

Catherine Bénéteau

Education

1993-1999	University at Albany (SUNY)	Ph.D.	Mathematics
1991-1993	McGill University	M.Sc.	Mathematics
1987-1991	McGill University	B.Sc. (honors)	Mathematics

Employment History

- ✚ **Assistant Professor** at the University of South Florida, August 2006 – present.
- ✚ **Associate Professor** at Seton Hall University, 2005 – 2006.
- ✚ **Assistant Professor** at Seton Hall University, 1999-2005.
- ✚ **Instructor** at the Center for Talented Youth in Lancaster, PA (Summer 1999).
- ✚ **Instructor/Graduate Assistant** at the University at Albany (September 1993-May 1999).
- ✚ **Instructor/Graduate Assistant** at McGill University (September 1991-May 1993).

Publications

Mathematics

- A Natural Extension of a Nonsingular Endomorphism of a Measure Space*, Rocky Mountain Journal of Mathematics, **26**, (1996), 1261-1273.
- Jensen Type Inequalities and Radial Null Sets*, C. Bénéteau and B. Korenblum, Analysis, **21**, (2001), 99-105.
- Some Coefficient Estimates for H^p Functions*, C. Bénéteau and B. Korenblum, Complex Analysis and Dynamical Systems, *Contemporary Mathematics*, **364**, (2004), 5-14.
- Remarks on the Bohr phenomenon*, C. Bénéteau, A. Dahlner, and D. Khavinson, Computational Methods and Function Theory **4** (2004), No. 1, 1-19.
- Extremal problems for non-vanishing functions in Bergman spaces*, D. Aharonov, C. Bénéteau, D. Khavinson, and H. S. Shapiro, *Operator Theory: Advances and Applications*, **158**, (2005), 59-86.
- The Isoperimetric Inequality via Approximation Theory and Free Boundary Problems*, C. Bénéteau and D. Khavinson, Computational Methods and Function Theory **6** (2006), No. 2, 253-274.
- To appear:** *A survey of certain extremal problems for non-vanishing analytic functions*, C. Bénéteau and D. Khavinson, Complex and Harmonic Analysis 2006 Proceedings, DES Tech Publications.

Education

- Statistics, Technology, and the Social Sciences: a Successful Interdisciplinary Project*, with June Rohrbach, Focus Magazine, **24**, no.1, (2004), 9-10.

2. SPSS 13.0 Update, 2/E, supplement to Social Statistics, with R. Kendrick, Allyn&Bacon, July 2006.

Awards, grants and funding received

External Grants/Awards

1. **NSF Grant** DUE-0717158, \$90 860, September 1, 2007 to August 31, 2010, “Collaborative Research: A Phase II Expansion of the Development of a Multidisciplinary Course on Wavelets and Applications,” with PIs Patrick Van Fleet (University of St. Thomas), Caroline Haddad (SUNY Geneseo), Dave Ruch (Metro State College of Denver).
2. **Project A.C.E.** , \$16, 000, for work designing and delivering professional development modules to improve mathematics content knowledge of elementary, middle school, and high school teachers. This grant was a partnership between the Hillsborough County School District, the Department of Mathematics and Statistics, and the College of Education.
2. **Association for Women in Mathematics and National Science Foundation Travel Grant**, \$1200, for travel expenses to participate in the “Tag der Funktionentheorie 2003 – Journées d’analyse complexe” conference in Metz, France (June 2003) and the First Joint International Meeting of the American Mathematical Society and the Real Sociedad Española in Seville, Spain (June 2003).
3. Was part of a team that received a **NSF Grant** (\$1500) **from the MAA** as part of the New Jersey section to sponsor an undergraduate research conference on March 27, 2004 at Rutgers University.
4. **Association for Women in Mathematics Mentoring Travel Grant**, \$2910, for travel expenses related to research at the University of Arkansas for the month of April 2004.
5. Received **funding** on several occasions (around \$3500 total) **from conference organizers** for conference participation: South Eastern Analysis Meeting (March 2002, 2003, 2005), Conference on Quadrature Domains at the University of Santa Barbara (March 2003), CBMS conference on Clark measures at the University of Chapel Hill (May 2002), Recent Advances in operator related function theory at Trinity College, Dublin (August 2004).

Internal Grants

1. **New Researcher Grant**, \$9288, *Non linear extremal problems*, June 2007 – May 2008.
2. **CAS Travel Grant**, \$750, for travel to conference *Extremal problems in complex and real analysis*, Moscow, Russia, May 22-26, 2007.
3. **University Research Council Grant**, \$4000 for summer research project “*Extremal Problems in Bergman Spaces*,” May-August 2004, through Seton Hall University.
4. **Curriculum Development Grant**, “*Integrating Social Science in Introductory Statistics*,” \$55 000.00, through Seton Hall University. I was one of four principal investigators on a three year project to develop a statistics class for the social science departments in coordination with

the political science department from September 2001 to August 2003.

5. University Research Council Grant, “*Peaks and valleys: a mathematical study*,” \$4000.00, through Seton Hall University for summer research (summer 2002).

A Selection of Invited Talks at universities in the US and at international conferences

- ❖ *Extremal problems in H^p for $0 < p < 1$* , “Extremal problems in complex and real analysis,” Russia, May 2007.
- ❖ *Non linear extremal problems in Bergman spaces*, invited speaker, “New Trends in Complex and Harmonic Analysis,” an international conference on Analysis and Mathematical Physics, Norway, May 2007.
- ❖ *Extremal problems for non-vanishing functions in Bergman spaces*, South Eastern Analysis Meeting, Richmond, Virginia, March 2007.
- ❖ Invited speaker, AMS section meeting, University of New Hampshire, April 2006, “Extremal problems for non-vanishing analytic functions.”
- ❖ “*Extremal problems and duality for non-vanishing functions*,” Complex Analysis and Dynamical Systems, Israel, January 2006.
- ❖ Invited addresses at the MAA section meeting of the Washington D.C., Virginia, Maryland section, November 5, 2005 on “The Isoperimetric Problem.”
- ❖ Colloquium talk at Virginia Tech in Blacksburg, VA, October 2005, “The Isoperimetric Inequality and Applications to Hydrodynamics.”
- ❖ Served on a career advice panel for graduate students and postdocs at Washington University in St Louis, May 2005.
- ❖ “*Extremal problems for non-vanishing functions in Bergman space*,” South Eastern Analysis Meeting, April 2005.
- ❖ “*Extremal problems in Hardy and Bergman spaces*,” University of Arkansas, March 2005.
- ❖ “*Anything still to be discovered about power series? The Bohr phenomenon!*” Bucknell University, September 2004.
- ❖ “*The Bohr Phenomenon and Extremal Problems in Hardy Spaces*,” Complex Function Theory Days, Bar-Ilan University, Israel, June 2004.
- ❖ “*Extremal Problems in Hardy and Bergman Spaces*,” First Joint International Meeting of the AMS-RSME, Seville, Spain, June 2003.
- ❖ “*A Bohr phenomenon in Hardy spaces*,” Tag der Funktionentheorie, Metz, France, June 2003.
- ❖ “*Coefficient estimates for Hardy and Bergman functions*,” Spaces of analytic functions conference in Marseille, France, October 2002.

- ❖ “*Maximal Fourier Coefficients of Hp Functions*,” AMS Eastern Section Meeting, Special Session on Harmonic Analysis, Williamstown, Massachusetts, November 2001.
- ❖ “*A Jensen-type Theorem*,” Session on Complex Variables, Joint Meetings of the AMS-MAA, January 2000.
- ❖ “*Old Tricks for New Dogs: the Creation of a computer lab manual*,” Joint Meetings of the AMS-MAA, January 1999.

Faculty and Graduate Student Consultant

I was a statistical software consultant (for the software SPSS) for statistics projects of faculty at Seton Hall University and graduate students in the College of Education for 2 years (2001-2003).

Teaching experience

Courses taught at the University of South Florida:

- ✚ Engineering calculus I and II, Differential Equations, Real and Complex Analysis (graduate).

Courses taught at Seton Hall and at the University of Albany:

- ✚ Mathematics courses for mathematics and computer science majors at Seton Hall University, including all courses in our calculus sequence, Foundations of Mathematics (where students learn how to construct and evaluate mathematical proofs), Real Analysis 1 and 2, Differential Equations, Complex Analysis, Junior seminar class (where students learn about how to conduct a research project in mathematics).
- ✚ Mathematics for Education students (at the University at Albany).
- ✚ Service courses for other departments, such as Intermediate Algebra, Elementary Statistics, Statistical Models for the Social Sciences, courses in the calculus sequence for science students.

Instructional Technology use and design experience

- ✚ At the University at Albany, designed course Maple laboratory manual to incorporate the use of Maple in the classroom.
- ✚ Created a statistics course for social science majors, integrating a daily use of SPSS software in the classroom. This course is now the primary statistics course taken by non science majors.
- ✚ Have used Maple extensively in the teaching of intermediate algebra, calculus, and differential equations courses.
- ✚ Have used graphing calculators at the Center for Talented Youth in the teaching of statistics.

Undergraduate Research Experience

- ✚ I ran the student paper and poster session at undergraduate student conferences at Rutgers University in March 2004 and at Middlesex County College in April 2005.
- ✚ Undergraduate research projects directed at the University of South Florida
 1. *Linear optimization for polynomials*, Gabriel Zayas-Caban, 2007-2008.
 2. *Wavelets and applications to image processing*, Tyson DiLorenzo, 2007-2008.

- ✚ Undergraduate research projects directed at Seton Hall:
 1. “*Coefficient Estimates in H^p spaces for $0 < p < 1$,*” Karen Vaughan, Clare Boothe Luce summer scholar, summer 2001. Karen gave a talk at the Clare Boothe Luce presentation at Seton Hall.
 2. “*The Isoperimetric Inequality,*” Jim Jessup, senior project, Spring 2003. Jim presented a poster at the sectional meeting of the MAA and at the Petersheim Academic Exposition at Seton Hall and gave a talk on his project at the national summer meeting of the MAA.
 3. “*Topics in Knot Theory,*” Kerri Pisano, Clare Boothe Luce summer scholar, summer 2004. Kerri will be giving a poster presentation of her work at Seton Hall University on December 3, 2004.

K-12 Teaching Experience at the Center for Talented Youth

The Center for Talented Youth is a program run by Johns Hopkins University for gifted children. I taught two courses for middle school and early high school students. One was a self-paced algebra class, and the other was a probability and statistics class. Duties included design and development of classroom materials, supervision of a teaching assistant, along with all usual lecture and grading activities.

High school outreach experience

- ✚ I was part of a team that ran the “Andrushkiw” competition at Seton Hall University since 1999. This is an annual mathematics competition for high school students in the New Jersey area. My duties included giving training courses for high school teachers while their students competed, welcoming students, and helping to proctor and grade the exams.
- ✚ I was part of a team that organized a “Sonia Kovalevsky” high school day at the University at Albany. These days are funded through the Association for Women in Mathematics and are designed to encourage high school girls to study mathematics.

Course coordination experience

I was the course coordinator for our lower level intermediate algebra class at Seton Hall University. Duties included training adjuncts and being a resource for them in case of problems, writing and coordination of laboratory materials, review and final exams.

Project NExT Fellowship

I was awarded a Project NExT (New Experiences in Teaching) fellowship in 1999. Project NExT is a group of young mathematics faculty members across the US who are involved in activities connected to innovative teaching and professional development. I am also a member of the New Jersey Project NExT group and a consultant for that group.

Selective Departmental, College and University experience

University of South Florida:

- Undergraduate committee, Department of Mathematics and Statistics, 2007-2008.
- Faculty Development Committee, College of Arts and Science, 2007/08 – 2008/09.

Seton Hall University:

- Recruited mathematics majors by running “open house” days at Seton Hall.
- Assisted with placement testing of freshmen and transfer students.
- Organized the department colloquium and on several occasions invited speakers.
- Organized and invited speakers for “job fair” and graduate school activities for majors.
- Advised undecided Arts and Science students (about 50 students a semester).
- Was on a committee that interviewed and evaluated job candidates for the mathematics department.
- Was on several Arts and Science College committees (by-laws, executive committee, Faculty secretary).
- Member of the University Senate.

Professional Memberships

I am a member of the American Mathematical Society, the Association for Women in Mathematics, the Mathematical Association of America, the National Council of Teachers of Mathematics, and PKAL (Project Kaleidoscope). I have been a Project NExT (New Experiences in Teaching) fellow since 1999.