I thus believe that this proposal to offer the BSFE is significant and important.

In summary, I offer this proposed Bachelor of Science in Financial Engineering degree program my strongest possible support.

Best regards,

Jim Gatheral
Presidential Professor
October 24, 2013

Warren B. Gordon, Ph.D.
Professor and Chair
Department of Mathematics

Dear Warren,

It is my pleasure to enthusiastically endorse the proposal to establish a B.S. program in Financial Engineering.

The Math Department of Baruch College is uniquely positioned to offer a high quality B.S. program in Financial Engineering. The department has a substantial body of qualified and dedicated faculty who will provide the highest level of instruction in applied mathematics and financial engineering. In particular, the program will leverage the existing highly successful M.S. program, its strong ties with the financial industry, and synergies arising from its relationship with the Zicklin School of Business.

Recent transformations taking place within the financial industry have, in particular, created increased demand for people with broad understanding of the issues of quantitative finance and financial engineering. These changes require from job candidates, both on the sell side and on the buy side, understanding of the cutting-edge financial modeling methodologies and sound risk management practices, ability to process and interpret large amounts of financial data, as well as possess specific computer skills. I expect that these trends will continue in the foreseeable future.

In order to meet these demands, the program, by its nature, has to be interdisciplinary. The proposed curriculum is carefully designed to reflect the current thinking in the financial industry, and to equip the students with a skill set that will enable them to succeed in the very competitive marketplace. It encompasses relevant elements of applied mathematics, financial economics, modern statistics, and computer science. It will be an exciting offer to prospective Baruch students, and it will cater to specific financial job market needs.

Best regards,

[Signature]

Andrew Lesniewski
Professor of Mathematics
Appendix C

External Letters of Support

The external letters are from:

(1) Professor Sasha Stoikov, Cornell University
(2) Professor Roger Lee, University of Chicago
(3) Peter Carr is a Managing Director at Morgan Stanley.
(4) Robert Almgren is a Co-founder of Quantitative Brokers.
(5) Alireza Javaheri is the Head of Equities Quantitative Research Americas at J.P. Morgan.
October 18, 2013

To whom it may concern,

With this letter, I would like to convey my enthusiastic support for the proposal to start a BS in Financial Engineering at Baruch College.

The ORIE department at Cornell runs a Masters of Engineering program, with a Financial Engineering option, and the type of candidate that your undergraduate FE program would produce would be ideal to our program. Our admissions screening looks for undergraduate students with outstanding skills in (1) mathematics or physics (2) computer science and (3) finance or economics. The proposed curriculum covers all these areas.

Moreover, our applicants that have strong backgrounds in these areas are often international students and sometimes lack the English and communications skills necessary for a professional environment. Having access to students from your program, who presumably are all fluent in English would be very valuable for us.

Please let me know if you need any additional information on our program.

Sincerely yours,

Sasha Stoikov
sfs33@cornell.edu

[Signature]
October 30, 2013

To whom it may concern:

I have reviewed the proposal, provided to me by Professor Jim Gatheral, for a Bachelor of Science degree in Financial Engineering at Baruch College.

In my view the proposed curriculum has sufficient breadth, depth, and intellectual rigor to qualify as an undergraduate degree program. In addition it provides training of a type important in careers and in graduate degree programs in STEM fields, especially fields involving risk and uncertainty, such as quantitative finance.

With its distinguished faculty and its highly-regarded Masters of Financial Engineering Program, Baruch is well-positioned for success in offering the BSFE degree. I believe the BSFE will be an asset to the students, to Baruch, to the financial industry, and to graduate programs (including the Masters program in which I teach) seeking well-trained students.

Thus I strongly support this proposal.

Sincerely,

Roger Lee
Associate Professor of Mathematics
University of Chicago
Morgan Stanley

November 4, 2013

Warren B. Gordon, Professor and Chair
Department of Mathematics
Baruch College-CUNY, Box B6-230
One Bernard Baruch Way
New York, NY 10010

Dear Professor Gordon,

I am writing this letter in support of the new bachelor's degree program in Financial Engineering that you proposed to create in the Department of Mathematics at Baruch College.

I am currently Managing Director and Global Head of Market Modeling at Morgan Stanley. Prior to this, I was Head of Quantitative Financial Research at Bloomberg L.P. I was also a finance professor for 8 years at Cornell University, and I am presently the Executive Director of the Math Finance program at NYU's Courant Institute, the Treasurer of the Bachelor Finance Society, and a trustee for the Museum of Mathematics in New York. I was selected as Quant of the Year by Risk Magazine in 2003, shared in the ISA Medal for Science in 2008, and was the 2010 IAFE Financial Engineer of the Year.

Based on my industry experience, talented undergraduates with strong knowledge of mathematical models in finance and strong programming skills are valuable potential hires, albeit exceedingly rare to find. Your department has a strong track record of graduating highly employable graduate students from your Financial Engineering Masters Program, as well as a strong faculty that includes full-time members who were distinguished practitioners prior to joining your department. You are very well positioned to establish a strong and very successful bachelor's degree in financial engineering, and I was impressed with the fact that you will also ensure that the students in the financial engineering major will also be equipped with very good communication skills.

Good luck with your new program.

Sincerely,

Peter P. Carr
Managing Director
November 3, 2013

Professor Warren B. Gordon, Chair
Department of Mathematics
Baruch College-CUNY, Box B6-230
One Bernard Baruch Way
New York, NY 10010

Dear Professor Gordon:

I am writing in support of your proposed new Bachelor of Science in Financial Engineering.

I am co-founder, President, and Head of Research at Quantitative Brokers, a small agency algorithmic brokerage firm specializing in interest rate products. As our name implies, we focus on quantitative analysis and understanding of market microstructure.

We are big fans of mathematical finance programs. One of our first hires, and a stellar member of our team, is a graduate of Baruch's Masters Program in Financial Engineering. In my quant group I have a graduate of Columbia University's B.S. in Financial Engineering, in the Industrial Engineering and Operations Research department.

I believe that graduates of the new Bachelor of Science degree will easily find employment opportunities in the industry. They will also be well placed to continue into graduate programs like the Baruch MFE or other programs.

Please don't hesitate to contact me if I can help in any way.

Sincerely yours,

Robert F. Almgren
ralgreen@quantitativebrokers.com
October 29, 2013

To: Warren B. Gordon, Professor and Chair
Department of Mathematics
Baruch College, City University of New York
One Bernard Baruch Way
New York, NY 10010

Dear Professor Gordon,

The new Baruch bachelor's degree in financial engineering (BSFE) seems very well thought of and comprehensive. It has a strong chance of being successful based on the track record of the Baruch MFE program and the brilliant faculty available in the department. The BSFE could serve both as a preparation for MFE and a pipeline for Analyst programs in investment banks. We have had several Baruch MFE associates and have been very impressed by their knowledge and abilities. We look forward to seeing BSFE analysts being equally successful.

I am the Head of Equities Quantitative Research Americas at J.P. Morgan and Adjunct Professor of Mathematical Finance at Baruch College as well as the Courant Institute of NYU. I have been working since 1994 in the field of derivatives quantitative research in various investment banks including Goldman Sachs and Citigroup. I hold an M.Sc. in Electrical Engineering from the Massachusetts Institute of Technology and a Ph.D. in Finance from Ecole des Mines de Paris and I am also a CFA charter holder. I authored a book and several quantitative finance papers on the subject of volatility.

With best regards,

[Signature]

Alireza Javaheri

Head Of Equities Quantitative Research Americas
J.P. Morgan
383 Madison Avenue, New York, NY, 10179
phone: +1 212 622 0438
email: alireza.javaheri@jpmorgan.com
Appendix D

Faculty Curriculum Vitae

This Appendix contains the (Baruch style) curriculum vitae for the following faculty:

1) Michael Carlisle
2) James Gatheral
3) Warren B. Gordon
4) Sarah Harney
5) C. Douglas Howard
6) Elena Kosygina
7) Andrew Lesniewski
8) Ivan Matic
9) Anita Mayo
10) Carlos J. Moreno
11) Jarrod Picken
12) Rados Radoicic
13) Beryl Shaw
14) Dan Stefanica
15) Tai Ho Wang
16) Sherman Wong
17) I. Mona Zamfirescu
Carlisle, Michael

1. EDUCATION:

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<th>Field</th>
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<tr>
<td>Ph D</td>
<td>CUNY Graduate Center</td>
<td>Mathematics</td>
<td>2012</td>
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<tr>
<td>MPhil</td>
<td>CUNY Graduate Center</td>
<td>Mathematics</td>
<td>2008</td>
</tr>
<tr>
<td>BA</td>
<td>New College of Florida</td>
<td>Mathematics / Computer Science</td>
<td>2001</td>
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2. FULL-TIME ACADEMIC EXPERIENCE:

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<th>Institution</th>
<th>Rank</th>
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<th>Dates</th>
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<tbody>
<tr>
<td>Baruch College, CUNY</td>
<td>Assistant Professor</td>
<td>Mathematics</td>
<td>August 20, 2012 - Present</td>
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3. PART-TIME ACADEMIC EXPERIENCE:

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<th>Institution</th>
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<tr>
<td>Fashion Institute of Technology</td>
<td>Adjunct Lecturer</td>
<td>Mathematics</td>
<td>August 20, 2009 - December 31, 2012</td>
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<tr>
<td>Baruch College, CUNY</td>
<td>Teaching Assistant</td>
<td>Mathematics</td>
<td>August 20, 2007 - August 20, 2012</td>
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4. NON ACADEMIC EXPERIENCE:

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<th>Place of Employment</th>
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<tr>
<td>MathLynx</td>
<td>Mathematics Developer</td>
<td>November 1, 2010 - December 31, 2012</td>
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5. EMPLOYMENT RECORD AT BARUCH:

<table>
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<th>Rank</th>
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<tr>
<td>Assistant Professor</td>
<td>August 20, 2012 - Present</td>
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<tr>
<td>Teaching Assistant</td>
<td>August 20, 2007 - August 20, 2012</td>
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6. PUBLICATIONS IN FIELD OF EXPERTISE:

A. Books:

B. Papers in Professional Journals:

(1) Articles:


(2) Proceedings:

C. Chapters in Books:


D. Government Reports or Monographs:

E. Book Reviews:

7. OTHER PUBLICATIONS:


8. PRESENTED PAPERS, LECTURES, AND EXHIBITIONS AND PERFORMANCES:


Carlisle, M., 6th Annual Graduate Student Conference in Probability, The School of Mathematics at Georgia Tech, Georgia Institute of Technology, Atlanta, GA, "Late Points of Two-Dimensional Random Walks", National, No, Accepted. (April 27, 2012).
Carlisle, M., Technology in Mathematics Instruction Conference 2010, CUNY, CUNY Graduate Center, New York, NY, "CUNYMath: A Central Web Presence for the CUNY Mathematics Community", Local, No, Accepted. (June 8, 2010).

9. **WORK IN PROGRESS:**
   A. Papers submitted to journals for consideration.
   B. Other completed papers.
   C. Research in progress.


10. **PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS:**

11. **GRANTS-IN-AID:**

12. **INSTITUTIONAL SERVICE:**
   A. **Service to the Department**

   Final Exams, Committee Member, approximately 20 hours spent for the year, Yes, appointed, Pro Bono, organization, administration of uniform final exams. (August 27, 2012 - Present).

   process, proctor, head proctor uniform final exams

   Masters in Finance, Committee Member, approximately 120 hours spent for the year, Yes, appointed, Compensated, management of MFE curricula, programs, and applications. (August 27, 2012 - Present).

   support of MFE curricula, pre-MFE and refresher programs, MFE applications

   B. **Service to the School**

   C. **Service to the College**

   D. **Service to the Graduate Center**

   E. **Service to the University**
CUNYMath Website, Committee Member, No, neither, Compensated, discussing, organizing, approving content for CUNYMath website. (August 1, 2007 - May 31, 2011).
constructed, wrote, edited content for CUNYMath website

13. OFFICES HELD IN PROFESSIONAL SOCIETIES:

Institute of Electrical and Electronics Engineers, IEEE, International. (September 3, 2013 - Present).


Institute of Mathematical Sciences, IMS, International. (August 1, 2009 - Present).

Mathematical Association of America, MAA, National. (August 20, 2007 - Present).


14. OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE:

Probability in the Engineering and Informational Sciences, Reviewer, Journal Article, approximately 5 hours spent for the year, No, neither, Pro Bono, National.
peer-review article for publication

15. TEACHING ACTIVITIES AT BARUCH:

A. Courses Taught

MTH 2205, Applied Calculus II, 32, 3 credit hours, Lower Division, Undergraduate, Classroom, (Fall 2013).

MTH 4100, Linear Algebra, 35, 3 credit hours, Upper Division, Undergraduate, Classroom, (Fall 2013).

MTH 2003, Pre-calculus and Elements of Calculus, 36, 3 credit hours, Lower Division, Undergraduate, Classroom, (Summer 2013).

MTH 4500 - 1557, Intro to Financial Mathematics, 30, 4 credit hours, Upper Division, Undergraduate, Classroom, (Spring 2013).

MTH 2610 - 0532, Calculus I, 15, 4 credit hours, Lower Division, Undergraduate, Classroom, (Fall 2012).
Gatheral, James

1. **EDUCATION:**

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<td>Ph D</td>
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<td>Physics</td>
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<td>BSc</td>
<td>University of Glasgow</td>
<td>Mathematics</td>
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2. **FULL-TIME ACADEMIC EXPERIENCE:**

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<td>Baruch College, CUNY</td>
<td>Professor</td>
<td>Mathematics</td>
<td>2011 - Present</td>
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3. **PART-TIME ACADEMIC EXPERIENCE:**

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<tr>
<td>Copenhagen Business School</td>
<td>Adjunct Professor</td>
<td>Mathematics</td>
<td>May 2009</td>
</tr>
<tr>
<td>African Institute of Mathematical Sciences, Cape Town</td>
<td>Adjunct Professor</td>
<td>Mathematics</td>
<td>February 2009</td>
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<td>Courant Institute, NYU</td>
<td>Adjunct Professor</td>
<td>Mathematics</td>
<td>2000 - 2007</td>
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<tr>
<td>Courant Institute, NYU</td>
<td>Adjunct Professor</td>
<td>Mathematics</td>
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4. **NON ACADEMIC EXPERIENCE:**

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<tr>
<td>Merrill Lynch, New York, NY</td>
<td>Managing Director</td>
<td>1995 - Present</td>
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<td>BT Asia Securities Ltd., Tokyo, Japan</td>
<td>Managing Director/General Manager</td>
<td>1990 - 1992</td>
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5. **EMPLOYMENT RECORD AT BARUCH:**

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6. **PUBLICATIONS IN FIELD OF EXPERTISE:**

A. Books:

B. Papers in Professional Journals:
   (1) Articles:


(2) Proceedings:
C. Chapters in Books:

D. Government Reports or Monographs:

E. Book Reviews:

7. OTHER PUBLICATIONS:


8. PRESENTED PAPERS, LECTURES, AND EXHIBITIONS AND PERFORMANCES:

Gatheral, J., Inaugural Bloomberg Quant Seminar, New York City, "The Volatility Surface: Statics and Dynamics".

Gatheral, J., Osaka University, "Arbitrage-Free SVI Volatility Surfaces". (December 2012).


Gatheral, J., National School of Development, Perkin University, "The Execution Puzzle: How and When to Trade to Minimize Cost". (December 2012).


Gatheral, J., Fall Conference, Boston, "Optimal Order Execution JOIM". (October 2011).


Gatheral, J., American Mathematical Society, 2009 Fall Eastern Section Meeting, University Park, PA. (October 2009).


Gatheral, J., Bachelier Congress, London (Plenary talk), ""Consistent Modeling of SPX and VIX Options"". (July 2008).


Gatheral, J., Risk 2000 USA, Boston, USA, ""Rational Shapes of the Volatility Surface"". (June 2000).


9. **WORK IN PROGRESS:**
   A. Papers submitted to journals for consideration.
   
   B. Other completed papers.
   
   C. Research in progress.


10. PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS:

11. GRANTS-IN-AID:

12. INSTITUTIONAL SERVICE:
   A. Service to the Department
   B. Service to the School
   C. Service to the College
      MFE Graduate Committee, Committee Member.
   D. Service to the Graduate Center
   E. Service to the University

13. OFFICES HELD IN PROFESSIONAL SOCIETIES:

14. OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE:

   Finance and Stochastics, Referee.
   International Journal of Theoretical and Alpllied Finance, Referee.
   Journal of Algorithmic Finance, Referee.
   Journal of Applied Mathematical Finance, Referee.
   Journal of Econometrics, Referee.
   Mathematical Finance, Referee.
Quantitative Finance, Referee.

Quantitative Finance, Co-Editor-in-Chief.

Risk Magazine, Referee.

The International Journal of Theoretical and Applied Finance, Managing Editor.

The SIAM Journal of Financial Mathematics, Associate Editor.

15. **TEACHING ACTIVITIES AT BARUCH:**
   A. Courses Taught
      
      MTH 9903, Capstone Project.
      
      MTH 5000, Independent Study.
      
      MTH 4500, Introduction to Financial Mathematics.
      
      MTH 9879, Market Microstructure Models.
      
      MTH 9875, The Volatility Surface.
Gordon, Warren B.

1. **EDUCATION:**

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<td>B.E.</td>
<td>City College - CUNY</td>
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<td>Baruch College</td>
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<td>Mathematics</td>
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<td>Assistant Professor</td>
<td>Mathematics</td>
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<td>Baruch College</td>
<td>Lecturer</td>
<td>Mathematics</td>
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4. **NON ACADEMIC EXPERIENCE:**

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<td>New York City Transit Authority</td>
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<td>September 1970 - December 1979</td>
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A. Books:


B. Papers in Professional Journals:
   (1) Articles:


(2) Proceedings:


C. Chapters in Books:

D. Government Reports or Monographs:

E. Book Reviews:

7. **OTHER PUBLICATIONS:**


8. **PRESENTED PAPERS, LECTURES, AND EXHIBITIONS AND PERFORMANCES:**


Gordon, W. B., Board on Mathematical Sciences, National Research Council, Bethesda, Maryland, "Being More Resourceful and Winning More Resources". (November 1997).

Gordon, W. B., Board on Mathematical Sciences, National Research Council, Washington DC, "Preserving Strengths while Meeting Challenges". (October 1996).


Gordon, W. B., Board on Mathematical Sciences, National Research Council, Arlington, Virginia, "Shaping a New Contract with the University and Society". (October 1994).

Gordon, W. B., Board on Mathematical Sciences, National Research Council, Arlington, Virginia, "The Role of the Mathematical Sciences in the University and In Society". (October 1993).


9. WORK IN PROGRESS:
   A. Papers submitted to journals for consideration.

   B. Other completed papers.

   C. Research in progress.


10. PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS:
11. **GRANTS-IN-AID:**

Gordon, W. B., Grant, "Grant from the Chancellor's Office for Mathematics Bridge Courses", $15,000.00, Funded. (start: 2003, end: 2004).

Gordon, W. B., Grant, "Grant from the Chancellor's Office for Mathematics Bridge Courses", $15,000.00, Funded. (start: 2002, end: 2003).

Gordon, W. B., Grant, "Grant from the Chancellor's Office for Mathematics Bridge Courses", $20,000.00, Funded. (start: 2001, end: 2002).

Gordon, W. B., Grant, "Grant from the Chancellor's Office for Mathematics Bridge Courses", $30,000.00, Funded. (start: 2000, end: 2001).

12. **INSTITUTIONAL SERVICE:**

   A. Service to the Department

      Department Actuarial Science Committee, Member, (70's - 80's).

      Department Calculus Committee, Member, (70's - 80's).

      Department Curriculum Committee, Member, (70's - 80's).

      Department Final Exam Committee, Member, (70's - 80's).

      Department Finite Mathematics Committee, Member, (70's - 80's).

      Department Precalculus Committee, Member, (70's - 80's).

      Department of Mathematics, Committee Chair. (1985 - Present).

      Department Executive Committee, Committee Member. (1979 - Present).


   B. Service to the School

      Advisory Committee which Created SACC, Committee Chair.

      Board of Education Re-licensing Program (late 80's early 90's).
Dean Steven's task Force on Remediation (late 70s early 80s).


Dean's Task Force on Faculty Evaluation Procedures, Committee Chair. (2003).

WSAS Dean Search Committee (Myrna Chase was appointed). (2001 - 2002).

Advisory Committee for Curricular Advisement, Committee Chair. (1999).


SLAS Dean Search Committee (Lexa Logue was appointed). (1995).


SLAS Executive Committee, Committee Chair. (1993 - 1994).


C. Service to the College


Mathematics Immersion and Intersession Program, Designer.

Prefreshman Advisement, (70's, 80's and 90's).

Search Commitee for President (Matthew Goldstein was appointed), Committee Member.

Search Committee for Director of Academic Services (David Potash was appointed).


School P&B Committee, Committee Chair. (2006 - 2010).

Committee on students transfering to Baruch from Community College. (April 2005).


Baruch Multicultural Workshops, Faculty Advisor. (1993).

SEES Task Force, Committee Member. (1993).

Committee on the Freshman Year, Committee Member. (1991).

Project BETA, Committee Member. (1991).

Exemplary and Innovative Pilot Programs on Retention, Committee Member. (1986 - 1987).

Weekend College Committee, Committee Member. (1986).

Faculty Senate, Committee Member. (1981 - 1983).


Baruch's Open House, Committee Member. (1979).

House Plan Association, Faculty Advisor. (1972 - 1974).

D. Service to the Graduate Center


E. Service to the University

CUNY Mathematics Discipline Council, Chairperson, (September 2010 - Present).

CUNY Mathematics Discipline Council, Committee Member. (1994 - Present).

Vice Chancellor's Task Force on Articulation, Committee Member. (1986).

13. OFFICES HELD IN PROFESSIONAL SOCIETIES:

14. OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE:

College Mathematical Journal, Reviewer.

Mathematical Association of America, Committee Member.

15. TEACHING ACTIVITIES AT BARUCH:
A. Courses Taught

152/3, Mathematics of Finance.

Applied Calculus, new course preparation.
MTH 2205, Applied Calculus.
MTH 2206, Applied Calculus.
MTH 2207, Applied Calculus and Matrix Algebra.
MTH 3010, Calculus II.
Calculus, new course preparation.
MTH 2610, Calculus I.
MTH 3020, Calculus III.
Chaired the Committee and wrote proposal for SAAC, new course preparation.
College Algebra, new course preparation.
MTH 1030, College Algebra.
Continuing Education Mathematics Program, new course preparation.
Differential Equations, new course preparation.
MTH 4110, Differential Equations.
Discrete Mathematics, new course preparation.
MTH 2300, Discrete Mathematics.
MTH 51, Elementary Algebra.
MTH 3120, Elementary Probability.
MTH 2100, Finite Mathematics.
CSTM 0120, Intermediate Algebra.
MTH 53, Intermediate Algebra.
Linear Algebra, new course preparation.
MTH 4100, Linear Algebra.
M.S. in Applied Mathematics for Finance, new course preparation.
MTH 4120, Mathematical Probability.
Precalculus, new course preparation.
MTH 2000, Precalculus.
MTH 2001, Precalculus.
MTH 2003, Precalculus.
MTH 0100, Preparatory Mathematics I.
Remedial Programs at Baruch, new course preparation.

B. New courses/programs developed

Applied Calculus, new course preparation.
Calculus, new course preparation.
Chaired the Committee and wrote proposal for SAAC, new course preparation.
College Algebra, new course preparation.
Continuing Education Mathematics Program, new course preparation.
Differential Equations, new course preparation.
Discrete Mathematics, new course preparation.
Linear Algebra, new course preparation.
M.S. in Applied Mathematics for Finance, new course preparation.
Precalculus, new course preparation.
Remedial Programs at Baruch, new course preparation.
Gregory, Peter

1. **EDUCATION:**

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<th>Degree</th>
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<th>Field</th>
<th>Dates</th>
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<tr>
<td>Ph D</td>
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<td>Mathematics</td>
<td>2011</td>
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<td>Master of Arts in Teaching</td>
<td>Union College</td>
<td>Mathematics</td>
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<td>BS</td>
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2. **FULL-TIME ACADEMIC EXPERIENCE:**

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<th>Dates</th>
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<tr>
<td>Baruch College</td>
<td>Assistant Professor</td>
<td>Mathematics</td>
<td>February 1, 2011 - Present</td>
</tr>
<tr>
<td>Baruch College</td>
<td>Instructor</td>
<td>Mathematics</td>
<td>September 1, 2008 - January 31, 2011</td>
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<tr>
<td>Iona College</td>
<td>Assistant Professor</td>
<td>Mathematics</td>
<td>September 1, 2008 - August 31, 2009</td>
</tr>
<tr>
<td>Baruch College</td>
<td>Substitute Instructor</td>
<td>Mathematics</td>
<td>September 1, 2005 - August 31, 2007</td>
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<tr>
<td>The Doane Stuart School</td>
<td>Instructor</td>
<td>Mathematics</td>
<td>September 1, 1999 - August 31, 2001</td>
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3. **PART-TIME ACADEMIC EXPERIENCE:**

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<th>Rank</th>
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<tr>
<td>School of Professional Studies -- CUNY; Online Baccalaureate Program</td>
<td>Adjunct Lecturer</td>
<td>Mathematics</td>
<td>February 1, 2012 - August 10, 2012</td>
</tr>
<tr>
<td>Baruch College</td>
<td>Adjunct Lecturer</td>
<td>Mathematics</td>
<td>September 1, 2004 - August 31, 2005</td>
</tr>
<tr>
<td>Mount Saint Mary College</td>
<td>Adjunct Instructor</td>
<td>Mathematics</td>
<td>September 1, 2004 - June 1, 2005</td>
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<tr>
<td>Baruch College</td>
<td>Graduate Teaching Fellow</td>
<td>Mathematics</td>
<td>September 1, 2001 - August 31, 2004</td>
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<tr>
<td>Abrookin Vocational and technical School</td>
<td>Instructor</td>
<td>Mathematics</td>
<td>September 1, 1999 - June 30, 2000</td>
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4. **NON ACADEMIC EXPERIENCE:**

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<th>Place of Employment</th>
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5. **EMPLOYMENT RECORD AT BARUCH:**

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<tr>
<td>Assistant Professor</td>
<td>February 1, 2011 - Present</td>
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<tr>
<td>Instructor</td>
<td>September 1, 2008 - January 31, 2011</td>
</tr>
<tr>
<td>Substitute Instructor</td>
<td>September 1, 2005 - August 31, 2007</td>
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<tr>
<td>Adjunct Lecturer</td>
<td>September 1, 2004 - August 31, 2005</td>
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<tr>
<td>Graduate Teaching Fellow</td>
<td>September 1, 2001 - August 31, 2004</td>
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</table>

6. **PUBLICATIONS IN FIELD OF EXPERTISE:**

A. **Books:**

B. **Papers in Professional Journals:**

(1) **Articles:**


(2) **Proceedings:**

C. **Chapters in Books:**

D. **Government Reports or Monographs:**

E. **Book Reviews:**

7. **OTHER PUBLICATIONS:**

Gregory, P. *Divisible Groups in the K-theory Completion of SU(n).*

8. **PRESENTED PAPERS, LECTURES, AND EXHIBITIONS AND PERFORMANCES:**

Gregory, P. (Presenter & Author), Lilly Conference on College and University Teaching and Learning, Bethesda, MD, "Using Facebook as an Instructional Tool", National, published elsewhere, Accepted. (June 1, 2013).

Gregory, P., SUNY Conference on Instruction and Technology, CIT, SUNY, Stony Brook University, Stony Brook, NY, "Facebook: The Instructional Network". (June 1, 2012).


Gregory, P., Wang, W. O., Technology in Mathematics Instruction Conference, CUNY, Graduate Center of CUNY, New York, NY, "Instructional Math Videos". (June 8, 2010).


Gregory, P., Baruch College Teaching and Technology Conference, Baruch College, New York, NY, "Improving and Extending the Classroom with the Tablet PC and Camtasia". (March 26, 2010).


Gregory, P., Graduate Center of the City University of New York, Graduate Center of CUNY, New York, NY, "An Introduction to Time Complexity, P versus NP, and NP-completeness". (May 15, 2005).

9. WORK IN PROGRESS:
A. Papers submitted to journals for consideration.
B. Other completed papers.
C. Research in progress.
   
   Gregory, P. Focusing on Academic Language to Improve Mathematics Learning for ESL Students.

   Gregory, P. Divisible Groups in the K-theory Completion of SU(n).

   Gregory, P. Labs for Precalculus and Calculus.
Gregory, Peter, "Divisible Groups in the K-theory Completion of Some Exceptional Lie Groups", Planning, Scholarly.

Gregory, Peter, "Divisible Groups in the K-theory Completions of SO(n)", Planning, Scholarly.

Gregory, Peter, "Divisible Groups in the K-theory Completions of Sp(n)", On-Going, Scholarly.

Gregory, Peter, "Divisible Groups in the K-theory Completions of SU(n)", Writing Results, Scholarly.

Gregory, Peter, "Factors that impact student engagement in the instructional use of social media in an undergraduate mathematics course", Writing Results, Scholarly.

Gregory, Peter, "Focusing on Academic Language to Improve Student Learning in an Undergraduate Mathematics Class", Planning, Scholarly.


Gregory, Peter, "Using Facebook in a hybrid undergraduate precalculus course", On-Going, Scholarly.

10. PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS:

    Chancellor's Award for Excellence in Undergraduate Mathematics Education, City University of New York, Teaching, University. (May 12, 2011).

    Friend of SEEK Award, Baruch College SEEK Program, Teaching, School. (May 2010).

    University Fellowship. (2004).

    Graduate Teaching Fellowship, CUNY-Graduate Center, Teaching. (August 2002).

    Graduate Teaching Fellowship, CUNY-Graduate Center. (August 2001).


11. GRANTS-IN-AID:

12. INSTITUTIONAL SERVICE:
    A. Service to the Department

    Advisor to Math and Actuarial Science Majors, Committee Member.

    Base Curriculum Committee, Committee Member.
Committee on Committees, Committee Chair.

Final Exam Committee, Committee Member.

Liberal Arts Math, Committee Member.

WeBWoRK Video Tutorials for MTH 2003 and MTH 2205. (January 26, 2009 - Present). Created, edited, and posted videos for student and faculty use.

Lecturer Selection Committee. (November 30, 2012 - March 20, 2013).

B. Service to the School

Learning Community, Faculty Advisor. (August 28, 2013 - Present).

Undergraduate Appeals Committee, Committee Member. (August 27, 2012 - Present).


Learning Community, Faculty Advisor. (August 31, 2010 - December 17, 2010).

Implementing Evidence-Based Practices in Quantitative Pedagogy: A Cross Disciplinary Experiment in Improving Student Performance, Member of Math Faculty Development group. (January 2, 2010 - June 5, 2010).

Learning Community, Faculty Mentor. (August 31, 2009 - December 16, 2009).

C. Service to the College

Task Force on Interactive Online Learning, Committee Member.

Committee on Prizes, Scholarships and Awards, Committee Member. (August 31, 2012 - Present).

D. Service to the Graduate Center

E. Service to the University

13. OFFICES HELD IN PROFESSIONAL SOCIETIES:


Mathematical Association of America, MAA. (September 2001 - Present).

14. OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE:
15. **TEACHING ACTIVITIES AT BARUCH:**
   
   **A. Courses Taught**
   
   MTH 4420, Actuarial Mathematics I.
   
   MTH 3040, Actuarial Seminar, 3 credit hours, Undergraduate, Classroom.
   
   MTH 2205, Applied Calculus, 4 credit hours, Undergraduate, Classroom.
   
   MTH 8001, Applied Calculus, 4 credit hours, Graduate.
   
   MTH 2207, Applied Calculus and Matrix Applications, 4 credit hours, Undergraduate, Classroom.
   
   MTH 2610, Calculus I, 4 credit hours, Undergraduate, Classroom.
   
   MTH 1030, College Algebra, 4 credit hours, Undergraduate, Classroom.
   
   MTH 3120, Elementary Probability, 3 credit hours, Undergraduate, Classroom.
   
   MTH 4100, Linear Algebra, 3 credit hours, Undergraduate, Classroom.
   
   MTH 4120, Mathematical Probability, 4 credit hours, Undergraduate, Classroom.
   
   MATH 102, Mathematics in Contemporary Society, 3 credit hours, On-Line.
   
   MTH 2003, Precalculus and Elements of Calculus, 4 credit hours, Undergraduate, Hybrid (Part Classroom/Part On-Line), new format for existing course.
   
   MTH 2003, Precalculus and Elements of Calculus, 4 credit hours, Undergraduate, Classroom.
   
   MTH 4410, Theory of Interest, Undergraduate.
1. **EDUCATION:**

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<th>Degree</th>
<th>Institution</th>
<th>Field</th>
<th>Dates</th>
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<tr>
<td>Ph D</td>
<td>University of Strathclyde</td>
<td>Applied Mathematics</td>
<td>1988</td>
</tr>
<tr>
<td>BSc</td>
<td>University of Strathclyde</td>
<td>Mathematics</td>
<td>1983</td>
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2. **FULL-TIME ACADEMIC EXPERIENCE:**

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<th>Institution</th>
<th>Rank</th>
<th>Field</th>
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<tr>
<td>Baruch College</td>
<td>Lecturer</td>
<td>Mathematics</td>
<td>September 2008 - Present</td>
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<td>Baruch College</td>
<td>Substitute Assistant Professor</td>
<td>Mathematics</td>
<td>2007 - 2008</td>
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<tr>
<td>Grant MacEwan CC</td>
<td>Lecturer</td>
<td>Mathematics</td>
<td>1996 - 1997</td>
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<tr>
<td>Grant MacEwan CC</td>
<td>Adjunct Lecturer</td>
<td>Mathematics</td>
<td>1995 - 1996</td>
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<tr>
<td>Applied Math. Institute,</td>
<td>Research Associate</td>
<td>Mathematics</td>
<td>1988 - 1989</td>
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<td>University of Alberta</td>
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3. **PART-TIME ACADEMIC EXPERIENCE:**

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<th>Field</th>
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<tr>
<td>Baruch College</td>
<td>Adjunct Assistant Professor</td>
<td>Mathematics</td>
<td>2003 - 2007</td>
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<tr>
<td>NYCC of Tech</td>
<td>Adjunct Assistant Professor</td>
<td>Mathematics</td>
<td>2003</td>
</tr>
<tr>
<td>University of Alberta, Math</td>
<td>Program Head</td>
<td>Mathematics</td>
<td>1993 - 1995</td>
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<tr>
<td>Resource Center</td>
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<tr>
<td>University of Alberta</td>
<td>Adjunct Lecturer</td>
<td>Mathematics</td>
<td>1991 - 1993</td>
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<td>University of Alberta</td>
<td>Research Associate</td>
<td>Mathematics</td>
<td>1989 - 1991</td>
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<tr>
<td>Glasgow Polytechnic</td>
<td>Lecturer</td>
<td>Mathematics</td>
<td>1986 - 1988</td>
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4. **NON ACADEMIC EXPERIENCE:**

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<tr>
<td>Marconi Instruments, Scotland</td>
<td>Software Engineer</td>
<td>1984 - 1985</td>
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<tr>
<td>Smith's Industries Aerospace &amp; System Engineer</td>
<td>1983 - 1984</td>
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<td>Defense Systems, England</td>
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5. **EMPLOYMENT RECORD AT BARUCH:**

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<th>Rank</th>
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<tr>
<td>Lecturer</td>
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<tr>
<td>Substitute Assistant Professor</td>
<td>2007 - 2008</td>
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<td>Adjunct Assistant Professor</td>
<td>2003 - 2007</td>
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6. **PUBLICATIONS IN FIELD OF EXPERTISE:**

A. Books:
B. Papers in Professional Journals:

(1) Articles:


(2) Proceedings:

C. Chapters in Books:

D. Government Reports or Monographs:


E. Book Reviews:

7. **OTHER PUBLICATIONS:**


8. **PRESENTED PAPERS, LECTURES, AND EXHIBITIONS AND PERFORMANCES:**


Harney, S., CUNY IT Conference. Presentation, "Technology and the 24/7 Math Classroom". (December 5, 2008).

Harney, S., College for a Day. Presentation, "Fun With Logic". (November 7, 2008).

Harney, S., General Education Conference. Presentation, "Use of Technology in General Education". (May 2, 2008).

9. WORK IN PROGRESS:
   A. Papers submitted to journals for consideration.
   B. Other completed papers.
   C. Research in progress.

10. PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS:
   Engineering Undergraduate Teaching Award, University of Alberta. (1989).

11. GRANTS-IN-AID:

12. INSTITUTIONAL SERVICE:
   A. Service to the Department

      ACTUARIAL SCIENCE, Committee Chair. (September 1, 2010 - Present).
      Ensure that the needs of actuarial science students are met. Includes updating VEE
certification, liaising with student club, developing potential new courses.

      Final Exams Committee, Committee Chair. (September 1, 2009 - Present).
      Coordinating writing, proofing, printing of all common final exams in Math 1030, 2003,
2205, 2207

      Base Curriculum Committee, Committee Member. (2008 - Present).

      Department Secretary. (2008 - Present).

      Tablet PC Committee, Committee Member, Obtained several tablets from BCTC and
supported faculty in their use in the classroom. (September 1, 2009 - September 1,
2010).
Recruit and help train faculty in use of Tablet PC's in classroom. Liaise with Donna Haggarty re National Grid grant.

Final Exams Committee, Committee Member. (2008 - 2009).

B. Service to the School

Weissman Committee on Academic Standing (WCAS), Committee Member. (2008 - 2010).

C. Service to the College

Joint Committee on Academic Standing (JCAS), Committee Member. (2008 - Present).

D. Service to the Graduate Center

E. Service to the University

13. OFFICES HELD IN PROFESSIONAL SOCIETIES:

14. OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE:

CUNY IT Conference. (December 2, 2011).


Baruch College Book Club, Member. (2007).


School Leadership Team at PS 29, Officer, Secretary. (1999 - 2000).


15. TEACHING ACTIVITIES AT BARUCH:

A. Courses Taught

MATH 3030, Analytic Geometry & Calculus II.

MATH 2006, Applied Calculus.

MATH 2205, Applied Calculus.

MATH 2207, Applied Calculus & Matrix Applications.

MATH 2610, Calculus I.
MATH 3020, Intermediate Calculus.
MTH 4120, Introduction to Probability.
MATH 2001, Precalculus.
MATH 2003, Precalculus & Elements of Calculus.
MATH 4410, Theory of Interest.
MTH 2003, Precalculus & Elements of Calculus (Hybrid), new format for existing course, (Fall 2011).

B. New courses/programs developed

Howard, C. Douglas

1. **EDUCATION:**

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<th>Degree</th>
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<td>Ph D</td>
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<td>Columbia University</td>
<td>Finance</td>
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<td>BS</td>
<td>Massachusetts Institute of Technology</td>
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<tr>
<td>Baruch College</td>
<td>Associate Professor</td>
<td>Mathematics</td>
<td>2002 - Present</td>
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<td>Baruch College</td>
<td>Assistant Professor</td>
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<td>Polytechnic University</td>
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<td>Mathematics</td>
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<td>Courant Institute</td>
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4. **NON ACADEMIC EXPERIENCE:**

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<tr>
<td>Salomon Brothers Inc. Fixed Income Research</td>
<td>Vice President</td>
<td>1985 - 1990</td>
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5. **EMPLOYMENT RECORD AT BARUCH:**

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<td>Associate Professor</td>
<td>2002 - Present</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>1998 - 2001</td>
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6. **PUBLICATIONS IN FIELD OF EXPERTISE:**

A. Books:

 nap A. Articles:


(2) Proceedings:


C. Chapters in Books:


D. Government Reports or Monographs:

E. Book Reviews:

7. **OTHER PUBLICATIONS:**

8. **PRESENTED PAPERS, LECTURES, AND EXHIBITIONS AND PERFORMANCES:**

Howard, C. Douglas, Conference on Particle Systems, Iowa State University, "Euclidean First-Passage Percolation". (April 2001).

Howard, C. Douglas, John Hopkins University, "Euclidean First-Passage Percolation". (November 13, 2000).

Howard, C. Douglas, CUNY Graduate Center, "Zero-Temperature Ising Spin Dynamics". (November 16, 1999).

Howard, C. Douglas, CUNY Graduate Center, "Euclidean First-Passage Percolation". (October 26, 1998).

Howard, C. Douglas, NYU's Courant Institute, "Euclidean First-Passage Percolation". (October 2, 1998).


Howard, C. Douglas, Institute for Advanced Study / Park City Mathematics Institute Research Program. (July 1996).

9. **WORK IN PROGRESS:**

A. Papers submitted to journals for consideration.
B. Other completed papers.

C. Research in progress.

Howard, C. Douglas, "Coalescence of geodesics in first-passage percolation".

10. PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS:


Phi Beta Kappa, Massachusetts Institute of Technology. (1977).

11. GRANTS-IN-AID:

Howard, C. Douglas, Grant, "RUI: First-passage Percolation and Other Disordered Systems, Grant #0203943", National Science Foundation, Division of Mathematical Sciences(Probability), $82,269.00. (start: June 1, 2002, end: May 31, 2005).

Howard, C. Douglas, Grant, "Studies in First-Passage Percolation and random walks with Scenery, Grant #9815226", National Science Foundation, Division of Mathematical Sciences(Probability), $77,394.00. (start: September 1, 1998, end: August 31, 2001).

12. INSTITUTIONAL SERVICE:

A. Service to the Department

Student Advisory duty as assigned.

Actuarial Committee. (September 1999 - Present).

Committee on the M.S. in Applied Mathematics for Finance. (September 1998 - Present).

Advisor to Majors. (September 2002 - May 2008).

Executive Committee. (September 2000 - March 2003).


Graduate Committee. (September 1999 - March 2000).
B. Service to the School


C. Service to the College

Faculty Senate of Baruch College Committee on Planning and Finance. (September 1998 - September 1999).

D. Service to the Graduate Center

E. Service to the University

Referee. (September 1999).

CUNY Research Foundation grant proposal

13. OFFICES HELD IN PROFESSIONAL SOCIETIES:

14. OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE:

American Mathematical Society, Mathematical Association of America, Member.


15. TEACHING ACTIVITIES AT BARUCH:

A. Courses Taught

MTH 3040, Actuarial Science Theory and Problem Seminar.

MTH 9871, Advanced Computational Methods in Finance, new course preparation.

MTH 9871, Advanced Computational Methods in Finance.

With colleagues, developed M.S. program in Applied Mathematics for Finance, Applied Mathematics for Finance, new course preparation.

MTH 2010, Elementary Calculus.

MTH 9873, Interest Rate Models and Interest Rate Derivatives.
MTH 9873, Interest Rate Models and Interest Rate Derivatives, new course preparation.
FIN U832, Interest Rate Term Structure Modeling, new course preparation.
FIN U832, Interest Rate Term Structure Modeling (Graduate Center).
MTH 4120, Introduction to Probability.
MTH 4100, Linear Algebra.
MTH 4130, Mathematics of Statistics.
MTH 4135, Methods of Monte Carlo Simulation.
MTH 4135, Methods of Monte Carlo Simulation, new course preparation.
MTH 9831, Real Analysis and Probability (M.S. program).
MS 9831, Real Analysis and Probability (M.S. program), new course preparation.
MTH 4451, Risk Theory.
PHYS 45165, Stochastic Processes and Disordered Systems, new course preparation.
PHYS 45165, Stochastic Processes and Disordered Systems (Graduate Center).
MS 9862, Stochastic Processes in Finance.
MS 9862, Stochastic Processes in Finance (MS program), new course preparation.

B. New courses/programs developed

MTH 9871, Advanced Computational Methods in Finance, new course preparation.

With colleagues, developed M.S. program in Applied Mathematics for Finance, Applied Mathematics for Finance, new course preparation.

MTH 9873, Interest Rate Models and Interest Rate Derivatives, new course preparation.
FIN U832, Interest Rate Term Structure Modeling, new course preparation.
MTH 4135, Methods of Monte Carlo Simulation, new course preparation.
MS 9831, Real Analysis and Probability (M.S. program), new course preparation.
PHYS 45165, Stochastic Processes and Disordered Systems, new course preparation.
MS 9862, Stochastic Processes in Finance (MS program), new course preparation.
Kosygina, Elena

1. EDUCATION:

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<th>Degree</th>
<th>Institution</th>
<th>Field</th>
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<tr>
<td>Ph D</td>
<td>New York University</td>
<td>Mathematics</td>
<td>1999</td>
</tr>
<tr>
<td>Candidate of Science</td>
<td>Moscow State University</td>
<td>Physics and Mathematics</td>
<td>1995</td>
</tr>
<tr>
<td>Mathematician (with distinction)</td>
<td>Moscow State University</td>
<td>Mathematics</td>
<td>1989</td>
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2. FULL-TIME ACADEMIC EXPERIENCE:

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<th>Institution</th>
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<tr>
<td>Baruch College</td>
<td>Professor</td>
<td>Mathematics</td>
<td>August 28, 2013 - Present</td>
</tr>
<tr>
<td>CUNY Graduate Center</td>
<td>Doctoral Faculty</td>
<td>Mathematics</td>
<td>September 1, 2005 - Present</td>
</tr>
<tr>
<td>Baruch College</td>
<td>Associate Professor</td>
<td>Mathematics</td>
<td>January 1, 2008 - August 27, 2013</td>
</tr>
<tr>
<td>Baruch College</td>
<td>Assistant Professor</td>
<td>Mathematics</td>
<td>September 1, 2002 - December 31, 2007</td>
</tr>
<tr>
<td>Northwestern University</td>
<td>Assistant Professor</td>
<td>Mathematics</td>
<td>September 1, 1999 - August 31, 2002</td>
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3. PART-TIME ACADEMIC EXPERIENCE:

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<tr>
<td>Fields Institute, Toronto</td>
<td>Program Participant</td>
<td>Mathematics</td>
<td>January 2, 2011 - January 29, 2011</td>
</tr>
<tr>
<td>Universität Tübingen</td>
<td>Guest Professor</td>
<td>Mathematics</td>
<td>April 27, 2009 - May 22, 2009</td>
</tr>
<tr>
<td>Institute for Advanced Study</td>
<td>Member</td>
<td>Mathematics</td>
<td>January 12, 2009 - April 12, 2009</td>
</tr>
<tr>
<td>Institute Henri Poincaré</td>
<td>Program Participant</td>
<td>Mathematics</td>
<td>September 3, 2008 - December 18, 2008</td>
</tr>
<tr>
<td>New York University</td>
<td>Research Assistant</td>
<td>Mathematics</td>
<td>September 1, 1994 - May 31, 1999</td>
</tr>
<tr>
<td>New York University</td>
<td>Teaching Assistant</td>
<td>Mathematics</td>
<td>September 1, 1994 - May 31, 1999</td>
</tr>
<tr>
<td>Moscow State University</td>
<td>Instructor</td>
<td>Mathematics</td>
<td>September 1, 1990 - June 30, 1991</td>
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4. NON ACADEMIC EXPERIENCE:

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<th>Place of Employment</th>
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5. EMPLOYMENT RECORD AT BARUCH:

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<th>Rank</th>
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<tr>
<td>Professor</td>
<td>August 28, 2013 - Present</td>
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<tr>
<td>Associate Professor</td>
<td>January 1, 2008 - August 27, 2013</td>
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<tr>
<td>Assistant Professor</td>
<td>September 1, 2002 - December 31, 2007</td>
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</table>
6. PUBLICATIONS IN FIELD OF EXPERTISE:
   A. Books:

   B. Papers in Professional Journals:
      (1) Articles:


(2) Proceedings:


C. Chapters in Books:


D. Government Reports or Monographs:

E. Book Reviews:
7. OTHER PUBLICATIONS:


8. PRESENTED PAPERS, LECTURES, AND EXHIBITIONS AND PERFORMANCES:


Kosygina, E., Probability and Mathematical Physics Seminar, Courant Institute of Mathematical Sciences, NYU, New York, NY, "Crossing speeds of random walks among "sparse" and "spiky" Bernoulli potentials on integers". (February 2013).

Kosygina, E., Random Networks & Environments Workshop, Boğaziçi University, Istanbul, Turkey, "On the speed of one-dimensional random walk conditioned to hit a remote location among Bernoulli potentials", Invited. (July 2012).

Kosygina, E., Oberseminar Stochastik, Universität Tübingen, Tübingen, Germany, "On the speed of one-dimensional random walk conditioned to hit a remote location among Bernoulli potentials". (June 2012).


Kosygina, E., 40 Years and Counting: AWM’s Celebration of Women in Mathematics, Brown University, Providence, "Limit laws of excited random walks on integers", Invited. (September 2011).

Kosygina, E., A Conference in Honor of the 70th Birthday of S.R.S. Varadhan, National Taiwan University, Taipei, Taiwan, "Scaling limits of excited random walks on integers", Invited. (July 2011).


Kosygina, E., Probability Seminar, University of Toronto and Fields Institute, Toronto, "Crossing velocities for annealed random walks in random potentials". (January 2011).

Kosygina, E., CUNY Probability Seminar, CUNY Graduate Center, New York, "Crossing velocities for annealed random walks in random potentials". (December 2010).

Kosygina, E., Probability Seminar, University of Utah, Salt Lake City, "Crossing velocities for annealed random walks in random potentials". (December 2010).


Kosygina, E., Mathematics Colloquium, Iowa State University, Ames, "Excited random walks on integers". (May 2010).

Kosygina, E., Workshop on Deterministic and Stochastic Front Propagation, Banff International Research Station for Mathematical Innovation and Discovery, Banff, Canada, "On random walks in a random potential conditioned to hit a remote location", Invited. (March 2010).

Kosygina, E., Probability Seminar, University of Maryland, College Park, "Limit laws of excited random walks on integers". (November 2009).

Kosygina, E., Probability Seminar, University of Utah, Salt Lake City, "Limit laws of excited random walks on integers". (November 2009).

Kosygina, E., CUNY Probability Seminar, CUNY Graduate Center, New York, "Limit laws of excited random walks on integers". (October 2009).

Kosygina, E., Probability Seminar, University of Minnesota, Minneapolis, "Limit laws of excited random walks on integers". (October 2009).


Kosygina, E., Workshop on Random Walks, Particle Systems, and Random Media, Pontificia Universidad Catolica de Chile, Santiago, Chile, "Positively and negatively excited random walks on integers". (January 2008).


Kosygina, E., CUNY Probability Seminar, City University of New York, New York, "Recent results about Multi-Excited Random Walks". (May 2007).

Kosygina, E., Probability Seminar, University of Toronto, Toronto, "Homogenization of Hamilton-Jacobi-Bellman Equations with respect to time-space shifts in a stationary ergodic medium". (March 2007).


Kosygina, E., Probability Seminar, University of Delaware, Newark, DE, "Homogenization of Stochastic Hamilton-Jacobi-Bellman Equations". (February 2006).

Kosygina, E., Department of Mathematics Colloquium, University of Tuebingen, Tübingen, Germany, "Stochastic Homogenization of Hamilton-Jacobi Equations". (January 2006).


Kosygina, E., CUNY Probability Seminar, Graduate Center of the City University of New York, New York, "Homogenization of stochastic Hamilton-Jacobi equation with a vanishing viscous term". (February 2005).


Kosygina, E., Dynamical Systems Seminar, University of Maryland, College Park, "Homogenization of stochastic Hamilton-Jacobi equations". (November 2003).

Kosygina, E., Workshop on connections between dynamical systems and PDEs, American Institute of Mathematics, Palo Alto, "Homogenization of stochastic Hamilton-Jacobi equations with a vanishing viscosity term". (July 2003).


Kosygina, E., CUNY Probability Seminar, CUNY Graduate Center, New York, "The long term behavior of the Brownian flow with jumps". (November 2002).


Kosygina, E., Internship in Probability Program, University of Wisconsin, Madison, "The behavior of the relative entropy in the hydrodynamic scaling limit". (July 2002).

Kosygina, E., Probability Seminar, Northwestern University, Evanston, "Homogenization of stochastic Hamilton-Jacobi equations". (May 2002).

Kosygina, E., Probability Seminar, University of Wisconsin, Madison, "Homogenization of stochastic Hamilton-Jacobi equations". (April 2002).

Kosygina, E., Mathematics Colloquium, University of Missouri, Rolla, "The long term behavior of the Brownian motion with jumps". (November 2001).

Kosygina, E., UIUC Probability Semiar, University of Illonois at Urbana-Champaign, Urbana-Champaign, "The behavior of the relative entropy in the hydrodynamic scaling limit for the simple exclusion process". (September 2000).

Kosygina, E., Probability Seminar, Northwestern University, Evanston, "The behavior of the relative entropy in the hydrodynamic scaling limit for the simple exclusion process". (January 2000).

Kosygina, E., Mathematics Colloquium, Northwestern University, Evanston, "The behavior of the relative entropy in the hydrodynamic scaling limit". (February 1999).

Kosygina, E., Southeastern Probability Days, Georgia Institute of Technology, Atlanta, "The behavior of the relative entropy in the hydrodynamic scaling limit for Ginzburg-Landau model". (April 1998).

Kosygina, E., Joint Meetings of I.G. Petrovsky Seminar and the Moscow Mathematical Society, Moscow State University, Moscow, Russia, "On the solvability of the Cauchy problem in classes of growing functions for some degenerate parabolic equations". (January 1994).

Kosygina, E., Conference of young scientists, Moscow State University, Moscow, Russia, "New exact solutions of the multidimensional nonlinear diffusion equation". (April 1993).

9. WORK IN PROGRESS:
   A. Papers submitted to journals for consideration.

   B. Other completed papers.

   C. Research in progress.

10. PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS:
    Faculty Scholarship and Creative Achievement Award, Baruch College, Scholarship/Research, University. (March 2012).


    Faculty Scholarship and Creative Achievement Award, Baruch College. (March 2008).

    Faculty Scholarship and Creative Achievement Award, Baruch College. (March 2007).

Sandra Bleinstein Prize for notable achievement by a woman in applied mathematics or computer science, Courant Institute of Mathematical Sciences, NYU. (1997).


11. GRANTS-IN-AID:


Kosygina, E. (Principal), "Positively and negatively excited random walks on integers and strips", PSC-CUNY Award # 64603-00-42; Research Foundation of the City University of New York, $4,890.00, Funded. (start: July 1, 2011, end: June 30, 2012).

Kosygina, E. (Principal), "Lyapunov exponents for random walks and diffusions in a random potential", PSC-CUNY Award # 63393-00-41; Research Foundation of the City University of New York, $840.00, Funded. (start: July 1, 2010, end: June 30, 2011).

Kosygina, E., "Interacting Particle Systems, Statistical Mechanics, and Probability Theory", National Science Foundation; Award DMS-0825081 (G. Ben-arous, S. R. S. Varadhan); Partial support to attend the program at the Institute Henri Poincare, Paris, $4,000.00. (start: October 2009, end: December 2009).

Kosygina, E., National Science Foundation, Award DMS-0855857 (L. Saloff-Coste); Award to attend the 33rd Conference on Stochastic Processes and Their Applications, $800.00. (end: July 2009).

Kosygina, E. (Principal), "Lyapounov exponents for a Brownian motion in a stationary ergodic random medium", PSC-CUNY Award # 61319-00-39; Research Foundation of the City University of New York, $3,525.00. (start: July 1, 2008, end: June 30, 2009).

Kosygina, E., National Science Foundation, Award DMS-0635607 (Institute for Advanced Study); Partial support for a semester at the Institute for Advanced Study (Spring 2009), $8,000.00. (start: January 12, 2009, end: April 12, 2009).

Kosygina, E. (Principal), "Multi-exited random walks on integers", PSC-CUNY Award # 69580-00-38; Research Foundation of the City University of New York, $4,017.00. (start: July 1, 2007, end: June 30, 2008).
Kosygina, E. (Principal), "Applications of stochastic homogenization techniques to some growth models", PSC-CUNY Award #68315-00-37; Research Foundation of the City University of New York, $2,992.00. (start: July 1, 2006, end: June 30, 2008).

Kosygina, E. (Principal), "On the convergence of viscosity solutions of stochastic Hamilton-Jacobi equations to a non-random limit", PSC-CUNY Award # 67332-00-36; Research Foundation of the City University of New York, $3,311.00. (start: July 1, 2005, end: June 30, 2006).


Kosygina, E. (Principal), "On the convergence of viscosity solutions of stochastic Hamilton-Jacobi equations to a non-random limit", PSC-CUNY Award #66512-00-35; Research Foundation of the City University of New York, $4,923.00. (start: July 1, 2004, end: June 30, 2005).

Kosygina, E. (Principal), "Homogenization of Stochastic Hamilton-Jacobi Equations", PSC-CUNY Award #60079-33-34; Research Foundation of the City University of New York, $2,600.00. (start: May 1, 2003, end: June 30, 2004).

Kosygina, E., "Travel Grant", National Science Foundation, Division of Mathematical Sciences, $1,000.00. (start: 2003, end: 2003).

Kosygina, E., "Mentoring Travel Grant for Women", Association for Women in Mathematics and National Science Foundation, $2,000.00. (start: 2001, end: 2001).

Kosygina, E., "NFS Travel Grant", National Science Foundation, Division of Mathematical Sciences, $1,000.00. (start: 2000, end: 2000).

12. INSTITUTIONAL SERVICE:
   A. Service to the Department

   Honors Committee. (2010 - Present).

   Advisor to Mathematics/Actuarial Science Majors/Minors. (March 2007 - Present).

   Executive Committee. (May 2006 - Present).

   Calculus Committee. (September 2005 - Present).

   Masters in Finance Committee. (September 2004 - Present).


   Actuarial Science Committee. (September 2003 - May 2008).
Department Secretary. (September 2003 - May 2006).

Final Examinations Committee. (September 2002 - May 2004).

B. Service to the School

Weissman Graduate Affairs Committee, Committee Member, Yes, elected. (2011 - 2012).

C. Service to the College

Library Committee. (September 2004 - May 2005).

D. Service to the Graduate Center

Mathematics Department Curriculum Committee. (November 2012 - Present).
   Redesigning the curriculum for Ph.D. students

Mathematics Department Graduate Faculty Member. (2005 - Present).
   Teaching graduate courses in probability; independent research courses; preliminary and oral exams; Ph.D. thesis defences

E. Service to the University


13. OFFICES HELD IN PROFESSIONAL SOCIETIES:

14. OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE:


National Science Foundation, Division of Mathematical Sciences, Reviewer/Probability Panel Member/Postdoctoral Panel Member/Committee of Visitors Member.

15. TEACHING ACTIVITIES AT BARUCH:
   A. Courses Taught

   MTH 3030, Analytical Geometry and Calculus II.

   MTH 2207, Applied Calculus and Matrix Applications.

   MTH 2205, Applied Calculus II.
MTH 2610, Calculus I.
MTH 9903, Capstone Project.
MTH 3006, Integral Calculus.
MTH 3020, Intermediate Calculus.
MTH 4500, Introduction to Financial Mathematics.
MTH 4120, Introduction to Probability.
MTH 4125, Introduction to Stochastic Processes.
MTH 9862, Probability and Stochastic Processes for Finance II.
MTH 9831, Probability and Stochastic Processes for Finance I.
Lesniewski, Andrew

1. **EDUCATION:**

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<th>Degree</th>
<th>Institution</th>
<th>Field</th>
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<tr>
<td>Ph.D.</td>
<td>Swiss Federal Institute of Technology, Zurich, Switzerland</td>
<td>Mathematics</td>
<td>1986</td>
</tr>
<tr>
<td>B.S.</td>
<td>A. Mickiewicz University, Poland</td>
<td>Physics</td>
<td>1981</td>
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2. **FULL-TIME ACADEMIC EXPERIENCE:**

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<tr>
<td>Harvard University, MA</td>
<td>Associate Professor</td>
<td>Mathematical Physics</td>
<td>7/1991 – 6/1997</td>
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3. **PART-TIME ACADEMIC EXPERIENCE:**

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<tr>
<td>Baruch College, CUNY</td>
<td>Adj. Assist. Professor</td>
<td>Mathematics</td>
<td>Fall 2012-Present</td>
</tr>
<tr>
<td>New York University</td>
<td>Adjunct Professor</td>
<td>Mathematics</td>
<td>1/2007 – Present</td>
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4. **NON ACADEMIC EXPERIENCE:**

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<th>Place of Employment</th>
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<tr>
<td>DTCC, New York, NY</td>
<td>Head of Finance Engineering</td>
<td>1/2012 - Present</td>
</tr>
<tr>
<td>Ellington Management Group, Greenwich, CT</td>
<td>Managing Director, Head of Quantitative Research</td>
<td>11/2002-12/2011</td>
</tr>
<tr>
<td>Acadian Asset Management, Boston, MA</td>
<td>Vice President/Quantitative Research</td>
<td>5/1997 – 12/1997</td>
</tr>
<tr>
<td>Harvard University, MA</td>
<td>Research Associate</td>
<td>9/1986 – 6/1991</td>
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5. **EMPLOYMENT RECORD AT BARUCH:**

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<tr>
<td>Adjunct Assistant Professor</td>
<td>Fall 2012 – Present</td>
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6. **PUBLICATIONS IN FIELD OF EXPERTISE:**

A. **Books:** None

B. **Papers in Professional Journals:**

(1) **Articles:**


Lesniewski, A., Klimek, S., “A Note on the Entire Cyclic Cohomology of a Finite
Lesniewski, A., Klimek, S., “Quantum Riemann Surfaces, II. The Discrete Series”;
Lesniewski, A., Klimek, S., “Quantum Riemann Surfaces, I. The Unit Disc”; Comm.
Lesniewski, A., Klimek, S., “A Golden-Thompson Inequality in Supersymmetric
Lesniewski, A., Klimek, S., “Pfaffians on Banach Spaces”; J. Funct. Anal., 102, 314-330,
(1991)
Lesniewski, A., Klimek, S., “Local Rings of Singularities and $N = 2$ Supersymmetric
Lesniewski, A., Klimek, S., “Chern Character in Equivariant Entire Cyclic Cohomology”;
Lesniewski, A., Klimek, S., and Kondracki, W., “Equivariant Entire Cyclic Cohomology,
Lesniewski, A., Jaffe, A., and Klimek, S., “Asymptotically Commuting Families of
Lesniewski, A., Ernst, K., Feng, P., and Jaffe, A., “Quantum K-Theory, II. Homotopy
Lesniewski, A., and Jaffe, A., “Geometry of Supersymmetry”; Constructive Quantum
Lesniewski, A., Klimek, S., “Global Laurent Expansions on a Riemann Surface”; Comm.
Lesniewski, A., Jaffe, A., and Wieczerkowski, C., “Heat Kernel Regularization of
Lesniewski, A., and Jaffe, A., “Supersymmetric Field Theory and Infinite Dimensional
Analysis”; Nonperturbative Quantum Field Theory, Proceedings of the 1987 Cargese
Lesniewski, A., Jaffe, A., and Weitsman, J., “The Loop Space $S^1 \rightarrow R$ and
Lesniewski, A., Jaffe, A., and Osterwalder, K., “On Convergence of Inverse Functions of

6. PUBLICATIONS IN FIELD OF EXPERTISE: (con’t)
B. Papers in Professional Journals:
(1) Articles:
Lesniewski, A., Jaffe, A., and Weitsman, J., “The Two-Dimensional, $N = 2$ Wess Zumino
Lesniewski, A., Jaffe, A., and Weitsman, J., “Index of a Family of Dirac Operators on
Lesniewski, A., Jaffe, A., and Lewenstein, M., “Ground State Structure in
Lesniewski, A., and Lang, G., “Axioms for Renormalization in Euclidean Quantum Field
1167, (1983)

(2) Proceedings:
Lesniewski, A., Li, Z., Samet, J., and Xia, X., “Dynamic Mortgage Rate Replication and
Model of Stochastic Volatility”; Working paper (2001)

C. Chapters in Books: None
D. Government Reports or Monographs: None
E. Book Reviews: None

7. OTHER PUBLICATIONS: None

8. PRESENTED PAPERS, LECTURES, AND EXHIBITIONS AND PERFORMANCES:
Lesniewski, A., Talk at New York University; “Recent Developments in Derivatives Pricing”,
(2010)
Lesniewski, A., Talk at Conference in South Hadley, MA; “Quantization”, (1996)
Lesniewski, A., Talk at the American Mathematical Society Meeting in Cincinnati (1994)

8. PRESENTED PAPERS, LECTURES, AND EXHIBITIONS AND PERFORMANCES: (con’t)
Lesniewski, A., Talk at Conference in Ascona, Switzerland; “Geometric and Topological Aspects of Quantum Field Theory”, (1992)
Lesniewski, A., Giving Lectures at Summer Schools in Erice, Italy; “Theoretical Physics”, (1988)
Lesniewski, A., Colloquium and Seminar Talks at the University of Arizona, Tucson; Boston University, Boston; University of California, Davis; Cornell University, Ithaca; Harvard University, Cambridge; Indiana University, Bloomington; Institute of Advanced Study, Princeton; IUPUI, Indianapolis; University of Kansas, Lawrence; Massachusetts Institute of Technology, Cambridge; SUNY, Buffalo; University of Virginia Charlottesville; University of Michigan, Ann Arbor; Northeastern University, Boston; University of Zurich, Zurich; Swiss Federal Institute of Technology, Zurich; Courant Institute of Mathematical Sciences, New York University, New York

9. WORK IN PROGRESS: None
A. Papers submitted to journals for consideration: None
B. Other completed papers: None
C. Research in progress: None

10. PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS:
Two Thomas Hoopes Prizes for undergraduate theses at Harvard

11. GRANTS-IN-AID:
Lesniewski, A., Department of Energy Grant #DE-FG02-88ER25065 with A. Jaffe
Lesniewski, A., National Science Foundation Grant #DMS-944344

12. INSTITUTIONAL SERVICE: None
A. Service to the Department: None
B. Service to the School: None
C. Service to the College: None
D. Service to the Graduate Center: None
E. Service to the University: None

13. OFFICES HELD IN PROFESSIONAL SOCIETIES: None
14. OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE:
Supervised 4 Master theses in mathematical finance at New York University
Supervised 3 Ph.D. theses and a number of undergraduate theses at Harvard

15. TEACHING ACTIVITIES AT BARUCH:
A. Courses taught:
   MTH 9882, Fixed Income Risk Management
Matic, Ivan

1. EDUCATION:

<table>
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<tr>
<th>Degree</th>
<th>Institution</th>
<th>Field</th>
<th>Dates</th>
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<tbody>
<tr>
<td>Ph.D.</td>
<td>University of California, Berkeley</td>
<td>Mathematics</td>
<td>2004 - 2010</td>
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2. FULL-TIME ACADEMIC EXPERIENCE:

<table>
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<th>Institution</th>
<th>Rank</th>
<th>Field</th>
<th>Dates</th>
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<tr>
<td>Duke University</td>
<td>Assistant Research Professor</td>
<td>Mathematics</td>
<td>2010 – 2013</td>
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<tr>
<td>Canada Mathcamp</td>
<td>Mentor USA</td>
<td>Mathematics</td>
<td>2006 – 2011</td>
</tr>
<tr>
<td>UC Berkeley</td>
<td>Graduate Student Instructor</td>
<td>Mathematics</td>
<td>2005 – 2010</td>
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3. PART-TIME ACADEMIC EXPERIENCE:

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<th>Institution</th>
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<th>Dates</th>
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<tr>
<td>National Taipei University of Technology</td>
<td>Honorary International Chair Professor</td>
<td>Mathematics</td>
<td>2012 - 2013</td>
</tr>
<tr>
<td>UC Berkeley</td>
<td>Instructor</td>
<td>Mathematics</td>
<td>2006 – 2009</td>
</tr>
<tr>
<td>UC Berkeley 2009San Jose, CA</td>
<td>Math Circle Instructor Mathematics</td>
<td>2006 - 2009</td>
<td></td>
</tr>
<tr>
<td>Sudbury, Canada</td>
<td>Math Circle Instructor</td>
<td>Mathematics</td>
<td>2006 - 2009</td>
</tr>
<tr>
<td>Dallas, TX</td>
<td>Math Circle Instructor</td>
<td>Mathematics</td>
<td>2006 - 2009</td>
</tr>
<tr>
<td>UC Berkeley</td>
<td>Instructor for Analysis Workshop</td>
<td>Mathematics</td>
<td>2006 - 2008</td>
</tr>
<tr>
<td>Serbian IMO Training Camp</td>
<td>Instructor Mathematics</td>
<td>2003 –</td>
<td></td>
</tr>
<tr>
<td>University of Belgrade</td>
<td>TA</td>
<td>Mathematics</td>
<td>2003 – 2004</td>
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4. NON ACADEMIC EXPERIENCE:

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<tr>
<th>Place of Employment</th>
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<th>Date</th>
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<tbody>
<tr>
<td>Website <a href="http://www.imomath.com">www.imomath.com</a></td>
<td>Creator and Developer</td>
<td>2005 - 2012</td>
</tr>
<tr>
<td>Fields Institute, Toronto</td>
<td>Fields Postdoctoral Fellow</td>
<td>Spring 2011</td>
</tr>
<tr>
<td>MOSP</td>
<td>Writer of the USA IMO Team</td>
<td>2008 – 2009</td>
</tr>
<tr>
<td>Bay Area Math Olympiad 2006 – 2009</td>
<td>Member of the Jury</td>
<td></td>
</tr>
<tr>
<td>San Francisco Bay Area</td>
<td>Associate Director of Berkeley Math Circle</td>
<td>2007 – 2008</td>
</tr>
</tbody>
</table>

5. EMPLOYMENT RECORD AT BARUCH: None

6. PUBLICATIONS IN FIELD OF EXPERTISE:

A. Books:

6. PUBLICATIONS IN FIELD OF EXPERTISE: (con’t)
   B. Papers in Professional Journals:

   (1) Articles:

   (2) Proceedings: None

C. Chapters in Books: None

D. Government Reports or Monographs: None

E. Book Reviews: None

7. OTHER PUBLICATIONS: None

8. PRESENTED PAPERS, LECTURES, AND EXHIBITIONS AND PERFORMANCES:
   “Summer School of Recent Advances in the Theory of Homogenization”, University of Chicago, USA, 2012
   “Random media; Homogenization and Beyond”, IPAM, Los Angeles, USA, 2011
   “Sublinear Variance Bounds for Variational Functionals”, talk, UC Berkeley, 2011
   “Central Limit Theorems and Large Deviations for Variational Problems”, talk, Fields Institute, Toronto, 2011
   “Deterministic Walks in Random Environments”, talk, Duke University, 2010
   “Homogenizations and Large Deviations for Several Stochastic Models”, talk, University of Utah, 2010
   “International Congress of Mathematicians”, Hyderabad, India, 2010
   “Large Deviations for Some Random Media Models”, talk, UC Berkeley, 2010
   “Oberwolfach Seminar: The Ergodic Theory of Markov Processes”, Oberwolfach, Germany, 2010
   “5th Pacific Rim Conference on Mathematics”, Stanford University, USA, 2010
   “Deterministic Walks in Random Environments”, talk, UC Berkeley, 2009
   “2nd Graduate Student Conference in Probability”, University of Wisconsin, Madison, USA, 2008
“Large Deviations for Hamilton-Jacobi PDE”, talk, University of Wisconsin, Madison, USA, 2008
“Large Deviations for Hammersley Model and Random Permutations”, talk, UC Berkeley, 2007
“PCMI Summer School in Statistical Mechanics”, Park City, USA, 2007
8. PRESENTED PAPERS, LECTURES, AND EXHIBITIONS AND PERFORMANCES: (con’t)
“Brownian Motion in Random Media and Homogenization”, talk, UC Berkeley, 2006
“Probabilistic and Analytical Perspectives on Contemporary PDEs”, Carnegie Mellon University, USA Pittsburgh, 2006

9. WORK IN PROGRESS: None

A. Papers submitted to journals for consideration: None

B. Other completed papers: None

C. Research in progress:

10. PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS:
Honorary International Chair Professor, National Taipei University of Technology, 2012
Nikki Kose Memorial Teaching Prize, UC Berkeley Department of Mathematics, 2010
Outstanding Graduate Student Instructor, UC Berkeley Graduate Division, 2007
Best Student Graduating from the Department of Mathematics, University of Belgrade, 2002
Two-second and one third Prizes at the International Mathematics Competition for University Students (Europe), 2000 – 2002
Silver Medal at the 40th International Mathematical Olympiad (held in Romania), 1999
Mayo, Anita

1. **EDUCATION:**

<table>
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<tr>
<th>Degree</th>
<th>Institution</th>
<th>Field</th>
<th>Dates</th>
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<tr>
<td>Ph D</td>
<td>New York Univ.</td>
<td>Mathematics</td>
<td>1979</td>
</tr>
<tr>
<td>BA</td>
<td>Barnard College</td>
<td>Mathematics</td>
<td>1968</td>
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2. **FULL-TIME ACADEMIC EXPERIENCE:**

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<th>Institution</th>
<th>Rank</th>
<th>Field</th>
<th>Dates</th>
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<tbody>
<tr>
<td>Baruch College</td>
<td>Professor</td>
<td>Mathematics</td>
<td>January 2006 - Present</td>
</tr>
<tr>
<td>Mathematics Department, New York University</td>
<td>Visiting Member</td>
<td>Mathematics</td>
<td>September 1, 2012 - August 31, 2013</td>
</tr>
<tr>
<td>Baruch College</td>
<td>Associate Professor</td>
<td>Mathematics</td>
<td>September 2003 - January 2006</td>
</tr>
<tr>
<td>SUNY at Stony Brook</td>
<td>Assistant Professor</td>
<td>Mathematics</td>
<td>September 1983 - June 1984</td>
</tr>
<tr>
<td>Stanford University</td>
<td>Visiting Asst. Prof.</td>
<td>Computer Science</td>
<td>September 1982 - September 1983</td>
</tr>
<tr>
<td>Univ. of California Berkeley</td>
<td>Lecturer</td>
<td>Mathematics</td>
<td>September 1979 - September 1981</td>
</tr>
<tr>
<td>John Jay College</td>
<td>Lecturer</td>
<td>Mathematics</td>
<td>September 1974 - September 1975</td>
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3. **PART-TIME ACADEMIC EXPERIENCE:**

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<th>Field</th>
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<tr>
<td>John Jay College</td>
<td>Adjunct Lecturer</td>
<td>Mathematics</td>
<td>September 1975 - September 1977</td>
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4. **NON ACADEMIC EXPERIENCE:**

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<th>Place of Employment</th>
<th>Title</th>
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<tbody>
<tr>
<td>IBM, Watson Research Center</td>
<td>Consultant</td>
<td>October 2002 - April 2004</td>
</tr>
<tr>
<td>IBM, Watson Research Center</td>
<td>Member of Research Staff</td>
<td>June 1984 - July 2002</td>
</tr>
<tr>
<td>IBM, General Products Division</td>
<td>Consultant</td>
<td>September 1982 - September 1983</td>
</tr>
<tr>
<td>IBM, General Products Division</td>
<td>Academic Associate</td>
<td>September 1981 - September 1982</td>
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5. **EMPLOYMENT RECORD AT BARUCH:**

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<th>Rank</th>
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<tbody>
<tr>
<td>Professor</td>
<td>January 2006 - Present</td>
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<tr>
<td>Associate Professor</td>
<td>September 2003 - January 2006</td>
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6. **PUBLICATIONS IN FIELD OF EXPERTISE:**

A. **Books:**

B. **Papers in Professional Journals:**

- **(1) Articles:**


(2) Proceedings:


C. Chapters in Books:

D. Government Reports or Monographs:

E. Book Reviews:


7. OTHER PUBLICATIONS:

Mayo, A. (2007). Particle-mesh methods for the evaluation of fields induced by vortex sheets (pp. 23).

Mayo, A. (2007). Why the ADI method sometimes works well for valuing multi asset options, and why sometimes it doesn't (pp. 15).


8. PRESENTED PAPERS, LECTURES, AND EXHIBITIONS AND PERFORMANCES:


Mayo, A., Math Department, Duke University, "On a variety of particle mesh methods for the evaluation of fields". (October 2005).


Mayo, A., Math Department, New Jersey Institute of Technology, "On particle mesh methods for the evaluation of fields induced by vortex sheets". (January 2004).


Mayo, A., International Conference on Dynamics of Continuous, Discrete and Impulsive Systems, University Western Ontario, "Rapid, fourth order accurate solution of the steady Navier Stokes equations on general regions". (July 2001).

Mayo, A., University of Zurich, Switzerland, "Rapid Mesh Methods for Solving Low Reynolds Number Fluid Equations". (March 2000).

Mayo, A., Conference on Sparse Representation of Integral Operators, Mathematics Institute, Oberwolfach, Germany, "On particle mesh methods for the evaluation of fields induced by vortex sheets". (February 2000).


Mayo, A., 12th GAMM Seminar on Boundary Integral Methods, Kiel, Germany, "Rapid parallel evaluation of integrals in potential theory on general three dimensional regions". (January 1996).

Mayo, A., Mathematics Department, University California, Davis, "Three dimensional computations in magnetics". (November 1995).

Mayo, A., NIST (National Institute Science and Technology) workshop on large scale computation and realistic microstructure, "On the evaluation of heat potentials on general regions". (August 1995).

Mayo, A., Computer Science Department, University of Maryland, "Rapid evaluation of integrals in potential theory with applications magnetics and electrodeposition". (December 1994).

Mayo, A., Upstate NY Numerical Analysis Conference, Cornell University, "Rapid evaluation of integrals in potential theory with applications to magnetics and electrodeposition". (November 1994).


9. WORK IN PROGRESS:
   A. Papers submitted to journals for consideration.
   B. Other completed papers.
   C. Research in progress.


I plan to develop and implement fast numerical schemes for solving the heat equation on general regions. I will publish a paper detailing results.

10. PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS:

11. GRANTS-IN-AID:


Mayo, A., Sponsored Research, "Research Award 62563-00 40", PSC CUNY. (start: 2009, end: 2010).


Mayo, A., Grant, "Travel and Housing, Beale Conference, Duke University", National Science Foundation, Federal, $1,200.00, Funded. (start: June 1, 2010, end: June 7, 2010).


Mayo, A. (Principal), Sponsored Research, "Research Award, 69366-00 38", PSC-CUNY, $3,990.00. (start: 2007, end: 2008).

Mayo, A. (Principal), Sponsored Research, "Research Award, 68427-00 37", PSC-CUNY, $2,800.00. (start: 2006, end: 2007).

Mayo, A. (Principal), Sponsored Research, "Research Award, 67499-00 36", PSC-CUNY, $3,800.00. (start: 2005, end: 2006).


12. INSTITUTIONAL SERVICE:
   A. Service to the Department

      Calculus Committee, Committee Member. (2004 - Present).

      Final Exam Committee. (2003 - Present).


   B. Service to the School
WSAS Faculty Committee on Research and travel, Committee Member. (September 2006 - Present).


C. Service to the College

Taskforce on Quantitative Pedagogy, Member. (2007 - Present).

Student Faculty Disciplinary Committee, Committee Member. (2004 - 2006).

D. Service to the Graduate Center

Committee on Graduate Studies, Committee Member. (October 2006 - Present).

E. Service to the University


13. OFFICES HELD IN PROFESSIONAL SOCIETIES:

14. OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE:

University of Waterloo, External Examiner PhD, Computer Science Department, Waterloo, Ontario, Canada, Compensated. (March 2010).

External examiner, Ph.D. committee, Jian Wang


15. **TEACHING ACTIVITIES AT BARUCH:**

A. Courses Taught

- 2610, Calculus I, Math.
- 3010, Calculus II, Math.
- 9903, Capstone Project and Presentation, Math.
- 3020, Intermediate Calculus, Math.
- 4120, Introduction to Probability, Math.
- 9821, Numerical Linear Algebra, Math.
Moreno, Carlos

1. EDUCATION:

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<td>Ph D</td>
<td>Courant Institute (New York University)</td>
<td>Mathematics</td>
<td>1971</td>
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<td>BA</td>
<td>Washington Sq. College</td>
<td>Mathematics</td>
<td>1968</td>
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2. FULL-TIME ACADEMIC EXPERIENCE:

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<th>Rank</th>
<th>Field</th>
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<tr>
<td>Baruch College</td>
<td>Professor</td>
<td>Mathematics</td>
<td>1985 - Present</td>
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<tr>
<td>University of Illinois</td>
<td>Professor</td>
<td>Mathematics</td>
<td>1984 - 1985</td>
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<tr>
<td>University of Illinois</td>
<td>Associate Professor</td>
<td>Mathematics</td>
<td>1976 - 1984</td>
</tr>
<tr>
<td>Institute des Hautes Etudes</td>
<td>Visiting Member</td>
<td>Mathematics</td>
<td>1979 - 1980</td>
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<tr>
<td>Scientifiques (Paris, France)</td>
<td>Member</td>
<td>Mathematics</td>
<td>1976 - 1977</td>
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<tr>
<td>Center for Advanced Studies (University of Illinois)</td>
<td>Visiting Member</td>
<td>Mathematics</td>
<td>1976 - 1977</td>
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<tr>
<td>Princeton Institute for Advanced Study,</td>
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<tr>
<td>University of Illinois</td>
<td>Assistant Professor</td>
<td>Mathematics</td>
<td>1972 - 1976</td>
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<tr>
<td>Center for Advance Studies, University of Illinois</td>
<td>Member</td>
<td>Mathematics</td>
<td>1971 - 1972</td>
</tr>
<tr>
<td>Center for Advanced Studies (University of Illinois)</td>
<td>Member</td>
<td>Mathematics</td>
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<tr>
<td>University of Puerto Rico</td>
<td>Visiting Professor</td>
<td>Mathematics</td>
<td>1998</td>
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4. NON ACADEMIC EXPERIENCE:

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5. EMPLOYMENT RECORD AT BARUCH:

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<td>Professor</td>
<td>1985 - Present</td>
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6. PUBLICATIONS IN FIELD OF EXPERTISE:

A. Books:


B. Papers in Professional Journals:

1. Articles:


(2) Proceedings:


C. Chapters in Books:

D. Government Reports or Monographs:


E. Book Reviews:

7. **OTHER PUBLICATIONS:**


8. **PRESENTED PAPERS, LECTURES, AND EXHIBITIONS AND PERFORMANCES:**

Moreno, C., XVII Coloquio Latino Americano de Algebra, Medellin, Columbia, "The Representation Theory of SL(2) and Hensel's Lemma".

Moreno, C., International Mathematics Seminar; Main Invited Speaker, Escuela Politecnica del Ejercito, Latacunga, Ecuador. (October 2008).


Moreno, C., Mathematics Colloquium, Mathematics Department of Tulane University. (May 2008).

Moreno, C., Joint Canada-USA Number Theory Conference; Invited Speaker, Mathematics Department of University of Maine, Bangor, Maine. (September 2007).

Moreno, C., Invited Speaker and Visitor, University of Cordoba, Cordoba, Argentina. (August 2007).

Moreno, C., The XVI Colloquio Latino-Americano de Algebra; Invited Speaker, Colonia, Paraguay. (August 2007).

Moreno, C., Fq8: International Conference on Finite Filelds, Melbourne, Australia, "Exponential Sums over Galois Rings and Applications". (August 12, 2007).

Moreno, C., Eighth Internatinal Conference on Finite Fields; Principal Speaker, Deakon University, Melbourne, Australia. (July 2007).


Moreno, C., The XVII Coloquio Latino-Americano de Algebra; Invited Speaker, Member of the Scientific Organizing Committee, Medellin, Colombia. (July 2007).

Moreno, C., REU (Research Experience for Undergraduate; Invited Speaker and Senior Consultant, Clemson University, Clemson, South Carolina. (June 2007).

Moreno, C., The 26th International Colloquium in Group Theoretical Methods in Physics; Speaker, Graduate Center, CUNY. (June 2006).


Moreno, C., Sexto Coloquio Nacional de Codigos, Cryptografia y Areas Relacionadas, Ciudad de Mexico, Mexico, "Curso de Teoria de Codigos". (June 2004).

Moreno, C., Conferencia Plenaria, Sexto Coloquio Nacional de Codigos, Cryptografia y Areas Relacionadas, Ciudad de Mexico, Mexico, "History of Error Correcting Codes: Half a Century of Development". (June 17, 2004).


Moreno, C., Graduate Center, CUNY, "Primality Testing: The work of Agrawal (Primality Testing is of Polynomial Complexity)". (2002).


Moreno, C., In celebration of the appointment of Victor Kolyvagin, as Distinguished Professor in Number Theory, Graduate Center, CUNY, "Euler Systems (two lectures)". (2000).

Moreno, C., Inaugural lecture to the Colombian Academy of Sciences as a newly elected member, Colombian Academy of Sciences, "Information Theory (After 50 years of development)". (July 1999).


Moreno, C., Algebra Conference, Polytechnic Institute, Iztapalapa, Mexico City, Mexico, "Exponential Sums and Monodromy Problems". (November 1996).

Moreno, C., Joint Meeting of the American Math. Society and the Mexican Mathematical Society; Speaker at Special Section on Coding Theory, Guanajuato, Mexico, "Exponential Sums and Error Correcting Codes". (December 1995).

Moreno, C., Workshop in Algebra, Main Speaker, Mexico City, Mexico, "Algebraic Curves, Error Correcting Codes and Exponential Sums". (November 1995).

Moreno, C., Thirtieth Allerton Conference on Coding Theory; Speaker, Urbana, Illinois, "Exponential Sums and the Theory of Error Correcting Codes". (October 1995).

Moreno, C., National University, Bogota, Colombia, "Andrew Wiles' Proof of Fermat's Last Theorem: Lecture II". (August 1995).

Moreno, C., Logic Colloquium, Universidad de los Andes, Bogota, Colombia, "Andrew Wiles' Proof of Fermat's Last theorem: Lecture I". (July 1995).

Moreno, C., WorkShop in Coding Theory and Algebraic Geometry, Lumini, France, "Two New Results on Kloostermann Sums". (June 1995).


Moreno, C., IX-th Faculty Research Conference, University of Puerto Rico, Humacao, "Fermat's Last Theorem". (February 1994).

Moreno, C., Mathematics Seminar, City College, "Update on the Status of Wiles' Proof of Fermat's Last Theorem". (December 1993).

Moreno, C., 50-th Anniversary of the Mexican Mathematical Society; Main Speaker, Morelia, Mexico, "Andrew Wiles' Solution to Fermat's Last Theorem". (October 1993).

Moreno, C., ELAM (Latin American School of Mathematics); Speaker, Guanajuato, Mexico, "The P-adic Serre Bound and its Implications for Algebraic Geometry". (August 1993).

Moreno, C., Mathematics Colloquium, Universidad Nacional Autonoma de Mexico, Mexico City, Mexico, "Andrew Wiles' Work on Fermat's Last Theorem". (August 1993).

Moreno, C., Mathematics Colloquium, University of Miami, "On Andrew Wiles' Solution of Fermat's Last Theorem". (August 1993).

Moreno, C., Mathematics Colloquium, Universidad Nacional, Colombia, "On Andrew Wiles' Solution of Fermat's Last Theorem". (July 1993).


Moreno, C., Mathematics Colloquium, University of Puerto Rico, Mayaguez, "On Andrew Wiles' Solution of Fermat's Last Theorem". (July 1993).


Moreno, C., Mathematics Seminar, Gottingen University, Germany, "Modular Forms and Error Correcting Codes". (July 1992).


Moreno, C., Bowdoin Conference on Theta Functions, American Mathematical Society and the National Science Foundation, Bowdoin (Brunswick, Me), "The Rademacher Formula for String Functions". (August 1987).

Moreno, C., Ramanujan Revisited, Centenary Conference, Urbana, Illinois, "Exact Formulas for the Weight Multiplicities of Affine Lie Algebras". (June 1987).

9. **WORK IN PROGRESS:**
   A. Papers submitted to journals for consideration.


   B. Other completed papers.

   C. Research in progress.


   Moreno, Carlos, "Exponential Sums And Their Applications". Monograph, 250 pages (This monograph was originally submitted to World Scientific and accepted for publication in 1998; a greatly expanded version is under preparation and will be resubmitted)

   Moreno, Carlos, Catto, Sultan, "The Cayley Plane and the structure of exceptional Lie groups".

   Moreno, Carlos, Wan, Aaron, "The local root number for quadratic extensions".

   Moreno, Carlos, "The Representations of GL(2) over a Finite Field". Monograph, 100 pages

   Moreno, Carlos, "Wiles's Proof of Fermat's Last Theorem". book; 500 pages completed

10. **PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS:**

    Corresponding Member, National Academy of Sciences of Colombia. (1999). elected 1999

    Senior Fulbright Lecturer, National University of Colombia. (1980).

11. **GRANTS-IN-AID:**
Moreno, C., PSC-CUNY Grant Awards, $15,000.00. (start: 2004, end: 2009).

Moreno, C., PSC-CUNY Award (Amounts range from $2,000 to $6,000). (start: 1993, end: 2009).


Moreno, C., "Co-PI in CUNY Collaborative Incentive Research Grant Program", $60,000.00. (start: 2004, end: 2006).

Moreno, C., Grant, "Sparc Workstation Based Courses in The Mathematical Science", The Fund for the Improvement of Postsecondary Education (FIPSE); Grant for Curriculum Development in the Mathematical Sciences Through the Use of Technology, $106,000.00. (start: 1992, end: 1996).


Moreno, C., Grant, "Research In the Theory of Modular Forms and Error Correcting Codes", The National Science Foundation, Federal, $78,000.00. (start: 1987, end: 1993).

12. **INSTITUTIONAL SERVICE:**
   A. Service to the Department

   Executive Comm. Mat. Dept., Committee Member. (2003 - Present).

   B. Service to the School

   Ad Hoc Review Committee for School of Natural Sciences, Committee Member. (March 1997).

   C. Service to the College

   Task Force in charge of advising and planning for computer labs at Site-B, Committee Member.

   P & B Committee, Committee Member. (1998 - 2000).


   Provost's Advisory Committee on Academic Planning, Committee Member. (1995).

   College Search Committee for Provost, Committee Member. (1991).
College Search Committee for Dean of School of Liberal Arts, Committee Member. (1988).

P & B Committee, Committee Member. (1986 - 1987).

D. Service to the Graduate Center

The Qualifying Algebra Exams, Committee Member.


Doctoral Dissertation Exam Committee, Committee Member. (February 2005).
for Jorge Pineiro

Faculty Advisor. (1988 - 2004).

Doctoral Dissertation Exam Committee, Committee Member. (February 2004).
for Martin Brock

Doctoral Dissertation Exam Committee, Committee Member. (February 2004).
for Aaron Wan

Doctoral Dissertation Exam Committee, Committee Member. (October 2001).
for Jerry Ianni

Doctoral Dissertation Exam Committee, Committee Member. (February 2001).
for Nam-Jong Moh

Doctoral Dissertation Exam Committee, Committee Member. (June 2000).
for Abdellatif Bellahnid

Doctoral Dissertation Exam Committee, Committee Member. (October 1999).
for Srinath Baba

Doctoral Dissertation Exam Committee, Committee Member. (October 1997).
for Francis Castro

Doctoral Dissertation Exam Committee, Committee Member. (May 1997).
for Wei-Chen Yau

Doctoral Dissertation Exam Committee, Committee Member. (February 1996).
for Lei Yang

Doctoral Dissertation Exam Committee, Committee Member. (February 1991).
for Despina Polemis
E. Service to the University


CUNY Collaborative Incentive Grants Program Review Committee, Member. (2004 - 2005).

University Wide Committee on Research, Committee Member. (1989 - 1992).

13. OFFICES HELD IN PROFESSIONAL SOCIETIES:

Revista, Colombiana de Matematicas, Editor.

14. OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE:

2nd Latin American Congress of Mathematicians, Main Speaker. (June 2004).
  Quadratic Gauss Sums and Plancherel Formula for SL(2)

CUNY Colloquium on The use of technology in the teaching of mathematics at the college level, Baruch, Co-organizer. (1995).
  (Joint with Sherman Wong, Sultan Catto and David Tepper)

50th Anniversary of the Mexican Mathematical Society, Main Speaker. (October 1993).
  Andrew Wiles' Solution to Fermat's Last Theorem

  Algebraic Curves and Error Correcting Codes: A Survey


NSF selection panel for Presidential Young Investigators, Committee Member. (1990).

Evaluation of Panel for the National Science Foundation's Postdoctoral Fellowships in Mathematical Sciences, Committee Member. (1984 - 1987).


15. TEACHING ACTIVITIES AT BARUCH:

A. Courses Taught

  MTH 2206, Applied Calculus.

  MTH 2207, Applied Calculus & Matrix Algebra.
MTH 2201, Applied Calculus with Refresher.
MTH 2610, Calculus I.
MTH 9903, Capstone Project & Presentations.
MTH 1030, College Algebra.
MTH 2301, Discrete Mathematics.
MTH 3120, Elementary Probability.
MTH 4100, Linear Algebra.
MTH 9842, Linear and Quadratic Optimizatton Techniques: Introduction to Markowitz PortFolio Theory.
MATH 70500 - MATH 70600, Algebra (Graduate Center).
MATH 87400, Topics in Algebraic Number Theory (Graduate Center).
MATH 89902, Independent Research in Algebraic Number Theory (Graduate Center).
MATH 90000, Dissertation Supervision (Graduate Center).
MTH 4120, Mathematical Probability.
MTH 5000-MTH 5004 Independent Study.
MTH 6000-MTH 6003, Honors.
MTH 2003, Precalculus and Elements of Calculus.
MTH 4200, Theory of Numbers.
Pickens, Jarrod L.

1. **EDUCATION:**

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<tr>
<td>Ph D</td>
<td>University of California</td>
<td>Mathematics</td>
<td>2010</td>
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<tr>
<td>MA</td>
<td>University of California</td>
<td>Mathematics</td>
<td>2004</td>
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<tr>
<td>BS</td>
<td>University of Pittsburgh</td>
<td>Mathematics/Physics</td>
<td>2003</td>
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2. **FULL-TIME ACADEMIC EXPERIENCE:**

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<th>Institution</th>
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<tr>
<td>Baruch College, CUNY</td>
<td>Lecturer</td>
<td>Mathematics</td>
<td>August 2010 - Present</td>
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<tr>
<td>Penn State Altoona</td>
<td>Assistant Professor</td>
<td>Mathematics</td>
<td>August 2009 - August 2010</td>
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3. **PART-TIME ACADEMIC EXPERIENCE:**

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<tr>
<td>University of California, Santa</td>
<td>MathLab Coordinator</td>
<td>Mathematics</td>
<td>2009</td>
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<tr>
<td>Barbara (UCSB)</td>
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<tr>
<td>University of California, Santa</td>
<td>Instructor</td>
<td>Mathematics</td>
<td>2004 - 2009</td>
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<td>University of California, Santa</td>
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<td>Mathematics</td>
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<tr>
<td>University of California, Santa</td>
<td>Grader</td>
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<td>University of Pittsburgh</td>
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4. **NON ACADEMIC EXPERIENCE:**

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<td>Addison-Wesley/Pearson Education</td>
<td>WeBWork Developer</td>
<td>2006</td>
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<tr>
<td>University of California, Santa</td>
<td>WeBWork Developer</td>
<td>2006</td>
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<td>Barbara</td>
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5. **EMPLOYMENT RECORD AT BARUCH:**

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<td>Lecturer</td>
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6. **PUBLICATIONS IN FIELD OF EXPERTISE:**

A. Books:

B. Papers in Professional Journals:

1. Articles:

2. Proceedings:

C. Chapters in Books:

D. Government Reports or Monographs:

E. Book Reviews:

7. OTHER PUBLICATIONS:

8. PRESENTED PAPERS, LECTURES, AND EXHIBITIONS AND PERFORMANCES:

Pickens, J., 2012 CUNY Math Conference: Effective Instructional Strategies, CUNY and the Center for Digital Education, John Jay College - CUNY, "WeBWorK Online Homework System". (May 18, 2012).

Pickens, J. (Presenter & Author), Dissertation Defense, UCSB Math Department, Santa Barbara, "Geometric flows on manifold with circle action". (August 19, 2010).


Pickens, J., Western Kentucky University Department of Mathematics, Western Kentucky University, "Ricci Flow on Manifolds with Boundary/Applications". (2009).

Pickens, J. (Presenter & Author), University of California, Santa Barbara, "Ricci Flow of a Class of Metrics on T2 x I". (2007).

Pickens, J. (Presenter Only), Graduate Student Seminar, UCSB Math Department, UCSB, "Introduction to Clifford Algebras". (2006).

Pickens, J. (Presenter Only), Graduate Student Seminar, UCSB, "The Twin Paradox Revisited". (2004).


9. WORK IN PROGRESS:
A. Papers submitted to journals for consideration.

B. Other completed papers.

C. Research in progress.

Pickens, J. Cross-curvature flow on manifolds with boundary.

Pickens, J. The Biot-Savart Operator on Homogeneous 3-Manifolds.

10. PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS:
Departmental Fee Fellowship (2004-2009), Awarded by the University of California, Santa Barbara, Department of Mathematics.

Rush Rhees Scholarship (1999-2000), Awarded by the University of Rochester.

Departmental Research Fellowship, Awarded by the University of California, Santa Barbara. (2009).

Raymond A. Wilder Award, Outstanding First Year Mathematics Graduate Student, Awarded by the University of California, Santa Barbara, Department of Mathematics. (2004).

Departmental Honors in Physics, University of Pittsburgh. (2003).

11. GRANTS-IN-AID:

12. INSTITUTIONAL SERVICE:
   A. Service to the Department

Calculus Committee, Committee Member. (August 2013 - Present).
   Discussed curriculum for MTH 2610, 3006, 3010, 3020, 3030.

Math Matters Group, Liaison. (January 2011 - Present).
   Met with other CUNY Math Department liaisons to discuss use of CUNY Academic Commons within our departments.

Base Curriculum Committee, Committee Member. (August 2010 - Present).
   Discussed curriculum for MTH 2003, 2205, 2207.

Final Exam Committee, Committee Member. (August 2010 - Present).

Web Site Committee, Committee Member. (August 2010 - Present).
   Maintaining departmental web site.

WeBWorK. (August 2010 - Present).
   Partially managed WeBWorK system. Managed MTH 2003 courses. Developed software to expedite set up. Developed problem sets for non-standard courses. Created WeBWorK modules for hybrid courses. Assisting in embedding video solutions.

Lecturer Selection Committee, Committee Member. (December 2012 - March 2013).
   Selected and interviewed candidates for 2 lecturer positions.

23rd St Room Committee, Committee Member, Prepared a report on the suitability of the classrooms in 17 Lex for use with our courses. (December 2010).
   Surveyed the classrooms in 17 Lex and determined their suitability for use with our courses.
B. Service to the School

Committee on Academic Standing, Committee Member. (August 2012 - Present).

C. Service to the College

Joint Committee on Academic Standing, Substitute Member. (August 2012 - Present).

D. Service to the Graduate Center

E. Service to the University

CUNYMath Oversight Committee, Committee Member. (January 2011 - Present).

13. OFFICES HELD IN PROFESSIONAL SOCIETIES:

14. OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE:

15. TEACHING ACTIVITIES AT BARUCH:
   A. Courses Taught

      MTH 3300, Algorithms and Programming I.

      MATH 2205, Applied Calculus.

      MTH 2207, Applied Calculus and Matrix Algebra.

      MTH 2610, Calculus I.

      MATH 3010, Calculus II.

      MATH 3120, Elementary Probability.

      MATH 5000, Independent Study: Topics in Probability.

      MATH 4120, Introduction to Probability.

      MATH 4100, Linear Algebra.

      MTH 2003, Precalculus and Elements of Calculus.

      MATH 2003, Precalculus and Elements of Calculus (Hybrid).
Radoicic, Rados

1. **EDUCATION:**

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<td>Massachusetts Institute of Technology</td>
<td>Mathematics</td>
<td>2004</td>
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<td>BS</td>
<td>Massachusetts Institute of Technology</td>
<td>Mathematics with Computer Sciences</td>
<td>2000</td>
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2. **FULL-TIME ACADEMIC EXPERIENCE:**

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<td>Mathematics</td>
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<td>Baruch College</td>
<td>Assistant Professor</td>
<td>Mathematics</td>
<td>September 2004 - January 2009</td>
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<tr>
<td>Rutgers University</td>
<td>Assistant Professor</td>
<td>Mathematics</td>
<td>July 2004 - July 2006</td>
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3. **PART-TIME ACADEMIC EXPERIENCE:**

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<tr>
<td>Massachusetts Institute of Technology</td>
<td>Teaching Assistant</td>
<td>Mathematics</td>
<td>1999 - 2004</td>
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<tr>
<td>University of Sarajevo</td>
<td>Lecturer</td>
<td>Mathematics</td>
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4. **NON ACADEMIC EXPERIENCE:**

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<tr>
<td>Mathematical Sciences Research Institute (MSRI)</td>
<td>Member</td>
<td>September 2003 - November 2003</td>
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5. **EMPLOYMENT RECORD AT BARUCH:**

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<td>Associate Professor</td>
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<td>Assistant Professor</td>
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6. **PUBLICATIONS IN FIELD OF EXPERTISE:**

A. **Books:**

B. **Papers in Professional Journals:**

(1) **Articles:**


(2) Proceedings:


Radoicic, R. (Presenter & Author), 20th Annual ACM Symposium on Computational Geometry, ACM, Brooklyn, NY, "On empty convex polygons in a planar point


Radoicic, R. (Presenter & Author), KAM/DIMATIA Discrete Mathematics Seminar, Charles University, Prague, Czech Republic, "Monotone paths in line arrangements", State, published in proceedings, published elsewhere, Accepted. (July 2001).


C. Chapters in Books:


D. Government Reports or Monographs:

E. Book Reviews:

7. OTHER PUBLICATIONS:

Radoicic, R. (2012). Tangled Thrackles. In Márquez, Alberto; Ramos, Pedro; Urrutia, Jorge (Ed.), *Computational Geometry - XIV Spanish Meeting on Computational Geometry, EGC*


Radoicic, R., Toth, G. (2001). Noncrossing Configurations in Geometric Graphs. 11th Annual Fall Workshop on Computational Geometry, Polytechnic University, Brooklyn, NY (pp. 45-51).

8. PRESENTED PAPERS, LECTURES, AND EXHIBITIONS AND PERFORMANCES:


Radoicic, R. (Presenter & Author), 10th Annual Workshop on Combinatorial and Additive Number Theory, CUNY Graduate Center, New York, NY, "Recent results in rainbow Ramsey theory", National, Invited. (May 2012).

Radoicic, R. (Presenter & Author), Conference on Geometric Graph Theory, Bernoulli Interdisciplinary Center, EPFL, Lausanne, Switzerland, "Some recent results on topological graphs", International, Yes, published elsewhere, Invited. (September 2010).


Radoicic, R. (Presenter & Author), AMS Central Section Meeting, DePaul University, Chicago, IL, "Extremal problems on topological graphs", National, published elsewhere, Accepted. (2007).


Radoicic, R. (Presenter & Author), EXCILL: Extremal Combinatorics at Illinois, University of Illinois, Urbana-Champaign, IL, "Turan-type problems for intersection graphs of convex sets", National, published elsewhere, Accepted. (November 2006).


Radoicic, R. (Co-Chair), Workshop on topological graph theory and crossing numbers, Banff International Research Station, Alberta, Canada, "Turan-type problems for intersection graphs of convex sets", International, published elsewhere, Accepted. (October 2006).


Radoicic, R. (Presenter & Author), CUNY Combinatorics Seminar, CUNY, Graduate Center, New York, NY, "Old and new directions in Ramsey theory on integers", Local, published elsewhere, Accepted. (March 2006).
Radoicic, R. (Presenter & Author), Dartmouth College Math Colloquium, Dartmouth College, Hanover, NH, "Intersection patterns of geometric objects", Local, published elsewhere, Accepted. (February 2006).

Radoicic, R. (Presenter & Author), Northeastern University Geometry-Algebra-Singularities-Combinatorics Seminar, Northeastern University, Boston, MA, "Intersection patterns of geometric objects", Local, published elsewhere, Accepted. (February 2006).

Radoicic, R. (Presenter & Author), New York Number Theory Seminar, CUNY Graduate Center, New York, NY, "Some new directions in Ramsey Theory", Local, published elsewhere, Accepted. (December 2005).

Radoicic, R. (Presenter & Author), MIT Combinatorics Seminar, MIT, Cambridge, MA, "Ramsey-type results for the hypercube", National, published elsewhere, Accepted. (November 2005).

Radoicic, R. (Presenter & Author), (AMS Eastern Sectional Meeting) Special Session on Extremal and Probabilistic Combinatorics, AMS, Bard College, Annadale-on-Hudson, NY, "On the diameter of separated point sets with many nearly equal distances", Regional, Yes, published elsewhere, Accepted. (October 2005).

Radoicic, R. (Presenter & Author), Rutgers Discrete Mathematics and Theory of Computing Seminar, Rutgers University, Piscataway, NJ, "Intersection patterns of geometric objects", Local, published elsewhere, Accepted. (September 2005).

Radoicic, R. (Presenter & Author), A Taste of Pi (NSERC program for high school students), Department of Mathematics, Simon Fraser University, Burnaby, BC, Canada, "Iterative processes in the plane", Local, published elsewhere, Accepted. (May 2005).

Radoicic, R. (Presenter & Author), SFU Discrete Mathematics Seminar, Simon Fraser University, Burnaby, BC, Canada, "Intersection patterns of geometric objects", Local, published elsewhere, Accepted. (May 2005).

Radoicic, R. (Presenter & Author), AMS Special Session on Probabilistic Paradigms in Combinatorics, AMS, University of Delaware, Newark, DE, "Intersection patterns of geometric objects", National, Yes, published elsewhere, Accepted. (April 2005).


Radoicic, R. (Presenter & Author), CUNY Combinatorics Seminar, CUNY Graduate Center, New York, NY, "Iterative processes in the plane", Local, published elsewhere, Accepted. (November 2004).
Radoicic, R. (Presenter & Author), Baruch College Mathematics Department Seminar, CUNY, Baruch College, New York, "Crossing patterns in geometric graphs", Local, published elsewhere, Accepted. (February 2004).

Radoicic, R. (Presenter & Author), Microsoft Theory Research Group, Microsoft, Redmond, WA, "Extremal problems in geometric graph theory", Accepted. (January 2004).


Radoicic, R. (Presenter & Author), MIT Graduate Applied Mathematics Seminar, MIT, Cambridge, MA, "A dense planar point set from iterated line intersections", Local, published elsewhere, Accepted. (October 2003).


Radoicic, R. (Presenter & Author), CUNY Combinatorics Seminar, City University of New York, NYC, NY, "Graphs drawn with at most 3 crossing per edge", Local, published elsewhere, Accepted. (November 2002).

Radoicic, R. (Presenter & Author), MIT Graduate Applied Mathematics Seminar, MIT, Cambridge, MA, "Relaxations of planarity and locally planar graphs", Local, published elsewhere, Accepted. (November 2002).


Radoicic, R. (Presenter & Author), DIMACS Workshop on Geometric Graph Theory, Rutgers University, Piscataway, NJ, "On topological graphs with no self-intersecting cycle of length 4", International, Yes, published elsewhere, Accepted. (October 2002).

Radoicic, R. (Presenter & Author), SFU Discrete Mathematics Seminar, Simon Fraser University, Burnaby, BC, Canada, "Rainbow arithmetic progressions", Local, published elsewhere, Accepted. (May 2002).

Radoicic, R. (Presenter & Author), CUNY Combinatorics Seminar, CUNY, NYC, NY, "The chromatic number of 3-space", Local, published elsewhere, Accepted. (October 2001).
Radoicic, R. (Presenter & Author), MIT Graduate Applied Mathematics Seminar, MIT, Cambridge, MA, "k-set problem and monotone paths in line arrangements", Local, Accepted. (June 2001).

9. WORK IN PROGRESS:
   A. Papers submitted to journals for consideration.
   B. Other completed papers.
   C. Research in progress.

   Radoicic, Rados, Stefanica, Dan, "A Closed Form Approximation for the Black-Scholes Formula and for Implied Volatility: At-The-Money Options", Writing Results, Scholarly.

   Radoicic, Rados, Stefanica, Dan, "A Closed Form Approximation for the Black-Scholes Formula and for Implied Volatility: ITM/OTM Options", Writing Results, Scholarly.


   Radoicic, Rados, Fox, J., Jungic, V., Silva, M., "Arithmetic Progressions With a Specified Color Pattern or Common Difference", Writing Results, Scholarly.

   Radoicic, Rados, Fox, J., "Degree of Regularity and the Axioms of Set Theory", Writing Results, Scholarly.


10. PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS:

    Friend of SEEK (Search for Education Elevation Knowledge) Award, Baruch College, Teaching, School. (April 2010).


    Selected among the fifty most successful refugees, Ministry of Education of Bosnia & Herzegovina, Leadership, National. (2005).


Visiting Student Fellowship, Central European University, Scholarship/Research, International. (July 2002).


Walter A. Rosenblith Fellowship, MIT. (April 2001).

AMS Institutional Nominee for MAA and AMS Membership. (April 2000).


11. GRANTS-IN-AID:

Radoicic, R. (Principal), Grant, "3-year research grant, DMS 0503184 continued as DMS 0719830 after transfer to Baruch College, NSF Division: DMS; Program name: Algebra, Number Theory and Combinatorics. Project Title: Graph Theory, Ramsey Theory and Combinatorial Geometry", National Science Foundation, $109,168.00. (start: June 1, 2005, end: May 31, 2009).
Radoicic, R., Grant, "On the Existence of Crossing Configurations in Graph Drawings and Intersection Graphs", PSC-CUNY 38 Research Award, PSCOOC-38-176, $4,017.00. (start: July 1, 2007, end: December 31, 2008).

Radoicic, R. (Co-Principal), Pach, J. (Principal), Grant, "NYU, NSF Grant CCR-00-98245", Courant Institute of Mathematical Sciences, $5,000.00. (start: July 2004, end: August 2004).

Radoicic, R. (Co-Principal), Pach, J. (Principal), Grant, "Courant Institute of Mathematical Sciences NSF grant CCR-00-98246", $5,000.00. (start: June 2003, end: July 2003).

Radoicic, R. (Co-Principal), Vempala, S. (Principal), "Research Assistantship, NSF Grant CCR-9875024", MIT, $2,000.00. (end: August 2001).

Radoicic, R. (Co-Principal), Toth, G. (Principal), "Research Assistantship. NSF Grant DMS 99-70071", MIT, $2,000.00. (end: June 2001).

12. INSTITUTIONAL SERVICE:
   A. Service to the Department

   Transcript evaluation and placement of transfer students, Faculty Advisor. (September 2006 - Present).

   Final Exams Committee, Committee Member, Yes, elected. (2006 - Present).

   Masters in Financial Engineering Committee, Committee Member, Yes, elected. (2006 - Present).

   B. Service to the School

   Graduate Studies Committee, Committee Member, Yes, elected. (2008 - 2010).

   C. Service to the College

   9th Annual Rotman International Trading Competition at the Rotman School of Management, University of Toronto, Faculty Mentor, The Baruch MFE teams ranked first and fourth place out of 50 teams.. (2012).

   Baruch's First Annual Mathlete Competition, Committee Chair. (2008).

   D. Service to the Graduate Center

   E. Service to the University

   CUNY Math Challenge Committee (CUNY-wide Undergraduate Contest in Mathematics), Committee Member. (September 2009 - Present).
13. **OFFICES HELD IN PROFESSIONAL SOCIETIES:**


- The Mathematical Association of America, MAA, member, National. (1999 - Present).


14. **OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE:**


- NSA Grant in Mathematical Sciences, Reviewer, Grant Proposal, Yes, elected. (2007).


15. TEACHING ACTIVITIES AT BARUCH:

A. Courses Taught

MTH 2205, Applied Calculus (6 times), Lower Division, Undergraduate.

MTH 2610, Calculus I, Lower Division, Undergraduate.

MTH 3010, Calculus II, Upper Division, Undergraduate.

MTH 4150, Combinatorics (7 times), Upper Division, Undergraduate.

MTH 4140, Graph Theory (7 times), Upper Division, Undergraduate.

MTH 2003, Precalculus and Elements of Calculus (10 times), Lower Division.

MTH 4120, Probability, Upper Division, Undergraduate.

MTH 9841, Statistics for Finance (twice), Graduate, new format for existing course.

MATH 3100, Selected Topics in Discrete Mathematics, Upper Division, Undergraduate, new course preparation, (Spring 2012).

MATH 4005, Problem Solving Seminar, Upper Division, Undergraduate, new course preparation, (Fall 2011).

MTH 9814, A Quantitative Introduction to Pricing Financial Instruments, Graduate, (Fall 2008).

B. New courses/programs developed

MATH 3100, Selected Topics in Discrete Mathematics, Upper Division, Undergraduate, new course preparation, (Spring 2012).

MATH 4005, Problem Solving Seminar, Upper Division, Undergraduate, new course preparation, (Fall 2011).

Richter, Anja

1. EDUCATION:

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2. FULL-TIME ACADEMIC EXPERIENCE:

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<td>Eidgenössische Technische Hochschule (ETH Zurich), Switzerland</td>
<td>Postdoctoral Student</td>
<td>Mathematics</td>
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<td>ETH</td>
<td>Co-Supervision Master Thesis</td>
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<td>ETH</td>
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<td>ETH</td>
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4. NON ACADEMIC EXPERIENCE: None

5. EMPLOYMENT RECORD AT BARUCH: None

6. PUBLICATIONS IN FIELD OF EXPERTISE:

   A. Books: None

   B. Papers in Professional Journals:

   (1) **Articles:**

   (2) **Proceedings:** None

   C. **Chapters in Books:** None

   D. **Government Reports or Monographs:** None

   E. **Book Reviews:** None

7. OTHER PUBLICATIONS: None
8. PRESENTED PAPERS, LECTURES, AND EXHIBITIONS AND PERFORMANCES:
Research Seminar, invited talk, Universität Ulm, Germany, February 2013
Research Seminar, invited talk, University of the Witwatersrand, South Africa, September 2012
“PIMS-AMI”, Seminar, invited talk, University of Alberta, Canada, August 2012
“Bachelier Finance Society”, 7th World Congress, Australia, June 2012
“Mathematical and Statistical Methods for Actuarial Science and Finance”, Italy, April 2012
“Risk and Asset Allocation”, Seminar, ETH, Spring 2012
“Probability and Statistics”, 10th German Conference, Germany, March 2012
“6th Bachelier Colloquium”, France, January 2012
“Finance and Insurance”, Seminar, invited talk, Universität Bonn, Germany, January 2012
“Analysis and Stochastics”, Seminar, invited talk, Technische Universität Dresden, Germany, December 2010
“Quantitative Methods in Finance”, Conference, Australia, December 2009
“Risk and Stochastics”, Seminar, London School of Economics, UK, November 2009
“Financial Mathematics” Second SMAI European Summer School, France, August 2009
“Mathematical Finance”, Istambul Workshop, Turkey, May 2009
“Mathematical Finance”, Seminar, Technische Universität Wien, Austria, May 2009
“Mathematical Finance for Young Researchers”, Workshop, Germany, October 2008

9. WORK IN PROGRESS: None

A. Papers submitted to journals for consideration: None

B. Other completed papers: None

C. Research in progress:

10. PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS:
Member of the Berlin Mathematical School (German Initiative for Excellence), 2008 - 2011
Student Representative of the International Research Training Group 1339, 2008 - 2010

11. GRANTS-IN-AID:
    Erasmus Grant to study at Lund University, Sweden, 2003 – 2004

12. INSTITUTIONAL SERVICE: None

   A. Service to the Department: None

   B. Service to the School: None

   C. Service to the College: None

BSFE Proposal
12. **INSTITUTIONAL SERVICE:** (con’t)

   D. **Service to the Graduate Center:** None

   E. **Service to the University:** None

13. **OFFICES HELD IN PROFESSIONAL SOCIETIES:** None

14. **OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE:**
    - Stochastic Processes and their Applications, Referee
    - Electronic Communications in Probability Theory, Referee
    - ETH internal for Bachelor and Master Theses, Referee
Shaw, Beryl I.

1. **EDUCATION:**

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<th>Degree</th>
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<tr>
<td>Ph D</td>
<td>Yeshiva University</td>
<td>Mathematics</td>
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<td>MA</td>
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2. **FULL-TIME ACADEMIC EXPERIENCE:**

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3. **PART-TIME ACADEMIC EXPERIENCE:**

4. **NON ACADEMIC EXPERIENCE:**

5. **EMPLOYMENT RECORD AT BARUCH:**

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<td>Assistant Professor</td>
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6. **PUBLICATIONS IN FIELD OF EXPERTISE:**

A. **Books:**


B. **Papers in Professional Journals:**

   (1) **Articles:**


   (2) **Proceedings:**

C. **Chapters in Books:**
D. Government Reports or Monographs:

E. Book Reviews:

7. **OTHER PUBLICATIONS:**

8. **PRESENTED PAPERS, LECTURES, AND EXHIBITIONS AND PERFORMANCES:**

9. **WORK IN PROGRESS:**
   A. Papers submitted to journals for consideration.
   
   B. Other completed papers.
   
   C. Research in progress.

10. **PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS:**

11. **GRANTS-IN-AID:**

12. **INSTITUTIONAL SERVICE:**
   A. Service to the Department
      
      Over 30 years of service on many math department committees.
   
   B. Service to the School
   
   C. Service to the College
   
   D. Service to the Graduate Center
   
   E. Service to the University

13. **OFFICES HELD IN PROFESSIONAL SOCIETIES:**

14. **OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE:**

15. **TEACHING ACTIVITIES AT BARUCH:**
   A. Courses Taught
      
      Innovative teaching of Math 4320 (Fundamental Algorithms) over a 13 year period 1988-2001 using a variety of computer languages., new format for existing course.
      
      Taught most courses offered in math department - numerous times..
      
      Webwork for Mathematics Spring 2004 with Prof. Sherman Wong, new course preparation.
   
   B. New courses/programs developed
      
      Webwork for Mathematics Spring 2004 with Prof. Sherman Wong, new course preparation.
Stefanica, Dan

1. **EDUCATION:**

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<td>BA</td>
<td>University of Bucharest</td>
<td>Mathematics</td>
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2. **FULL-TIME ACADEMIC EXPERIENCE:**

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<td>Baruch College</td>
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</table>
6. PUBLICATIONS IN FIELD OF EXPERTISE:

A. Books:


B. Papers in Professional Journals:

1. Articles:


2. Proceedings:


C. Chapters in Books:

D. Government Reports or Monographs:

E. Book Reviews:

7. OTHER PUBLICATIONS:


8. **PRESENTED PAPERS, LECTURES, AND EXHIBITIONS AND PERFORMANCES:**


Stefanica, D., Interative Methods, Preconditioning and Numerical PDEs, Czech Technical University, Prague, "Balancing Algorithms for Mortars". (May 2004).

Stefanica, D., Interative Methods, Preconditioning and Numerical PDEs, Czech Technical University, Prague, "Scalable FETI Based Algorithms for Variational Inequalities and Effective Algorithms For Quadratic Programming". (May 2004).


Stefanica, D., Fall 1998 Finite Element Meeting, University of Maryland, College Park, "Numerical Results for the FETI Method with Mortars". (November 1998).


Stefanica, D., Special Analysis Seminar, Courant Institute of Mathematical Sciences, "Poincare and Friedrichs Inequalities for Mortar Finite Elements". (November 1997).

Stefanica, D., Fall 1997 Finite Element Meeting, Cornell University, "Mortar Finite Elements for the FETI Method". (October 1997).

Stefanica, D., Numerical Analysis Workshop, Sion, Switzerland, "Domain Decomposition Methods for Mortar Finite Elements". (September 1997).


Stefanica, D., SIAM 45th Annual Meeting, Stanford University; Poster, "Poincare and Friedrichs Inequalities for Mortar Finite Element". (July 1997).


9. WORK IN PROGRESS:
A. Papers submitted to journals for consideration.


   Dostal, Z., Horak, D., Stefanica, D. A Scalable FETI--DP Algorithm with Non-penetration Mortar Conditions on the Contact Interface.

B. Other completed papers.

C. Research in progress.

Stefanica, Dan, "A Balancing Algorithm for Mortar Finite Elements", On-Going.

Radoicic, Rados, Stefanica, Dan, "A Closed Form Approximation for the Black-Scholes Formula and for Implied Volatility: At-The-Money Options", Writing Results, Scholarly.

Radoicic, Rados, Stefanica, Dan, "A Closed Form Approximation for the Black-Scholes Formula and for Implied Volatility: ITM/OTM Options", Writing Results, Scholarly.

Stefanica, Dan, "A Neumann-Neumann Algorithm for Mortar Finite Elements", On-Going.


Stefanica, Dan, "Lower Bounds for Overlapping and Nonoverlapping Domain Decomposition Preconditioners for Mortar Element Methods", On-Going.

Stefanica, Dan, "On Fitting Zero Curves and Forward Rate Curves with Maximum Smoothness", On-Going.

10. PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS:


SIAM Student Travel Award. (1999).


Teaching and Researching Assistantship, Courant Institute, New York University. (1998).


Teaching and Researching Assistantship, Courant Institute, New York University. (1997).

Summer Research Assistantship, Courant Institute, New York University, University. (1996).

Teaching and Researching Assistantship, Courant Institute, New York University. (1996).

Teaching and Researching Assistantship, Courant Institute, New York University, Teaching, University. (1994).


11. GRANTS-IN-AID:

Stefanica, D., Grant, "PSC-CUNY Award 69738-00; Title: Numerical Algorithms in Financial Mathematics", Research Foundation of the City University of New York, $3,540.00. (start: July 1, 2007, end: June 30, 2008).

Stefanica, D., Grant, "PSC-CUNY Award 67301-00 36; Title: Balancing Algorithms for Mortar Methods and Mixing in Downslope Flows", Research Foundation of the City University of New York, $3,311.00. (start: July 1, 2005, end: June 30, 2006).

Stefanica, D., Grant, "PSC-CUNY Award 66529-00 35; Title: FETI Algorithms for Contact Problems", Research Foundation of the City University of New York, $4,600.00. (start: July 1, 2004, end: June 30, 2005).

Stefanica, D., Grant, "PSC-CUNY Award 65463-00 34 / Title: FETI Algorithms for Mortar Methods", National Science Foundation, Division of Mathematical Science, $64,350.00. (start: July 1, 2001, end: July 31, 2003).

Stefanica, D., Grant, "PSC-CUNY Award 63461-00 32 / Title: FETI Method for Spectral Elements", Research Foundation of the City University of New York, $4,142.00. (start: July 1, 2001, end: December 31, 2002).

12. INSTITUTIONAL SERVICE:
A. Service to the Department

Executive Committee, Committee Member. (May 2003 - Present).

Graduate Committee. (2000 - Present).

Final Exams Committee. (1999 - Present).

M.S. in Applied Mathematics for Finance, Committee Chair. (1999 - Present).

Department Secretary. (2000 - 2003).

B. Service to the School
Graduate Affairs Committee, Committee Member. (September 2002 - Present).

Master of Science Program in Applied Mathematics for Finance, Director. (September 2002 - Present).

C. Service to the College

Search Committee for the Dean of the Weisman School of Arts and Sciences, Committee Member. (August 2007 - December 2007).

Search Committee for the Dean of the Weisman School of Arts and Sciences, Committee Chair. (January 2007 - May 2007).

College for a Day, Instructor. (November 2003).

D. Service to the Graduate Center

E. Service to the University

Reviewer for the Alliance for Minority Participation in "STEM" disciplines-Science, Technology, Engineering, Mathematics. (May 2003).

13. OFFICES HELD IN PROFESSIONAL SOCIETIES:

14. OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE:


Society for Industrial and Applied Mathematics (SIAM), Member. (1996 - Present).

American Mathematical Society (AMS), Member. (1995 - Present).

Mathematical Association of America, Member. (1999 - 2001).

15. TEACHING ACTIVITIES AT BARUCH:
A. Courses Taught

9814, A Quantitative Introduction to Pricing Financial Instruments, Graduate.

9814, A Quantitative Introduction to Pricing Financial Instruments, new format for existing course.

2610, Calculus I, Undergraduate.
4150, Combinatorics, Undergraduate.

9881, Current Topics in Mathematical Finance, new format for existing course.

9881, Current Topics in Mathematical Finance, Graduate.

2010, Elementary Calculus I, Undergraduate.

4140, Graph Theory, Undergraduate.

4500, Introduction to Financial Mathematics, new format for existing course.

4500, Introduction to Financial Mathematics, Undergraduate.


9821, Numerical Linear Algebra, Graduate.

9821, Numerical Linear Algebra, new format for existing course.

9852, Numerical Methods for Partial Differential Equations on Finance, Graduate.

9852, Numerical Methods for Partial Differential Equations on Finance, new format for existing course.

2001, Pre-Calculus, Undergraduate.

B. New courses/programs developed

Wang, Tai-Ho

1. EDUCATION:

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<tr>
<td>Ph D</td>
<td>National Chiao Tung University</td>
<td>Mathematics</td>
<td>2000</td>
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<td>MS</td>
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<td>BS</td>
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2. FULL-TIME ACADEMIC EXPERIENCE:

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<td>Chung Cheng University</td>
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<tr>
<td>National Center for Theoretical Sciences, Taiwan</td>
<td>Visiting Professor</td>
<td>December 2010 - January 2011</td>
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<td>University of Vienna</td>
<td>Visiting Professor</td>
<td>January 2009 - February 2009</td>
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<td>University of Vienna</td>
<td>Visiting Professor</td>
<td>August 2008 - September 2008</td>
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<td>New York University</td>
<td>Visiting Scholar</td>
<td>August 2006 - July 2007</td>
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<td>University of Roma</td>
<td>Visiting Scholar</td>
<td>2006</td>
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<td>New York University</td>
<td>Visiting Member</td>
<td>September 2001 - July 2002</td>
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<td>Academia Sinica</td>
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6. PUBLICATIONS IN FIELD OF EXPERTISE:

A. Books:

B. Papers in Professional Journals:

(1) Articles:


(2) Proceedings:

C. Chapters in Books:


D. Government Reports or Monographs:

E. Book Reviews:

7. **OTHER PUBLICATIONS:**

8. PRESENTED PAPERS, LECTURES, AND EXHIBITIONS AND PERFORMANCES:

Wang, T.-h., The 7th World Congress of Bachelier Finance Society, Sydney, Australia, "Implied volatility from local volatility: A path integral approach", International, Yes, Accepted. (June 2012).


Wang, T.-h., Risk Seminar, Columbia University and Graduate Center CUNY, New York, "Variational most-likely-path approximation in local volatility models", Local, No, Invited. (February 9, 2011).

Wang, T.-h., Probability Seminar, National Chiao Tung University, Hsinchu, Taiwan, "Variational most-likely-path approximation in local volatility models", Local, No, Invited. (December 30, 2010).

Wang, T.-h., Math Colloquium, National Central University, Chungli, Taiwan, "Small time asymptotics for implied volatilities", Local, No, Invited. (December 29, 2010).

Wang, T.-h., Analysis Seminar, National Center for Theoretical Sciences, Tainan, Taiwan, "Variational most-likely-path approximation in local volatility models", Local, No, Invited. (December 23, 2010).

Wang, T.-h., Math Colloquium, National Cheng Kung University, Tainan, Taiwan, "Small time asymptotics for implied volatilities", Local, No, Invited. (December 22, 2010).

Wang, T.-h., Probability Seminar, Academia Sinica, Taipei, Taiwan, "Variational most-likely-path approximation in local volatility models", Local, No, Invited. (December 20, 2010).

Wang, T.-h., Quantitative Method in Finance Conference, University of Technology, Sydney, Sydney, Australia, "Variational most-likely-path approximation to Asian option value under local volatility models", International, Yes, Accepted. (December 16, 2010).


Wang, T.-h., The 6th World Congress of Bachelier Finance Society, Toronto, Canada, "Asymptotics of implied volatility in local volatility models", International, Yes, Accepted. (June 2010).


Wang, T.-h., Seminar, Bloomberg, LP, New York, "Symmetry classifications of SABR-like models:“. (September 1, 2006).

Wang, T.-h., The 5th Cross Strait Probability and Statistics Conference, National Health Research Institute, Miao-Li, "Classification of Stochastic volatility model". (July 2006).

Wang, T.-h., Workshop on Probability with Applications, National Taiwan University, Taipei, "Symmetry classifications of SABR-like models". (June 5, 2006).

Wang, T.-h., National Taichung University, "Lower and Upper bounds of pricing basket option". (May 24, 2006).

Wang, T.-h., Nan Hua University, "Optimization approaches applied to mathematical finance". (May 3, 2006).

Wang, T.-h., Tamkang University, "Closed form solutions for quadratic for and inverse quadratic term models: speech". (April 11, 2006).


Wang, T.-h., Symmetries of Stochastic processes, University of Roma 1. (February 8, 2006).

Wang, T.-h., University of Roma 1, "Using Lie's symmetry method to generate solutions of parabolic PDE's". (January 25, 2006).

Wang, T.-h., TMS-AMS joint conference, Tung Hai University, "Probability session". (December 14, 2005).


Wang, T.-h., National Sen Yet Sun University, "Optimal static-arbitrage bounds for the prices of basket options:". (March 3, 2005).


Wang, T.-h., Annual Mathematics Conference, National Taiwan University, "Optimal bounds for the prices of basket options and their replicating strategies". (December 5, 2004).


Wang, T.-h., Providence University, "Optimal investment and consumption with transaction cost". (July 25, 2003).


Wang, T.-h., National Chung Cheng University, "Duality method to bounds on basket option price". (December 4, 2002).

Wang, T.-h., Seminar, National Center of Theoretical Sciences, Hsinchu, "Graphs with prescribed mean curvature in the sphere". (December 21, 1999).

Wang, T.-h., Seminar, National Center of Theoretical Sciences, Hsinchu, "The harmonic map heat flow". (November 24, 1997).

9. WORK IN PROGRESS:
   A. Papers submitted to journals for consideration.
   B. Other completed papers.
   C. Research in progress.


   Wang, T.-h. (2012). The heat kernel expansion from probability perspective.

10. PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS:

   Young Researcher Award, National Chung Cheng University, Scholarship/Research, University. (August 2006).

11. GRANTS-IN-AID:

   Wang, T.-h., "Asymptotics of Implied volatility in local and stochastic volatility models", PSC-CUNY 41 Research Award, PSC-CUNY Award #63872-00 41, $2,660.00. (start: July 2010, end: June 2011).

   Wang, T.-h., Grant, "Integrable local and stochastic volatility models: PSC-CUNY 40 Research Award", PSC-CUNY Award #60125-39 40, $2,660.00. (start: July 2009, end: June 2010).


12. **INSTITUTIONAL SERVICE:**
   A. Service to the Department

   Final Exam Committee, Committee Member.
   
   MFE admission committee, Committee Member. (January 2012 - April 2012). Applications evaluation, Conducting first round phone interviews
   

   Interview Questions Seminar, Attendee, Meeting. (September 2009 - December 2010). Holding seminars for MFE students on their job interviews.

   MFE admission committee, Committee Member. (January 2010 - April 2010). Applications evaluation.

   MFE admission committee, Committee Member. (January 2009 - April 2009). Application evaluation

   B. Service to the School

   C. Service to the College

   D. Service to the Graduate Center

   E. Service to the University

13. **OFFICES HELD IN PROFESSIONAL SOCIETIES:**


14. **OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE:**


Mathematical Finance, Reviewer, Journal Article.

Quantitative Finance, Reviewer, Journal Article.


15. TEACHING ACTIVITIES AT BARUCH:
   A. Courses Taught

   MTH 9814, A Quantitative Introduction to Pricing Financial Instruments, Graduate.

   MTH 9871, Advanced Computational Methods in Finance.

   MTH 3030, Analytic Geometry and Calculus II.

   MTH 2205, Applied Calculus.

   MTH 2207, Applied Calculus and Matrix Algebra.

   MTH 2610, Calculus I.

   MTH 9903, Capstone Project and Presentation.

   MTH 3020, Intermediate Calculus.

   MTH 4100, Linear Algebra.

   MTH 9842, Linear and Quadratic Optimization Techniques.

   MTH 2003, Precalculus & Elements of Calculus.

   MTH 9831, Probability and Stochastic Processes for Finance I.

   MTH 9862, Probability and Stochastic Processes for Finance II.

   FIN 9797, Options Markets, (Spring 2012).
1. EDUCATION:

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<td>Baruch College</td>
<td>Associate Professor</td>
<td>Mathematics</td>
<td>January 1985 - Present</td>
</tr>
<tr>
<td>Baruch College</td>
<td>Assistant Professor</td>
<td>Mathematics</td>
<td>September 1980 - December 1984</td>
</tr>
<tr>
<td>Temple University</td>
<td>Lawton Lecturer</td>
<td>Mathematics</td>
<td>September 1977 - August 1980</td>
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3. PART-TIME ACADEMIC EXPERIENCE:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Rank</th>
<th>Field</th>
<th>Dates</th>
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<tbody>
<tr>
<td>Univ. of California</td>
<td>Teaching Associate</td>
<td>Mathematics</td>
<td>1976</td>
</tr>
<tr>
<td>Univ. of California</td>
<td>Teaching Assistant</td>
<td>Mathematics</td>
<td>1975</td>
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4. NON ACADEMIC EXPERIENCE:

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<tr>
<th>Place of Employment</th>
<th>Title</th>
<th>Dates</th>
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<tr>
<td>U.S. Army Reserves</td>
<td>Lieutenant/Captain</td>
<td>November 1972 - June 1976</td>
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5. EMPLOYMENT RECORD AT BARUCH:

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<tr>
<th>Rank</th>
<th>Dates</th>
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<tbody>
<tr>
<td>Associate Professor</td>
<td>January 1985 - Present</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>September 1980 - December 1984</td>
</tr>
</tbody>
</table>

6. PUBLICATIONS IN FIELD OF EXPERTISE:

A. Books:

B. Papers in Professional Journals:

(1) Articles:


7. **OTHER PUBLICATIONS:**

8. **PRESENTED PAPERS, LECTURES, AND EXHIBITIONS AND PERFORMANCES:**


   Wong, S., Seminar in Dynamical Systems, Concordia University, Montreal, "Symbolic Dynamics for Newton's Method". (March 2, 1989).

   Wong, S., Summer Meeting of AMS (invited paper), SUNY at Albany, New York, "Law if the Iterated Logarithm for Semiflows". (August 8, 1983).

   Wong, S., International Conference on the Global Theory of Dynamical Systems, Northwestern University, Evanston, IL, "Invariant measures of Holder derivatives". (June 18, 1980).

9. **WORK IN PROGRESS:**
   A. Papers submitted to journals for consideration.
B. Other completed papers.

C. Research in progress.

Wong, Sherman, "The computational complexity and the geometric structure of Bairstow's method", On-Going.

10. PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS:

Fellowship Leave. (September 1986).

Visiting Research Fellow, University of California, Berkeley. (September 1986).

Visiting Research Fellow, University of California, Berkeley. (July 1982).

11. GRANTS-IN-AID:

Wong, S., Grant, "Department of Army Instrumentation Grant". (end: 2002).

Wong, S., Grant, "PSC-CUNY Research Grant". (end: 1991).

Wong, S., Grant, "PSC-CUNY Research Grant". (end: 1983).

Wong, S., Grant, "NSF Research Grant". (end: 1978).

12. INSTITUTIONAL SERVICE:

A. Service to the Department

Basic Curriculum Committee. (2002 - Present).

Executive Committee. (2002 - Present).

Major Advisor. (2002 - Present).


Website Committee. (2002 - Present).


Faculty Recruiter. (1985 - 1986).

B. Service to the School

C. Service to the College


D. Service to the Graduate Center


E. Service to the University

13. **OFFICES HELD IN PROFESSIONAL SOCIETIES:**

American Mathematical Society, Member.

CUNY Academy for the Humanities and Sciences.

Mathematical Association of America, Member.

New York Academy of Sciences, Member.

Society of Industrial and Applied Mathematics, Member.

14. **OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE:**


Maple V International Conference on Research and Teaching, Stockton, CA. (July 6, 1994 - July 11, 1994).

Presentation on "Experimental Calculus Computer Laboratory Course" before CUNY Discussion Group at Laguardia Community College. (February 21, 1992).

Doctoral Committee Member for Ph.D Thesis for Mr. You-shi Lou, graduate student of Dr. Abraham Boyarsky, Department of Mathematics and Statistics, Concordia University, Montreal, Quebec. (1991).


AMS Summer Research Conference, "Ergodic Theory and its Applications" University of New Hampshire, Durham, NH. (June 14, 1982 - June 19, 1982).


15. TEACHING ACTIVITIES AT BARUCH:
   A. Courses Taught

   2006, Applied Calculus.

   2206, Applied Calculus.

   2207, Applied Calculus with Algebra.

   2008, Calculus Computer Laboratory, new format for existing course.

   2008, Calculus Computer Laboratory.

   2010, Calculus I.

   2610, Calculus I.

   3010, Calculus II.

   3020, Calculus III.

   4010, Difference and Differential Equations.

   2300, Discrete Mathematics.


   4320, Fundamental Algorithms.

   3002, Introduction to Chaotic Dynamical Systems.

   4125, Introduction to Stochastic Processes.

   4125, Introduction to Stochastic Processes, new format for existing course.

   4100, Linear Algebra.

   4130, Mathematical Statistics.

   2001, Pre-Calculus.
0030, Preparatory Mathematics III.

4120, Probability Theory.

3300, Programming Algorithms I.

9813, Scientific Computing with C++, new format for existing course.

9813, Scientific Computing with C++.
1. **EDUCATION:**

<table>
<thead>
<tr>
<th>Degree</th>
<th>Institution</th>
<th>Field</th>
<th>Dates</th>
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<tbody>
<tr>
<td>Ph D</td>
<td>Columbia University</td>
<td>Statistics</td>
<td>2003</td>
</tr>
<tr>
<td>MPhil</td>
<td>Columbia University</td>
<td>Statistics</td>
<td>2002</td>
</tr>
<tr>
<td>MA</td>
<td>University of Bucharest</td>
<td>Applied Statistics and Optimization</td>
<td>1997</td>
</tr>
<tr>
<td>BA</td>
<td>University of Bucharest</td>
<td>Applied Mathematics</td>
<td>1996</td>
</tr>
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2. **FULL-TIME ACADEMIC EXPERIENCE:**

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<tr>
<th>Institution</th>
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<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baruch College</td>
<td>Associate Professor</td>
<td>Mathematics</td>
<td>January 1, 2009 - Present</td>
</tr>
<tr>
<td>Baruch College</td>
<td>Assistant Professor</td>
<td>Mathematics</td>
<td>September 2003 - December 2008</td>
</tr>
<tr>
<td>Columbia University</td>
<td>Instructor</td>
<td>Probability and statistics</td>
<td>2000 - 2003</td>
</tr>
<tr>
<td>Columbia University</td>
<td>Teaching Assistant</td>
<td>Statistics and Probability Theory</td>
<td>1997 - 1999</td>
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3. **PART-TIME ACADEMIC EXPERIENCE:**

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<th>Institution</th>
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<th>Field</th>
<th>Dates</th>
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</table>

4. **NON ACADEMIC EXPERIENCE:**

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<tr>
<th>Place of Employment</th>
<th>Title</th>
<th>Dates</th>
</tr>
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<tbody>
<tr>
<td>Columbia University</td>
<td>Research Assistant</td>
<td>2000</td>
</tr>
<tr>
<td>Interamerican Insurance, Bucharest, Romania</td>
<td>Actuary</td>
<td>1996 - 1997</td>
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</table>

5. **EMPLOYMENT RECORD AT BARUCH:**

<table>
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<tr>
<th>Rank</th>
<th>Dates</th>
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<tbody>
<tr>
<td>Associate Professor</td>
<td>January 1, 2009 - Present</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>September 2003 - December 2008</td>
</tr>
</tbody>
</table>

6. **PUBLICATIONS IN FIELD OF EXPERTISE:**

A. Books:

B. Papers in Professional Journals:

(1) Articles:


(2) Proceedings:

C. Chapters in Books:

D. Government Reports or Monographs:

E. Book Reviews:

7. OTHER PUBLICATIONS:

8. PRESENTED PAPERS, LECTURES, AND EXHIBITIONS AND PERFORMANCES:


Zamfirescu, I.-m., Conference on Stochastic Control and Numerics, University of Wisconsin, Milwaukee, "Martingale Approach to Stochastic Control with Discretionary Stopping". (September 2005).


Zamfirescu, I.-m., Seminar on Stochastic Processes (informal presentation), Cornell University, "Strong Approximation for Mixing Sequences with Infinite Variance". (March 2005).

Zamfirescu, I.-m., Probability Seminar, Carleton University, "Game Approach to the Optimal Stopping Problem". (October 2004).

Zamfirescu, I.-m., Probability Seminar, Graduate Center at CUNY, "Game Approach to the Optimal Stopping Problem". (March 2004).

9. WORK IN PROGRESS:
   A. Papers submitted to journals for consideration.
   B. Other completed papers.

   Karatzas, I., Zamfirescu, I.-m. Martingale Approach to Stochastic Games.

   C. Research in progress.

   Zamfirescu, Ingrid-mona, Balan, R., "Strong Invariance Principle for Self-Normalized Sums".

10. PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS:

    Faculty Fellowship in the Department of Statistics, Columbia University. (2002).

    Faculty Fellowship in the Department of Statistics, Columbia University. (2001).

    Howard Levine Teaching Award, Columbia University. (2001).

    Faculty Fellowship in the Department of Statistics, Columbia University. (2000).

    Faculty Fellowship in the Department of Statistics, Columbia University. (1999).

    Faculty Fellowship in the Department of Statistics, Columbia University. (1998).

    Faculty Fellowship in the Department of Statistics, Columbia University. (1997).

    Scholarship, University of Bucharest, Romania. (1996).

    Scholarship, University of Bucharest, Romania. (1995).

    Scholarship, University of Bucharest, Romania. (1994).

    Scholarship, University of Bucharest, Romania. (1993).

    Scholarship, University of Bucharest, Romania. (1992).

11. **GRANTS-IN-AID:**


12. **INSTITUTIONAL SERVICE:**
   A. Service to the Department
      Graduate Committee. (2004 - Present).
      Final Exam Committee. (2003 - Present).
      Website Committee. (2003 - Present).
      Executive Committee, Member. (2009).
      Department Secretary. (2006).
   B. Service to the School
   C. Service to the College
   D. Service to the Graduate Center
   E. Service to the University

13. **OFFICES HELD IN PROFESSIONAL SOCIETIES:**

14. **OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE:**

15. **TEACHING ACTIVITIES AT BARUCH:**
   A. Courses Taught
      MTH 3040, Actuarial Science Theory and Problem Seminar.
      MTH 2206, Applied Calculus.
      MTH 2207, Applied Calculus/Matrices.
      MTH 2610, Calculus I.
      MTH 9803, Capstone Projects.
MTH 3010, Elementary Calculus II.
MTH 4500, Introduction to Mathematical Finance.
MTH 4120, Introduction to Probability.
MTH 4130, Mathematics of Statistics.
MTH 2001, Precalculus.
MTH 2003, Precalculus and Elements of Calculus.
MTH 9831, Real Analysis and Probability.
MTN 9862, Stochastic Process in Finance.