Bellenot Retirement

Steven Bellenot, faculty member of the department for 47 years, retired in 2021. He was an iconic figure in the department, and will be missed by all. Bellenot was born in 1948 and grew up in the San Fernando Valley, part of the Los Angeles metro area. He went to Harvey Mudd College for his undergraduate studies and to Claremont Graduate School (now Claremont Graduate University) for his graduate studies. In 1974, Bellenot arrived at Florida State University where he remained until his retirement. He spent a year at Potsdam, NY at what is now Clarkson University, and a year at the University of Texas at Austin. Bellenot Married Ellen Elizabeth Van de Carr Rumsey in 1975. They had met in College in 1966. Ellen was a craftsman, now retired. Bellenot worked for NASA for seven summers at JPL, not with space travel, but with parallel programming of object oriented simulations. The work a JPL offered Bellenot a second job of being a consultant. After a few of these, Georgia Pacific became the main client. In 2005, Bellenot became the Associate Chair in the mathematics department, and for fifteen years ran the undergraduate program in mathematics. What follows is an interview of Bellenot by Shelby Fintak taken in August of 2019 for a faculty profile piece that seems to have not appeared yet. While it is a bit old, it is a fun read. Enjoy!

Seduced by The Dark Side

Every eight year old during the age of Sputnik knew one thing for sure: rockets are awesome. So naturally Steven Bellenot, former eight year old, decided to become an engineer, scientist, facilitator of space travels. This dream was reified by his father, uncles and grandfathers who were engineers before him. Bellenot enrolled at Harvey Mudd College and all was according to plan. That is, until he was seduced by the dark side.

“I was off to be some sort of engineer or scientist or what have you, [but] when I got to college I got seduced by the dark side. I discovered that you could be an engineer, solve differential equations and spend all of your time cranking out solutions. Or, if you [were] a pure mathematician, you could spend all your time thinking and then writing a proof. This was very seductive.” The enormous power of knowing things. Arriving at truth through pure thought. This was more than enough to convince Bellenot to pursue
A Message from the Chair

Washington Mio

This is a very special time of the year, a time to celebrate the achievements of the FSU Mathematics Department with so much accomplished thanks to the contributions and dedication of our faculty, students, postdocs, staff, alumni and supporters. Even under the pressures and challenges posed by the pandemic we have shown great resilience, maintaining a very high level of productivity. My warmest thank-you to all for what you do!

We have myriad reasons to celebrate and be proud. The research of our faculty, postdocs and students is in very good health with a strong output covering a broad range of topics in pure and applied mathematics, extending to interdisciplinary research and cutting-edge applications. Many of our research projects receive external funding, including very prestigious and applied mathematics, extending to interdisciplinary research and cutting-edge applications.

Students is in very good health with a strong output covering a broad range of topics in pure and applied mathematics, extending to interdisciplinary research and cutting-edge applications.

Over the past two years a few colleagues have left the department to retirement or to pursue other career opportunities. I thank them all for their service, some for a career-long commitment to our department. This year we have recruited four new faculty and I look forward to having them join the department in the fall of 2022, bringing fresh new research perspectives and reinforcements to our department. This year we have recruited four new faculty and I look forward to having them join the department in the fall of 2022, bringing fresh new research perspectives and reinforcements to our department.

We are also pleased to celebrate the achievements of the FSU Mathematics Department, organizing who teaches what and denying requests to skip classes like trigonometry. He jokingly describes his “No is a Complete Sentence” mug close at hand for students less than satisfied with their calculus final. And keeps his ‘No is a Complete Sentence’ mug close at hand for students less than satisfied with their calculus final.

I have no doubt that the state of the department is strong and the outlook is bright. With your support we will continue to build on our strengths, innovating and raising the profile of the department. I invite you to continue to read this Newsletter to put names and faces to some of our accomplishments. I close reiterating my deepest gratitude on the contributions of all members of the department, our alumni for being such great ambassadors and supporters of the department, and our donors for supporting our academic activities and the success of our students.

Warm regards,

Washington Mio

Bellentino Retirement

Continued from page 1

Bellentino found few avenues for collaboration in his primary research area, infinite dimensional topological spaces, so a slight migration was in order. Before long, Bellentino taught the equivalent of an undergraduate major in computer science courses, which at the time was technically part of the math department. He took every opportunity to study new areas of the discipline in preparation. There is an expansive list on his website of all the classes he’s taught over the years, from Calculus in the spring of 1973 to a Bioculculus computer lab in 2019.

For the last 15 years Dr. Bellentino has served as Associate Chair of the Math Department, organizing who teaches what and denying requests to skip classes like trigonometry. He jokingly describes his “No is a Complete Sentence” mug close at hand for students less than satisfied with their calculus final.

Error Detected

In the midst of his tenure at FSU, Bellentino consulted for various projects and companies, like Georgia Pacific. There, Bellentino reduced the run time of their lumber processing program by a factor of 10,000. Logs could now be scanned and cut into the optimum number of 2x4” planks at speeds of 100 feet per minute. Bellentino also spent several summers working for the Jet Propulsion Lab at NASA, doing discrete event simulation on a project called Time Warp on a Hypercube.

He recalls a story from his time there: “One of our projects 5 or 6 years down the road got a new architecture, and when we put it on that new architecture we discovered that we had an error that had existed for years and years. When this error occurred, the whole program blew up. You could never nail it down and it happened so infrequently that it was never discovered, but this new architecture exposed it right away.”

The mathematical aspect of writing programs with data structures always brings Bellentino much joy and debugging code has become one of his specialties. Bellentino admits he’s learned a lot from looking at old problems, some over 50 years old, and fondly remembers one of his favorite programing problems inherently erred by design. The problem in- structs you to correct Euler’s method in a do-loop. You correct, then you correct the correction, and so on four different times.

“I happened to look at the code and checked it sort of strangely. And it turns out that it’s just wrong, because your first improvement made the best improve- ment it could with these things, so you’re making it worse. I really enjoy digging down and figuring out why things failed.”

The joys of Obsolete Technologies

Shows at The Lab theatre. Slide rules. Long drives along the California coast. Old math books wrapped up as Christmas presents. Construction sites in action. A unique and intriguing list, all of which define some of Dr. Bellentino’s favorite things. He says he is an easy person to please and can find something to enjoy whenever he happens to be.

One testament to his appreciation of the simpler things in life is a talk he’s given a few times entitled Joys and Virtues of Obsolete Technologies. His presentation champions the slide rule, logarithm tables, roman numerals and the abacus. It reminds us of the skills of interpretation and proper decimal placement lost to the convenience of plug and chug calculators. “New technologies means you lose some of the scaffolding that you had to do in order to get [these solutions].”

But even Dr. Bellentino can admit that not all calculators are bad. Sometimes they’re quite funny. “I had a student who showed up for the second test with a brand new Ti-89 still wrapped in the plastic. He spent half the test taking the wrapping off the thing and had no idea how to use it.”
The inaugural Tam Family Professor is Dr. Richard Bertram. Dr. Bertram is a Distinguished Research Professor of FSU and the Brennan Professor of Mathematics (2015-2018). Currently, Dr. Bertram is the Director of BioMath.

Dr. Bertram obtained his Bachelor of Science degree in Applied Mathematics (Summa Cum Laude) at FSU in 1985. He subsequently obtained his Ph. D. degree in Applied Mathematics in 1993 again at FSU. After graduation, he joined the National Institute of Health in Bethesda, MD as a postdoctoral fellow for three years. He then became an assistant professor of Mathematics at Penn State, Erie, PA. On 2001 Dr. Bertram returned to FSU as an assistant professor of Mathematics. He became an associate professor in 2004 and a professor in 2009. He is a member of the FSU Program in Neuroscience and the FSU Molecular Biophysics Program.

Dr. Bertram is well known internationally for his research work. He has been especially active in professional conferences and workshops. He served as organizer, session chair and work-shop lecturer. Presently, he is the Associate Editor of Applied Mathematical Biology and a member of the editorial board of the journal "Bulletin of Mathematical Biology." In 2017 he won the Society for Industrial and Applied Mathematics (SIAM) Outstanding Paper Prize. Also, he was elected to the position of Chair of SIAM Activity Group for Life Sciences for a two years term (2015-2016). He has authored and co-authored more than 140 articles in peer reviewed journals and conference proceedings. His works are very well received and cited. According to Google Scholar, he has more than 6,000 citations and a h-index of 34. Dr. Bertram has received extensive external funding from the National Institute of Health and the National Science Foundation. They total to multi-millions of dollars.

Dr. Bertram's research activity in Bio-mathematics uses mathematical models to explain biological phenomena and to discover the mechanisms involved. He is a leading expert in this approach. Below are two examples of his work in mathematical modeling of biological phenomena.

1. **Understanding pulsatile insulin secretion from pancreatic islets.**

Human body's insulin-secreting cells are found within cell clusters called islets of Langerhans that are distributed throughout the pancreas. There are two ways these cells can be destroyed by the body's immune system. This leads to two types of diabetes. Over a period of a number of years, Dr. Bertram, in collaboration with experimentalists in FSU and other medical colleges, developed a mathematical model involving the interactions of electrical activity, calcium, dynamics, and glucose metabolism that leads to pulsatile insulin secretion. In normal humans, insulin is released in 5-minute pulses, while in type II diabetes this rhythm is gone. Studies have demonstrated that pulsatile insulin is more effective than non-pulsatile insulin in lowering the blood glucose level. Dr. Bertram and his collaborators' model is the only model that describes the mechanism for the rhythmicity. Their model is widely known throughout the community of scientists who study pancreatic islets. It has been used to design numerous experiments conducted by collaborating laboratories. The model also provides the foundation of current understanding of insulin pulsatility.

2. **Understanding the processes of learning birdsong on a neural basis.**

Songbirds learn to sing by listening to a tutor, much like babies learn to speak by listening to their parents. In his collaboration with the two experimental labs in the Neuroscience program at FSU (Drs. Frank Johnson and Rick Hyson), Dr. Bertram concentrated his study on finding the song learning processes and production mechanism of one type of bird, the zebra finch. This work would provide a path to establish rules for the production of sequential behavior in animals, and insights into human speech production. Dr. Bertram and his students have since developed mathematical models for the different types of neurons involved in song production in the zebra finch. These models have been extensively used to design laboratory experiments. These are the first biophysical models for these neurons. Dr. Bertram's group uses these models to study how the neurons change as the song is learned. Related to this study is their effort to establish neural network models that explain how song might be encoded in the bird's brain. This is the most comprehensive model in the field. It is capable of explaining considerably more behaviors than other models.

We wish the best of luck to Annette Blackwelder, Penny LeNoir, James Wooland, Steve Bellenot, Ishkhan Grigorian, and Dena McDaniel, who have retired, and to Kathleen Petersen and Nick Moore, who are continuing their careers at other Universities. You will all be missed!

We welcome our recent hires Bhargav Karamched, Nihan Acar, Kris Bowers, Angie Harris, Elyse Budge, and Courtney Simmons. Congratulations go out to Ling Zhu, Martin Bauer, and Sam Ballas for their promotions to Associate Professor, to Kyounghee Kim for her promotion to full professor, to Leah Hollingsworth and Diane Maltby for their promotions to Teaching Faculty II, and to Brian Ewald for his promotion to Teaching Faculty III.

The Tam Family Professorship in Mathematics was established through an endowment by Dr. Christopher Tam. Dr. Tam is a Lawton Distinguished Professor of Mathematics at FSU. The endowment was made to honor Dr. Tam’s parents and family members, and consists of two parts. The first part is to provide an annual stipend to the holder of the Professorship. The second part provides financial support for an annual Tam Family Colloquium. The colloquium speakers include the Tam Family Professor and invited outside distinguished scientists and mathematicians. In addition, funds are available to finance an annual colloquium dinner to honor the colloquium speaker and the Tam Family Professor to which all research faculty members of the Department are invited.

changing faces

We welcome the following faculty as they change roles:

- Nihan Aca
- Court Simmons
- Penny LeNoir
- Steve Bellenot
- James Wooland
- Bhargav Karamched
- Martin Bauer
- Martin Bauer
- Annette Blackwelder
- Angie Harris
- Elyse Budge
- Dena McDaniel
- Kyounghee Kim
- Sam Ballas
- Brian Ewald

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FSU Department of Mathematics among top U.S. Producers of Doctoral Degrees

By Amy Walden (taken from news.fsu.edu with permission)

Over the last 20 years, the number of doctorates awarded in mathematics by U.S. institutions has nearly doubled, according to recently published data from the Survey of Earned Doctorates (SED). Florida State University is among the top contributors to that exceptional growth.

In the January edition of the Notices of the American Mathematical Society, Florida State's Department of Mathematics was ranked 11th in the country by the SED for the number of doctorates awarded, with a total of 342 doctoral degrees conferred from 2000 to 2019.

"It’s great to see how the FSU mathematics graduate program has developed and grown over the years, as reflected for example in the substantial increase in the number of doctoral degrees awarded per year," said Washington Mio, mathematics department chair.

In the category of applied mathematics, FSU broke into the top 10, ranking No. 5 among public universities and No. 7 overall in number of doctorates awarded. The SED is a joint effort of the National Science Foundation, National Institute of Health, Department of Education, and the National Endowment for the Humanities, and is widely considered the most comprehensive report of earned doctorates available in the United States.

"Our standing in these rankings is quite a remarkable achievement, especially considering that our faculty size is about half the size of some of the top 10 mathematics departments," said Professor of Mathematics and Associate Chair for Graduate Studies Giray Ökten. "This shows the productivity of our faculty and hard work of our students. A lot of credit also goes to faculty, some of whom are retired now, who developed our innovative graduate programs about 20 years ago."

In the early 2000s, Florida State saw a major increase in the demand for researchers and professionals with mathematical skills in the field of financial engineering and the rapidly growing domains of quantitative and computational biology and medicine. In response, the department developed and implemented new doctoral tracks in financial mathematics and biomathematics, greatly reviving and expanding the doctoral program.

"We are now in the early days of a similar investment in mathematical data science and I am very optimistic about its future," Mio said.

FSU's Interdisciplinary Data Science Master's Degree Program, which welcomed its inaugural class of graduate students in Fall 2021, features program tracks in mathematics as well as computational science, computer science and statistics.

The rankings reflect progress made toward the academic and research excellence goal outlined in FSU's 2017-2022 Strategic Plan, tracking with concerted efforts on many fronts at once: attracting and retaining top faculty talent; securing more postdocs; creating for students to develop and grow as mathematicians and citizens of the professional community. This includes student mentoring; tailoring opportunities for our graduates, with a focus on individual needs and consistent, constructive interactions between students and their major professors.

"As a department, we have had an important role in shaping many successful careers in a broad landscape of domains, often opening the doors to life changing opportunities for our graduates," Mio said. "I see this as a key measure of success and the ultimate reward for our collective effort in graduate education."

The success of the math department has also made Florida State a destination for scholars from around the globe, with the university routinely hosting national and international lectures and conferences. This March, the Department of Mathematics hosted the Tenth International Conference on Sensitivity Analysis of Model Output (SAMO), the first to be held in the U.S. since 2004.

In the period from August 2018 to July 2021, ten Postdoctoral scholars were admitted to the program. Six of them have finished their training at FSU.

"Our standing in these rankings is quite a remarkable achievement, especially considering that our faculty size is about half the size of some of the top 10 mathematics departments," said Professor of Mathematics and Associate Chair for Graduate Studies Giray Ökten. "This shows the productivity of our faculty and hard work of our students. A lot of credit also goes to faculty, some of whom are retired now, who developed our innovative graduate programs about 20 years ago."

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The rankings reflect progress made toward the academic and research excellence goal outlined in FSU's 2017-2022 Strategic Plan, tracking with concerted efforts on many fronts at once: attracting and retaining top faculty talent; becoming a destination for the brightest graduate students; encouraging high-impact interdisciplinary inquiry; and developing innovative teaching strategies.

"Mathematics faculty and students have been incredibly productive and efficient," said Sam Huckaba, dean of the College of Arts and Sciences. "The deliberate expansion by mathematics of innovative research initiatives, starting two decades ago, has provided a fantastic complement to our traditional tracks. And I am most proud that these achievements have happened with a continuing emphasis on high quality."

Mio adds that one of department’s greatest strengths is the supportive, inclusive environment that has been created for students to develop and grow as mathematicians and citizens of the professional community. This includes student mentoring; tailoring opportunities for our graduates, with a focus on individual needs and consistent, constructive interactions between students and their major professors.

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The success of the postdoctoral scholars, here are some key statistics on scientific output and awards:

**Publications**

During their time at FSU, the Postdoctoral scholars have published a total of 18 peer reviewed articles. In addition, they have submitted 12 preprints for publication.

**Scientific talks**

In the same period, they have given over 70 talks and presentations and have attended numerous conferences and workshops.

**Awards and Grants**

They have been awarded 19 (internal and external) grants and awards, including two AMS-Simons Postdoctoral Travel Grant and one NSF-Eager grant.

NEW POSTDOC PROGRAM A SUCCESS

The Dean’s Postdoctoral Scholar program at the department of Mathematics at FSU was started in 2018. It has helped to reduce the size of calculus classes, and brings fresh research blood through the department each year. Some of the postdoctoral scholars have also done service to the department, such as serving as undergraduate advisors and co-organizing seminars and conferences.

In the period from August 2018 to July 2021, ten Postdoctoral scholars were admitted in the program. Six of them have finished their training at FSU. Three of these six have moved onwards to start a tenure track position, while two others have taken a further Postdoctoral fellowship. This outstanding job placement serves as strong evidence of the success of this postdoctoral initiative.

To summarize the productivity of the postdoctoral scholars, here are some key statistics on scientific output and awards:

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**Awards and Grants**

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The Department of Mathematics was the host for the 10th International Conference on Sensitivity Analysis of Model Output (SAMO), March 14-16, 2022, at the Florida State Conference Center. Giray Ökten, who is the current president of the SAMO society, was the chair of the local organizing committee. The other members of the organizing committee were Aseel Farhat, Nick Cogan, Youssuf Hussaini, and Billy Oates.

The SAMO conference, held every three years, is dedicated to advances in research on sensitivity analysis methods and their interdisciplinary applications. Sensitivity analysis aims to understand and quantify how uncertainty in the output of a model can be apportioned to different sources of uncertainty in the model input. These methods are powerful tools in physics, operations research, chemistry, biology, engineering, environmental science, nuclear and industrial safety, economics and finance.

The conference was held as a hybrid conference. There were 44 talks and 13 poster presentations. The plenary speakers were:

• Agnès Lagnoux, assistant professor of mathematics at the Institut de Mathématiques de Toulouse and Université Toulouse – Jean Jaurès, in Toulouse, France;
• Juliane Mai, research assistant professor of civil and environmental engineering at the University of Waterloo, in Ottawa, Canada;
• Art Owen, professor of statistics at Stanford University, California;
• Samuel Lo Piano, a postdoctoral researcher from the School of the Built Environment at the University of Reading, U.K.;
• Clémentine Priour, professor of mathematics at Université Grenoble Alpes, Saint-Martin-d’Hères, France; and
• Sébastien Da Veiga, statistics research engineer from Safran Tech in Paris.

The conference proceedings will be published by Socio-Environmental Systems Modelling (SESMO), a journal of the International Environmental Modelling & Software Society. SAMO 2022 was made possible by contributions from Oak Ridge Associated Universities, FSU Office of Research, College of Arts and Sciences, and the Department of Mathematics.
Department News

Alumni News

Haibin Hang (PhD 2020, Mio) works as a data scientist for Amazon.
Zhiqu Li (PhD 2020, Zhu) is at Wells Fargo, Charlotte, NC.
Xiaoyu Wang (PhD 2021, Zhu) is a postdoctoral researcher at Washington University in St. Louis.
Yiran Chen (PhD 2022, Okten) works at Citi, Tampa.
Arum Polala (PhD 2020, Okten) is at Wells Fargo, NYC.
Jamie Fox (PhD 2020, Okten) works at Wells Fargo, Charlotte.
Hubeyb Gurdogan (PhD 2021, Kercheval) is a postdoctoral researcher at the University of California at Berkeley.
Hetian Yan, (PhD 2020, Kercheval) works at Microsoft, Inc, Bellevue, WA.
Opal Graham (PhD 2020, Bowers) is at the University of North Georgia.

Faculty News

Martin Bauer, together with his collaborators, was awarded the NSF grant “Data-Driven Elastic Shape Analysis with Topological Inconsistencies and Partial Matching Constraints”. In addition, he has been awarded collaboration grants from the Erwin Schrödinger Institute (2022, with P. Harms and P. Michor) and from the University of Bergen (2020, with K. Modin, M. Maurelli, and A. Scimemi). Recently, together with B. Khesin, K. Modin, S. Preston and C. Wozan, he has been awarded a grant from the Banff International Research Station for Mathematical Innovation and Discovery to organize a conference on Geometry and Fluid Dynamics to be held in November 2023. Finally, his paper “Structural Connectome Atlas Construction in the Space of Riemannian Metrics” (with K. Campbell, H. Dai, Z. Su, T. Fletcher, S. Joshi) has been awarded the best paper award (Francois Erbsmann Prize) of the conference Information Processing in Medical Imaging 2021 (IPMI 2021).

Lingqiong Zhu was awarded an NSF grant titled “Collaborative Research: Langevin MCMC Methods for Machine Learning” in 2021.

Graduate Student News


Giray Okten gave three lectures at CIRM (Centre International de Rencontres Mathematiques) in Marseille Luminy, France, titled “Number sequences for simulation and derivative pricing”, as part of the Research School on Quasi-Monte Carlo Methods and Applications in November 2020. He also gave a talk at FSU titled “Global Sensitivity Analysis of Power System Reliability”, which was part of the “Workshop on Energy Security and Hurricane Disaster Resilience for Florida’s Power System”, in January 2020.


Eric Klassen has been offered (and accepted) a visiting professorship at the Institut Henri Poincare (part of Sorbonne University) in Paris during Fall 2022, while on sabbatical from FSU.

Faculty Awards

EXAM P
Alexis Ardèn
Rose Behnke
Alexandria Bosch
Rosenmaya Burch
Darby Carraway
Robert Chiriac
Jerroel Daniel
Michael Deveikis
Jacob Driggers
Christine Marie Gepilano
Jared Giotta
Jordan Hayes
Austin Hendrickson
Megan Heuken
Lauren Hodne
Reagan Huet
Samir Iskandaran
Callie Jameson
Carly Kish
Casey Koon
Lindsey Leadbetter
Alisa Mallard
Danielle Marino
Caramen McDaniel
Olivia Pearson
Aaron Putriment
Jordan Rundle
Jonah Smith
Raine Stryczny
Catherine Williams
Xiao Wen Tan
Kim Voudris
Grace Zani

EXAM FM
Alexis Ardèn
Domenico Barile
Alexandria Bosch
Rosenmaya Burch
Rebecca Caro
Robert Chiriac
Alexander Cote
Matt Diaz
Andrew Fowler
Luis Garcia
Ethan Gemma
Christine Gepilano
Lauren Hodne
Dane Horton
Hannah Howard
Carson Hundley
Dana Hyfton
Luis Jimenez
Ariel Jones
Sasank Kandipati
James Kaufman
Carly Kish
Casey Koon
Emilee Krick
Nathan Lacombe
Lindsey Leadbetter
Amber Matherne
Kelly McCarthy
Melissa Miranda
Caramen McDaniel
Richard Parrish
Shaylah Paxton
Kayla Pfeffer
Benny Pirrone
Vanessa Polidoro
Ryan Purcell
Dalton Raeckers
Matthew Reyna
Jordan Rundle
Carson Sence
Conor Sherman
Jonah Smith
Georgia Traynor
Claudia Matilda Vevera
Kimberly Voudris
Christina Waltz
Samantha Ward
Xiao Wen Tan
Patricia Wilson
Grace Zani

EXAM IFM
Luke Dilworth
Jared Giotta
Olivia Pearson
Kristen Swinski
Suwon Kang

EXAM S-TAM
EXAM L-TAM

EXAM S-TAM
EXAM L-TAM

CONGRATULATIONS

to all our students who passed actuarial exams

April 1, 2019 - March 31 2021

FSU Math
Mathematics Honors Day 2021

Every year in the spring, the Department of Mathematics recognizes graduate and undergraduate students for their teaching, academic, or service achievements. The following are the award winners from the Annual Honors Day event in Spring 2021:

Dwight B. Goodner Mathematics Fellowship

Millie and Dwight Goodner established this award to recognize teaching excellence in mathematics by graduate students.

- Ream, Julia
- Shisode, Tarak
- Wei, Meng
- Chen, Yiran
- Li, Xin

Kenneth G. Boback Award

This award is presented to an outstanding senior undergraduate majoring in Mathematics.

- Hayden, Seth

Bettye Anne Case Actuarial Science Award

This award is presented to an outstanding undergraduate student majoring in Actuarial Science. This award was established by Courtney and Shari White.

- Wingfield, James

Bettina Zoeller Richmond Award

This award is presented to graduate students for outstanding service to the Department.

- Adjetye, Isaac

Clara Kibler Davis Scholarship

- (Graduate)
  - Ream, Julia
  - Provat, Shirin
  - Bose, Shreya
  - Wang, Xiaoyu
  - Bou Kaed Bey, Heba
  - Davenport, Angelica
  - Bruce, Nicole
  - Rogowski, Susan

- (Undergraduate)
  - Scorca, Skylar
  - Reynolds, Kadesha
  - Martino, Skylar
  - Besaw, Emilee
  - Greene, Mia
  - Mila, Emily
  - Falcon, Caroline
  - Baker, Blakeley

Distinguished Teaching Assistants

This award is presented to graduate students for outstanding service to the Department.

- Anderson, Austin
- Aurko, Abdullah
- Chanda, Anindya
- Chandramouli, Sathyanarayanan
- Chen, Yiran
- Davenport, Angelica
- Dent, Samuel
- Estebe, Cody
- Gurdogan, Hubeyb
- Li, Xin
- Molina Gonzalez, Braulio
- Parkman, Virginia
- Ream, Julia
- White, Edward
- Zhou, Yi

Tam Family Award for Excellence in Graduate Student Teaching

- Davenport, Angelica
- Parkman, Virginia

Tam Family Award for Excellence in Graduate Student Research

- Kimrey, Josh
- Chanda, Anindya

Bettye Anne Busbee Case Graduate Fellowship and Doctoral Mentor Recognition

- Hartman, Emmanuel (Mentors: Martin Bauer and Eric Klassen)
- Bose, Shreya (Mentor: Ibrahim Ekren)
- Anderson, Austin (Mentor: Alexandar Reznikov)

MATH PUZZLER

In this issue we present a Math Puzzler. The question comes from the FSU High School Math Contest. A prize* will be awarded for the best solution with the clearest explanation submitted by September 1, 2022. Solutions can be submitted to newsletter@math.fsu.edu. We hope you are challenged by this Puzzler!

A checker is placed on an infinite checkerboard. The square it is placed on is called its home square. You then begin to move the checker around. Each move must be in a straight line, either up, down, left, or right; and each successive move after the first must be at right angles to the previous move. Furthermore, on the first move, the checker must be moved exactly one square away from its previous square; on the second move, exactly two squares; on the third move, exactly three squares; and so on: on the k’th move, the checker must move exactly k squares away from its previous location. What is the fewest number of moves you can make to return the checker to its home square?

*FSU Mathematics faculty and their families, and those affiliated with the FSU High School Math Contest (sponsors, participants, math club members, etc.) are not eligible for the prize. The newsletter editor and staff will determine prize eligibility.
### Spring 2021

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<tr>
<th>NAME</th>
<th>AREA</th>
<th>ADVISOR</th>
<th>THESIS TITLE</th>
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<tbody>
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<td>Hubeyb Gurdogan</td>
<td>Financial Math</td>
<td>Alec Kercheval</td>
<td>Eigenvector Shrinkage for Estimating Covariance Matrices</td>
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<td>Huang Hua</td>
<td>Applied &amp; Computational Math</td>
<td>Adrian Barbu &amp; Kyle Gallivan</td>
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<tr>
<td>Benjamin Prather</td>
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<td>Jinfeng Zheng</td>
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