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Mathematics Newsletter

Mathematics Department

2013

Math Department Newsletter, 2012-2013 (Year in Review)

Mathematics Department

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MATH DEPARTMENT

2012-2013 Newsletter

Sacred Heart University

Welcome to the first annual newsletter hosted by the Mathematics Department! We hope you enjoy reading about the events of the past year in the math department as the department had another fantastic year, hailing many accomplishments by faculty, students, and alumni.

Student Accomplishments

Two teams of students participated in the CO-MAP (The Consortium for Mathematics and its Applications) Mathematical Contest in Modeling, a worldwide mathematical contest. Both teams were advised by Dr. Loth. Students Michael Fenech '13, Kathleen Perzanowski '13, and Steven Sibona '13 received the final designation "Successful Participant" for their solution to *Problem A: The Ultimate Brownie Pan* and presented their work at the annual SHU Academic Festival on May 1st, 2013. Students Matthew Cole '15, Cody Knox '14, and Malvina Reinhold '15 received the final designation "Successful Participant" for their solution to *Problem B: Water, Water, Everywhere*.

Thanks to Dr. Loth, the department sponsored the 2012-2013 Monthly Problem Solving Competition. Each month, students are challenged with an interesting mathematics problem and are invited to submit solutions. Problems reflect a broad spectrum of mathematical areas including calculus, probability, and number theory. As the overall top problem solver of the competition, Kathleen Perzanowski was invited to the U. S. National Collegiate Mathematics Championship to be held during the MathFest in Hartford, CT, August 1-3, 2013.

Our students have been very active in off-campus mathematical activities. Three students presented their research at the Northeastern Sectional Meeting of the Mathematical Association of America

(NES/MAA) which was held at Bridgewater State University in November. Michael Fenech '13 presented his paper "The Laplace Transform", Suzanne May '13 presented "Time Series Analysis and Forecasting with an Application", and Anna Kadlof '13 presented "Black-Scholes-Merton Model and Option Pricing". (See photos on page 4.) All presentations were well attended and very well received. While at the conference, all three students participated in the annual NES/MAA Problem Solving Competition. In addition to the NES/MAA competition, Michael Fenech and Kathleen Perzanowski also participated in the Fifth Annual Regional Undergraduate Mathematics Competition held at Central Connecticut State University.

Rounding out their interests is also evident as students were active in endeavors outside the department. Mary Frostick '13 was inducted into Pi Lambda Theta, a national honors society for educators. Matthew Cole '15 along with Edward Garrity (art major), co-founded the Green SHUs which is the environmental club on campus. They hosted two colloquium on plastics, participated in several clean-up efforts including the Housatonic River cleanup, sold re-usable water bottles, and held some fun fundraiser events (like tie dying, seed plantings, etc.). At the Campus Life Leadership Awards, the Green SHUs won "Club of the Year" as they successfully competed against 50+ other official CCO clubs, and were cited for their involvement, outreach, and positive impact on SHU.

Math Club and Special Events

Because of the success of last year's Alumni Night, we decided to do it again! Over 30 students came to listen to SHU math major alums speak about how they are applying their math degree to their careers. Pictured below, we were happy to welcome back (Top Row) Marc Wilson '09, Michael Delviscovo '08, Stephen Zito '08, Richard Naumann '03, Robert Lycoudes '12, and (Bottom row) Sarah Novotny Vigliotta '08, Lauren Di Stefano '09, Brianna Neff '11, and Carl Weigand '93.



At the university level, Dr. Moliterno invited Dr. Ben Fine from Fairfield University to present the annual mathematics talk to the general university community. Dr. Fine's talk, "The Impact of Mathematics on Civilization as We Know It" was well received as a standing-room only crowd of over 350 students packed the University Commons! Dr. Fine spoke about the many scientific discoveries that would never have taken place if it weren't for mathematics and famous mathematicians such as Kepler, Galileo, Descartes, Fermat, Leibniz, and Newton whose contributions made this all possible.



The Math Club, under the direction of advisor Dr. Andrew Lazowski and president Suzanne May '13, have organized outreach and fundraising events. To celebrate Pi Day (March 14th), the Math Club sold various types of pies to faculty, staff, and students throughout the university. At the end of the year, the Math Club sold beer mugs with the saying "STOP, Don't Drink and Derive!" A sense of humor goes a long way!



Pi Mu Epsilon Inductions and Awards Night

The department was pleased to induct several students into the Pi Mu Epsilon honor society this year: Colleen Burke '13, Michael Fenech '13, Kathleen Perzanowski '13, Jaclyn Shearin '13, Steven Sibona '13, Erin Puschak '14, Nicole Trommelen '15, and Connor Bohl '15. Dr. Elizabeth Russell from Western New England University gave the keynote address "Perturbing Quadratics: An Undergraduate Triumph". Congratulations to all of our inductees, and a special thank you to Dr. Lazowski for organizing such a memorable event!



On the night of the Pi Mu Epsilon Induction, we also gave several awards to our math majors. Anna Kadlof '13 was the recipient of the Gold Medal of Excellence in Mathematics, and Suzanne May '13 was the recipient of the Silver Medal of Excellence in Mathematics. (Both pictured left.) The gold and silver medals are given to the top two graduating senior math majors. Ashley Bua '14 was the recipient of the Rose Marie Kinik Award for outstanding junior math major (she is pictured with Professor Kinik, bottom left). Connor Bohl '15 and Nicole Trommelen '15 received the awards for outstanding sophomore math majors (pictured bottom-center). Finally, Stephanie Dytko '16 and Timothy Weiss '16 won the awards for outstanding freshman math majors (pictured bottom-right.)

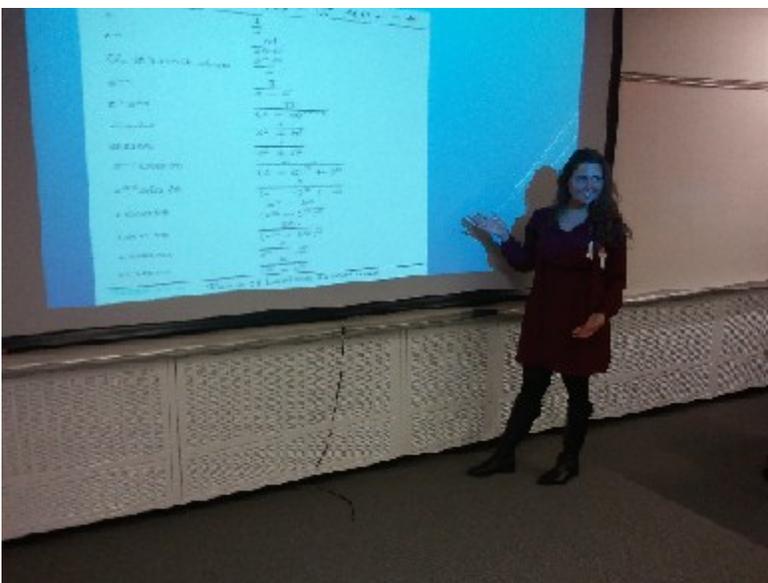
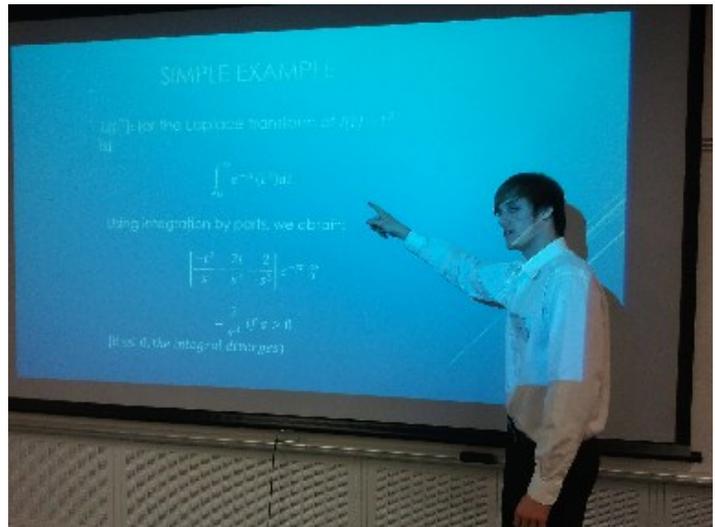
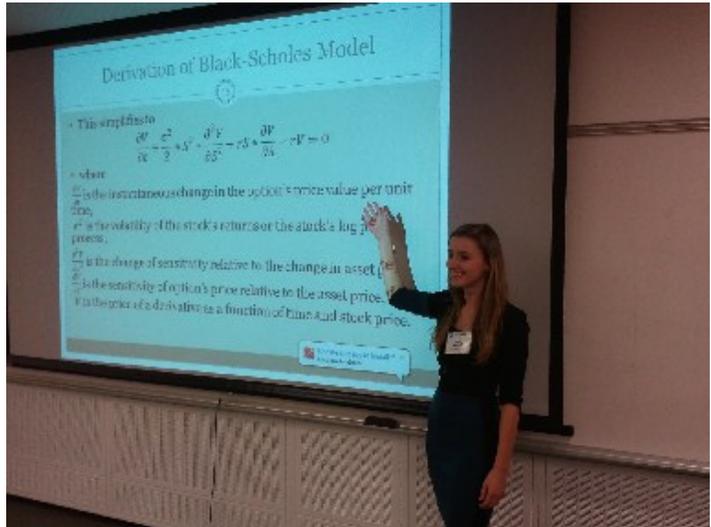


Graduating Seniors

As we say goodbye to our graduates, we are excited for what the future holds for them. Kate Boyd '13, Colleen Burke '13, Michael Fenech '13, Mary Frostick '13, Kenneth Giordano '13 and Kathleen Perzanowski '13 will be sticking around SHU to complete the five year master's program in education. Mary will be interning at Fairfield Warde High School. Kathleen, after completing her master's, is considering joining AmeriCorps before beginning her career as a middle or high school math teacher. Ken plans to leave Connecticut after finishing his master's degree and find a teaching position in another state.

Anna Kadlof '13 will be taking the actuarial exams over the next few months. Her goal is to find a position as an actuary. Suzanne May '13 will be attending Central Connecticut State University to pursue a degree in actuarial science. Steve Sibona '13 will also be attending graduate school (not sure yet) to pursue a master's degree in applied statistics.

Also graduating are Steve Fabrizio '13, Mark Lee '13, and Melissa Tobin '13. We wish all of our graduates the best of luck in their future endeavors and hope they stay in touch.



Class of 2013!!

Alumni Page

Once you enter the math department at SHU, you never really leave! We enjoy keeping in touch with our alumni and hearing about the wonderful things they are doing. Here are some highlights:

Christopher Carbone '11 is graduating with a Masters in Arts of Teaching from Sacred Heart University after completing an internship at Cloonan Middle School in Stamford, CT. He is currently working as a long-term substitute teacher at Bunnell High School in Stratford, CT.

Lauren DiStefano '09 is also teaching. This is her third year of teaching math at Darien High School in Darien, CT. She is also the director of the Spring musicals at the high school, which has been a fantastic learning experience. She is currently pursuing a second master's program at Quinnipiac University in teacher leadership. She also recently finished the Cooperative Educational Service (C.E.S.) administrator aspirant program.

Kyle Evans '11 just completed his Master's degree in math at the University of Connecticut and will be continuing there to pursue his Ph.D.

Leah Fuhlbrugge '08 has been working in the field of finance. Right after graduation, she obtained a full time position as an equity research analyst for Renaissance Capital, LLC in Greenwich CT where she conducted in-depth, bottom up financial analysis on initial public offerings (IPOs). A couple years later, Leah took a client service position with Russell Investments in New York City working with large defined benefit and defined contribution pension plans. She says that seeking a job in the financial industry with a major in Mathematics was a huge help in finding a job and was considered a major asset by potential employers.

Jesse Gatten '10 graduated with a Masters of Computer Science and is now employed at Blue Sky ETO in Stratford as a software developer, learning new things every day. He is also working independently on his first computer game, hoping to finish that soon so he can start building a portfolio in order to achieve his goal of becoming a game designer.

Nick Kapoor '11 is currently an elected member of the Monroe Town Council, Chairman of the Monroe Democratic Party and is currently finishing up his MBA in Finance at SHU.

Kathryn Kartalis Lahrs '05 has been working as a software engineer during the day and also independent contracting on the side. She also has a software product that she has been selling to various New York state schools to help them with the new APPR requirements from the NY State Department of Education (www.LahrsApps.com). On the personal side, she will be running in the Buffalo marathon this Spring and hopes to qualify for the 2014 Boston Marathon. She has twin three-year old girls who are the light of her life.

Nicole Lay Alaimo '08 received her master's in education from SHU in 2009 and has been teaching in Norwalk ever since. She taught at Ponus Ridge Middle School for three years and now teaches at Briggs High school which is the alternative high school in Norwalk. She teaches Algebra I, Geometry, and Algebra II. She is the only math teacher at this school, but enjoys the challenge!

Stephanie Shewciw '05 got her Masters in Math Education from NYU right after graduation. She taught high school for a few years, then decided to try her hand teaching at the college level. For the past 3 years she has been teaching at Bergen Community College in NJ in their Developmental Mathematics department and is having a blast!

Marc Wilson '09 recently came back to SHU to participate in our Math Teacher's Circle which is a teacher development program for middle school math teachers in Fairfield county. He is currently teaching sixth grade in Trumbull.

Stephen Zito '08 is also pursuing his Ph.D. at UConn. He recently received the 2012-2013 Louis J. DeLuca Memorial Award for the most Outstanding Teaching Assistant in the math department. Congratulations to Steve!

Faculty Spotlight

The faculty have had a very productive year. Dr. Jason Moliterno gave two talks at national conferences this year. This past summer he gave the talk "Visualization Projects for a Differential Equations Course" at MathFest 2012 in Madison, WI. In January, he gave the talk "Visualizing Distributions in a Probability and Statistics Class" at the Joint Mathematics Meetings in San Diego, CA. He has also been producing new research and will be presenting that research in the talk "The Algebraic Connectivity of Planar Graphs" at the International Linear Algebra Society conference in June in Warwick, RI.

Dr. Peter Loth accomplished a lot this year. First, congratulations to Dr. Loth for 15 years of service to the university. He was honored for this momentous occasion at the University Founder's Day on April 10th. Dr. Loth also continued his research in abelian group theory. The research paper *Abelian groups with partial decomposition bases in $L^{\delta}_{\infty\omega}$, Part I* (with C. Jacoby, K. Leistner and L. Strümgmann) was published in the refereed volume *Groups and Model Theory: A Conference in Honor of Rüdiger Göbel's 70th Birthday*, Contemporary Mathematics 576, American Mathematical Society, Providence, RI (2012), 163-175. Also, the research paper *Abelian groups with partial decomposition bases in $L^{\delta}_{\infty\omega}$, Part II* (with C. Jacoby) appeared in the same volume of the Contemporary Mathematics series on pages 177-185. At the Joint Mathematics Meetings in San Diego, California, January 9-12, 2013, Dr. Loth presented the research paper *Partial decomposition bases and Warfield groups*.

Dr. Julianna Stockton had a busy year as well. First, she presented at Mathfest 2012 in Madison, WI on "Mapping the Common Core State Standards to Advanced Mathematical Knowledge for Teaching". She was also invited to present at Wellesley College Math Colloquia on "Hungarian Mathematics Education: A Tradition of Excellence Transitions to the 21st Century". In addition to her presentations, she published the article "Instructor Use of Tablet PCs in a College Pre-Calculus

Course: Implementation & Assessment" with Peter Gregory, which appeared in *Journal of Computers in Mathematics and Science Teaching*, Volume 31, Issue 4. This article is available through the SHU Digital Commons at http://works.bepress.com/julianna_stockton/3/. Dr. Stockton is also the recipient of several grants. Externally, she received a grant from the Academy of Inquiry Based Learning (AIBL) to teach MA301: Mathematical Structures and Proofs using Inquiry Based Learning. Internally, she received a University Research/Creativity Grant (URCG) summer stipend for continuation of project "Teachers' Advanced Mathematics Knowledge: Understanding What Transforms the Elementary, Middle, and Secondary Teaching of Mathematics". She also received the Academics for Creative Teaching (ACT) grant through the university. With this grant she is looking forward to taking math majors and other interested students on two field trips that will run in the Fall 2013 semester, one to the Museum of Math and one to a special exhibit on the history of women in STEM fields, both in New York City. Finally, Dr. Stockton continued her involvement in the new first year curricula at SHU, teaching the first year seminar "From Zero to Infinity & Beyond!" in Fall 2012 semester and The Art of Thinking in Spring 2013 semester.

Dr. Andrew Lazowski had a very exciting year. Just before the academic year started he had his third child and first daughter, Greta, born in July. During the year he participated in the new foundational core curriculum teaching a First Year Seminar titled "Mathematics of Sports" and teaching The Art of Thinking. In October he gave a talk "A Hyperbolic Baseball Field and Unusual Dimensions" at Saint Anselm College's Mathematics & Physics Seminar. Then in April he addressed an audience at Lehman College with the talk "Unusual Space, Unusual Dimensions". He was also able to publish a paper "A Case Study in Elementary Statistics: The Florida Panther Population" in the journal PRIMUS. This was co-authored with Geoffrey Stopper of the

Biology department here at SHU. In addition to this, the following related work has been accepted for publication in the National Center for Case Study Teaching in Science and should appear this upcoming year:

"Mathematics in Conservation: The Case of the Endangered Florida Panther" with Geoffrey Stopper. He also has some ongoing projects in pure mathematics and curriculum infusion of alcohol awareness on campus.

Dr. Bernadette Boyle had a great first year with us! She attended the Joint Mathematics Meetings in January and presented her research with the talk, "The Unimodality of Pure O-sequences of Type Two in Four Variables", given in the AMS contributed talks session in Commutative Algebra. She also gave a talk, "The Cayley-Bacharach Theorem through the Ages" as a Mathematics colloquium at Providence College. In addition to giving scholarly talks, Dr. Boyle has enjoyed working with local grade schools from Fairfield and Bridgeport playing mathematical games with them and showing them "mathemagic" to increase their interest in the subject.

Hema Gopalakrishnan and Rosemary Danaher organized the Fairfield County Math Teachers' Circle's

(FCMTC) first summer math immersion workshop at SHU in July 2013. The workshop was enthusiastically attended by 17 middle school math teachers and was led by university professors. The summer workshop was followed by six academic year meetings focused on problem solving with 15 or more middle school teachers attending each of these sessions. These workshops were supported by mini grants from the AIM, MSRI and the Northeastern Section of the MAA. Teachers have expressed interest in participating in the FCMTC meetings during the next academic year. This will be made possible by a continuing math teachers' circle grant that was awarded recently by the AIM.



Coming Attractions!

Before looking ahead to next year, unfortunately we must say goodbye to Susan Scalisi, our department assistant since 1998. Susan will be retiring in June. Susan has been an enormous help to the department for the past fifteen years and we will sorely miss her. We wish her well in retirement as she spends more time with her family, especially her two-year old granddaughter Maddie. Hopefully, Susan will come back and visit often.

On a happier note, we are proud to report that there will be a new faculty member next year. Michael Ward, who has been an adjunct with us for the past fifteen years in the evenings while teaching at Notre Dame High School during the day, will join us as a full-time instructor this coming Fall. Students regard Professor Ward as a well-respected teacher and we look

forward to him coming on board!

We look forward to another exciting year next year. We have redesigned the course MA 101, Modern College Mathematics, to make it more suitable (and more interesting) to students majoring in the humanities. We will also be planning off campus events such as a field trip to Museum of Math and a trip to a special exhibit on the history of women in STEM fields, both in New York City. We will take students to the Northeast Sectional Meeting of the Mathematical Association of America to be held at Wheaton College in November where they will have an opportunity to present their research. On campus, we plan to hold our annual Alumni Night, a Pi Day celebration on March 14th (3/14), problem solving competitions, and will continue to build on our student activity in the Math Club. Stay tuned!