The Right Angle

Vol.23 Mathematics Newsletter 2021/22

January 3, 2022

Dear Alumni, Colleagues, and Friends,

This is the first new issue of the Right Angle in quite a few years, and a lot has happened in the department since then. We moved from French Hall over to the Campus Green Building (formerly Lindner Hall) and back. Our classes moved entirely online in March 2020 and are now mostly back on campus again. Research activity has been robust despite all these distractions, to the point where 2020-21 was a banner year for successful grant applications. And perhaps most importantly, students and faculty alike found creative ways to adapt to unusual circumstances. I couldn't be more proud of the Class of 2021 and the awards they received.

Also, in 2020 Professor Shuang Zhang completed a remarkable 10-year term as Department Head. I want to thank him for a decade of leadership and determined advocacy for the department, and also Professor Tim Hodges for stepping in as Interim Head until I was ready to take the proverbial corner office.

Please read on to learn more about these stories:
- Who's who in department administration in 2021.
- New faculty joining the department and a celebration of recent emeriti.
- Expansion of our Statistics degrees and services underway.
- Job-seeking advice from current faculty.
- Faculty in the news.
- Memorial tributes.
- Ways to support the department and its students through the UC Foundation.

Note: The Right Angle moved online along with so many other things this year. As befits the new presentation, the writing will be more conversational than one might find in our previous formal newsletters. Please reach out to contact us and continue the conversation.

With best wishes,

Dr. Michael Goldberg
Professor and Head
Department of Mathematical Sciences

From Campus Green to French Hall

After a year of working temporarily at Campus Green, our department moved back to French Hall West last summer. Please notice that office numbers have been changed. Visit [this page](#) to see the updated office numbers.

(Almost) back to normal in 2021 Fall

We have learned to cope during the unusual months of 2019, 2020, and 2021. We found creative ways to study and work successfully without physically being on campus. Now we have been back on campus and experiencing a traditional Fall Semester where students fully participate in classes, the residential experience, and student activities. Our department is fully staffed again as of mid-July. Although wearing facial covering indoor is still required, it is nice to see everyone again! Updated information about campus activity regarding Covid-19 is posted in [this page](#).

Meet our new administrators

As you may have heard, big changes occurred in our department over the summer.
While Dr. Ricardo Moena will continue as our Assistant Department Head, other administrator positions are now held by:
- Dr. Michael Goldberg, Department Head
- Dr. Crystal L. Clough, Undergraduate Program Director
- Dr. Robert Buckingham, Graduate Program Director
- Dr. Ryan Therkelsen, MAT Program Director

These changes came about after Dr. Shuang Zhang completed his term as our department head in 2020 Summer. Over the past ten years, Dr. Zhang worked tirelessly for our department. It was, in many ways, a very different place when Dr. Zhang took over in 2010. We thank him for his wisdom and leadership, maintaining a sense of stability as quarters turned to semesters, as we moved from building to building across campus, and as we headed into fresh uncharted territory.

We are also sincerely grateful to other department officers who are leaving their roles after years of dedicated effort that helped get us to where we are today:
- Dr. Mihaela Poplicher served as the Undergraduate Program Director for many years.
- Dr. Steve Pelikan directed the Master of Arts for Teachers of Mathematics (MAT), a program that brings Cincinnati-area teachers into our department each summer.

Division of Statistics and Data Science

The Division of Statistics and Data Science was established in August 2018 to foster and strengthen the statistics program in the College of Arts and Sciences. Currently, the division offers a BA/BS degree in Statistics-Actuary Science as part of our department's mathematics major, an MS Degree in Statistics, and a PhD Degree in Mathematical Sciences with concentration in statistics.

Under the division is the **Statistics Consulting Center** (SCC) that provides a **free statistical consulting service** to faculty and graduate students working under supervision of faculty for their research. To make an appointment, please visit this page.

The division is in the process of further strengthening its statistics program by developing a stand-alone BA/BS degree in Statistics and a PhD Degree in Statistics. We expect these to be offered in one or two years. However, our new Graduate Certificate in Statistical Science program is ready to accept new students for Spring and Fall 2022.

Newcomers

Let's welcome new faculty members who have joined our Department since the last edition of the Right Angle. Selected from a very competitive pool of candidates, they have helped strengthen our research mission and commitment to excellence in teaching and improving STEM education.

Hired in 2021:

Jenna Reis

I'm Jenna Reis, a new Assistant Professor Educator. I got my PhD in 2015 from the University of Rhode Island (URI). I studied Numerical Linear Algebra, specifically structured matrices and orthogonal polynomials. My master's is also from URI, and my bachelor's is from Emmanuel College, a small liberal arts college in Boston, MA. I grew up in Massachusetts and had lived in New England my whole life, most recently Manchester, NH, until a few months ago. I moved here with my husband, who now works at P&G, and our two cats Poppy and Phyllis. So far, I'm really loving Cincinnati!

I taught two sections of 1061 Calculus I and two sections of 1044 Applied Calculus I in 2021 Fall.

Abigail Bishop

Abigail Bishop is our new Assistant Professor Educator in the department. She received her MS and PhD in Mathematics from North Carolina State University. She enjoys reading comic books and loves baking. She has two cats, Amelia and Rory.

She taught Math 1008 Foundations of Qualitative Reasoning, Math 1060 Calculus I with Pre-Calculus Review, and Math 1061 Calculus I in 2021 Fall.

New Visiting Assistant Professors hired in 2021:
Almaz Butaev, Ryan Gibara, Po-Han Hsu, and Rocky Sison.

Hired in 2020:

Alex Combs

I'm Alex Combs, a new Assistant Professor Educator in the department. I earned my PhD in Mathematics doing Lie and Leibniz algebra research at North Carolina State University. I am originally from North Carolina but have lived and worked in Hampton, Virginia; Rochester, New York; and Lexington, Kentucky before coming to Cincinnati. I like gardening (which is difficult on my covered apartment balcony), cycling (which is kind of a struggle with all these Cincinnati hills), and going to the movies (which is hard to do in the coronavirus pandemic). Even so, I am enjoying my new city, university, and coworkers and I look forward to the next academic year!

I taught Calculus I (MATH1061) and Middle School Math 1 (MATH3021) in 2021 Fall.

Xiaoqin Guo

I'm an assistant professor in our department. I obtained a PhD in mathematics at the University of Minnesota and held a visiting position at the University of Wisconsin, Madison, before joining UC in 2020. In my spare time, I like running, playing soccer, and taking care of my twin daughters.

I taught stochastic processes (MATH6008) and Calculus I (MATH1061) in 2021 Fall.

Inne Singgih

Hello! My name is Inne Singgih. I joined UC's Department of Mathematical Sciences as Assistant Professor Educator in August 2020. I'm originally from Indonesia. I first came to the US in 2013, received my master's from University of Minnesota, Duluth, and PhD from the University of South Carolina. During the pandemic, I got myself a pet (a cat) from Cincinnati Animal Care: a super-spoiled Bombay black fur ball named Ozark.

I taught Applied Calculus I (MATH1044), Calculus I with Pre-Calculus Review (MATH1060), and Calculus I (MATH1061) in the Fall.

Faculty hired in in 2019:	Deniz Bilman, Miriam Poteet, and Jennifer Sinclair.
Faculty hired in 2018:	Xuan Cao, Kevser Erdem, Seungki Kim, Casey Monday, and Noel DeJarnette.
Faculty and staff hired in 2017:	Furuzan Ozbek and Taige Wang. Staff: Kamellia Smith and Tim Miller.
Faculty hired in 2016:	Won Chang.

All department faculty, emeriti, staff, and graduate students can be found here.

Welcome!

And welcome to the new students joining our MS and PhD programs in 2021 Fall! It is one of the largest entering cohorts of graduate students in the department's history.

The full list of our graduate students can be seen [here](#).

Getting ready for a job search? Here are some tips

Whether you're graduating or just looking to change jobs, the advice below may be able to help you. Read these tips developed by Dr. Michael Goldberg and Dr. Gareth Speight.

➲ Go to conferences and:

- Interact with people there to get noticed.
- Seize every opportunity to volunteer a talk at an event, even if it makes you feel nervous. People will get to know you, you gain experience giving talks, and it boosts your CV.
- Make sure the talks you give are good ones. This is a learnable skill that can make you stand out. Practice your talk in front of friends, your advisor, or by speaking in a department seminar. You want to make the talk enjoyable for the audience, rather than bombarding them with technicalities.

Tips on giving good talks:

- Read books or research online how to do this.
- Use less text per slide, pictures where possible, don't have too many long formulas, simplify to focus on main ideas, etc.
- If you are nervous, learn the start of the talk well and this will give you confidence for later. Pretend you are happy to give a talk, even if you are nervous. Feeling nervous and making small mistakes is completely normal so don't be too critical of yourself.
- Use teaching as an opportunity to practice your presentation skills. Have someone experienced in teaching sit in on your classes and give constructive criticism on what you can do to improve.
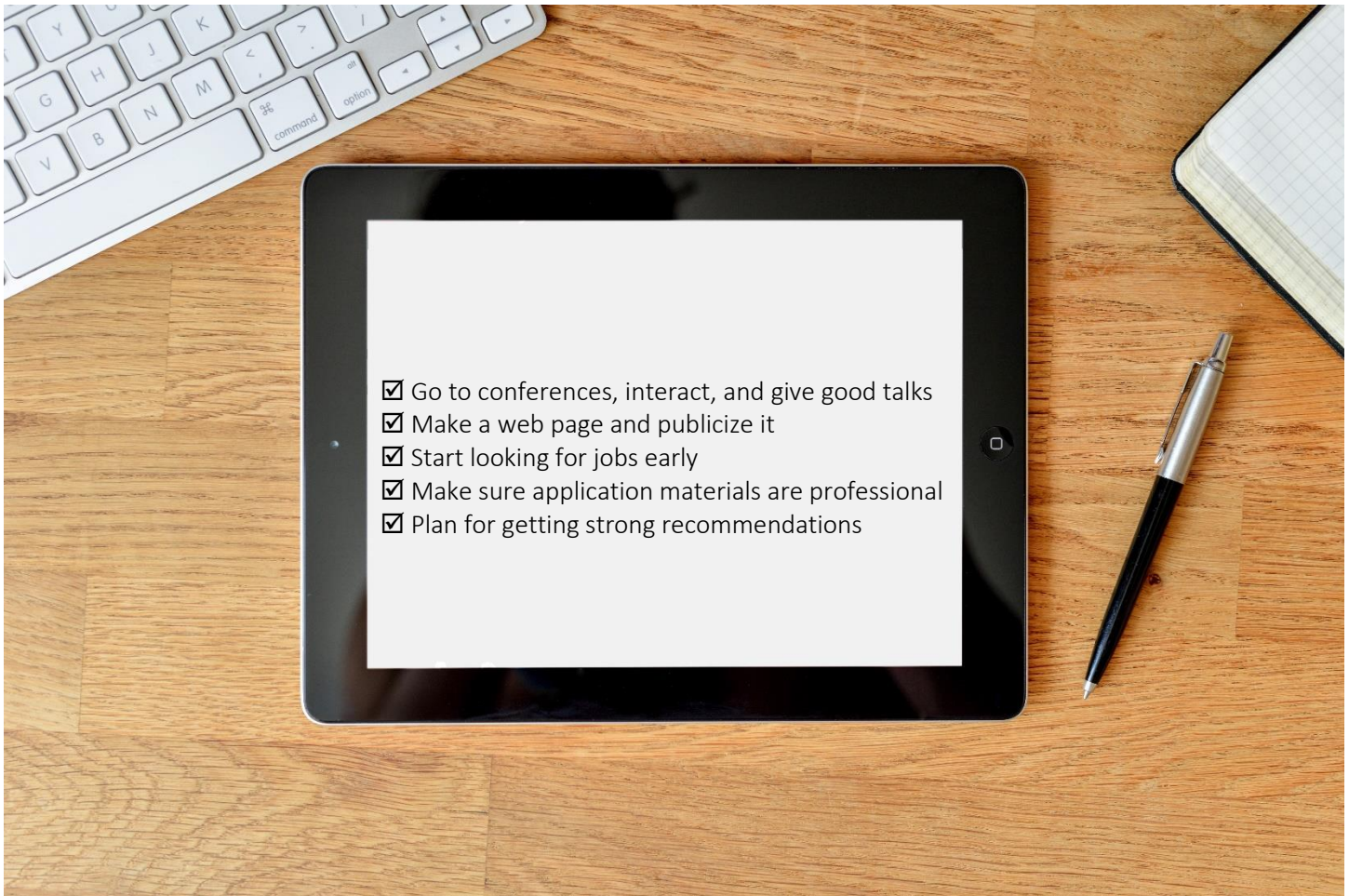
➥ Make a web page and publicize the link, e.g. put it in your email signature, application materials, and LinkedIn profile. Google sites makes this very easy to do – it's free and you don't need any special knowledge to construct a website. Other tools are available if you prefer not to use Google.

➥ Start looking for jobs early as academic jobs are competitive. Be flexible with location if you can and apply for anything you might consider accepting. It's easier to say no if you get more than one offer. Many jobs are posted on Mathjobs, but some research areas also have their own webpages. If you're searching internationally, most of those jobs will not be on Mathjobs. You will need to find out where international jobs in your area are posted.

➥ Make sure that your application materials are professional. They should include all relevant information, be easy to read, and be free of spelling errors.

- Writing should be structured in a logical way, split into paragraphs each focused on a single theme.
- Ask your advisor or a friend to look at your materials and offer constructive criticism.
- Try to tailor at least your cover letter to each individual job, e.g. make sure you mention if a department has specific people you want to work with or has specific initiatives that you would like to contribute to.
- Reach out to people you know or would be interested in working with to tell them you are applying.

➥ Plan ahead on who you will ask to write reference letters, and make sure they can offer you a strong recommendation. You will also need people other than your advisor to be aware of your work. Have someone sit in on one of your teaching sessions so they can write a letter about your teaching skills if needed.

☑ Go to conferences, interact, and give good talks
☑ Make a web page and publicize it
☑ Start looking for jobs early
☑ Make sure application materials are professional
☑ Plan for getting strong recommendations

Haven't been part of the job market for years?

Read these tips from Dr. Miriam Poteet:

My job search was more unique because I was limited to a specific location and because I had been out of the workforce, by choice, for 7 years. After my family moved to Northern Kentucky, I started looking for jobs right away and started teaching at UC a year and a half later. Hopefully, the following job search tips are helpful:

- **Check Mathjobs.org and employer job postings frequently**. The latter is especially important if you are limited to a certain location as you can look up specific employers in your region.

- **Network**. Professional relationships are extremely important, and your advisor/mentors can give you job advice and guidance too. They also may know of opportunities that you are not aware of. This is perhaps the most important advice I can give. If you choose to take time off from your job search, keep the lines of communication open with your advisor. Talking to other people, such as a neighbor or friend-of-a-friend, can even be helpful. When I moved to Northern Kentucky, I was able to start teaching as an adjunct only a couple months later through getting to know a neighbor while my kids were trick-or-treating!

- **If you take time off from your job search, try to find ways to continue your work and engage in professional development**. If you want to teach, look for teaching opportunities; if you are interested in research, look for ways to continue that too. Do something, no matter how big or small, to avoid a gap in your CV. When you begin looking for jobs again, be honest about any gaps if you're asked during an interview.

- Searching for a job in a specific location takes time, so **be patient**.

Retirement news

Dr. Don French

- Professor
- Areas of Expertise: Applied Math, Computational Modeling

Coming to Cincinnati from Carnegie Mellon University, Don has been with the Department since 1990. With a recent primary research focus in math modeling for Cellular Physiology and previous work in error analysis for finite element methods for partial differential equations, his work spans dozens of publications. Don has served in many positions over the course of his 30-year career at UC, including multiple stints as Graduate Program Director and multiple positions with Taft Research Center. He has been a consultant with the Wright Patterson Air Force Base since 2010.

Mr. Gary Haefner

- AAUP-Represented Adjunct
- Areas of Expertise: Statistics, Financial Analysis

Gary joined our Department in 2005 as an Adjunct Instructor after his first retirement. Before coming to the University of Cincinnati, he spent more than 25 years of working in industry, first with Cincinnati Bell then with Convergys. Utilizing his extensive knowledge of finance and cost analysis, Gary has primarily taught Statistics courses during his time as an instructor. For 15 years, Gary has served the department as a Course Coordinator and has taught countless thousands of students during his tenure.

Dr. David Herron

- Professor
- Areas of Expertise: Geometric analysis, analysis in metric spaces, geometric function theory.

David has been a member of the Mathematical Sciences Department Faculty since 1985. He received his PhD from the University of Michigan in Ann Arbor. In addition to his time at UC, he has been a visiting faculty member in five countries and given invited lectures all over the world. During his 36-year career at UC, he supervised the dissertation research of 5 PhD students, served on and chaired many graduate exam committees, and in an all-too-prescient project, he developed the online curriculum for Linear Algebra in 2017.

Dr. Victor Kaftal

- Professor
- Areas of Expertise: Algebra, Analysis

Victor started his 41-year career in our department in 1979 as a Visiting Assistant Professor. Over the course of his four-decade career at the University of Cincinnati, he has served at the Department, College, and University levels in various capacities. With research focused primarily in Operator Theory and Operator Algebras, Victor has contributed to dozens of publications and lectured all over the world. He has served as a visiting scholar at Texas A&M, Louisiana University, and University of Pennsylvania.

Dr. Joanna Mitro

- Professor
- Areas of Expertise: Probability, stochastic processes (Markov processes), mathematical finance, actuarial science

Joanna began her nearly 40-year career in the Mathematical Sciences Department in 1980, becoming just the second female faculty member after Maita Levine. The lack of female role models or mentors encouraged her to connect with sister math professors around the world, and she became active in the Association of Women Faculty (AWF) at UC as well as the university's AAUP chapter.

During her career at UC, Joanna has served as the Graduate Program Director, Assistant Head, Interim Head of our department, and editor of the alumni newsletter, the Right Angle. She also served as Associate Dean for Undergraduate Affairs for the College of Arts and Sciences.

Joanna continues her work with the development of scholarships for UC Mathematical Sciences students through Choose Ohio First. Her retirement was featured in UC News, which can be read here.

Dr. Tara Smith

- Professor
- Areas of Expertise: Algebraic theory of quadratic forms, division algebras, Galois groups, valuations and ordered fields, the mathematical preparation of teachers.

Tara joined our department in 1991. In her nearly 30-year UC career, she served as a Professor of mathematics with research interests in classical algebra. She had a professional interest in math education, math teacher preparation, K-12 math enrichment, and secondary - college articulation. She also served as Graduate Program Director for 3 years and Undergraduate Program Director for 5 years in the department, and as Associate Dean for Research and Graduate Studies in the College of Arts and Sciences for 2 1/2 years.

Tara worked on contract at the National Science Foundation. Between August 2011 and July 2013, she served as the Program Director for the Division of Mathematical Sciences Algebra and Number Theory program. She was a Program Director in the Division of Graduate Education from June 2016 to June 2019.

Tara has long been an ambassador for mathematics. For 20 years, she was a faculty consultant for AP Calculus Reading. From 1996 through 2016, she took on the roles of reader, table leader, question leader, and exam leader. She was a member of AP Calculus Development Committee from 2007 to 2013 and Co-Chair of the Committee from 2011 to 2013.

Tara continues to serve the mathematics community in retirement, most recently serving on NSF review panels.

Congratulations to our Professor Deborah Keefe, MBA for receiving the 2020-2021 Outstanding Adjunct Faculty Award!

● UC honored Prof. Deborah Keefe with its 2021 Outstanding Adjunct Professor Award. A UC alumna for her undergraduate and master's degrees, Keefe has taught at UC for 33 years. She is praised widely in her students' online reviews for her engaging and enthusiastic classroom instruction. Her peers, particularly those new to the department, appreciate her mentorship.

Keefe devoted her career to teaching math at Mariemont High School and Highlands High School while spending her evenings teaching at UC. Her forte is college algebra, which Keefe considers a gateway to other mathematical subjects. "I truly believe that if you engage students in your subject and create an enthusiastic atmosphere, they can learn anything," she said. Read the news here.

● Our Professor Emeritus, Roger Chalkley, recently published a book entitled "Group-Pattern Matrices." It's available on Amazon.

● UC Mathematics researcher, Jintai Ding, is one of seven finalists in NIST post-quantum security competition. Read more here.

● UC Mathematics Faculty Włodzimierz Bryc and Yizao Wang win an Annals prize from the prestigious Institut Henri Poincaré for their 2019 publication. See the announcement here.

● Professor Won Chang and team predict iceless Arctic. Read the news here.

In memoriam

Ed Merkes

Professor Emeritus Edward Merkes died peacefully on April 25, 2021. He was 92. Ed joined the UC Mathematics Department in 1963 and served as Department Head from 1970-77. During that time, the department strengthened its research profile, expanded into applied mathematics and statistics, and launched the computer science faculty. He was a driving force behind the department's library in Old Chem and the Thursday Colloquium as focal points for interaction among faculty and students.

Ed was deeply involved in the mentorship and educational activities of the department: the Proseminar for Teaching, the MA for Teachers of Mathematics program, promoting cooperative learning, and incorporating new technologies into the classroom. Everyone who passes through the department carries on traditions that Ed created. He will be missed.
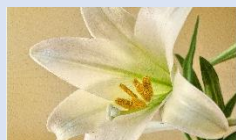
Alan Lazer

Professor Emeritus Alan Lazer taught at UC for over 15 years before joining the University of Miami. The prominent mathematician died on October 06, 2020. He was born in Bluefield, West Virginia in 1938. Interestingly enough, this is the same small town where John Nash of "A Beautiful Mind" was born. He attended Carnegie Mellon University, where he received a Ph.D. degree in Mathematics. Alan's work has been cited by thousands of mathematicians, including by leaders in the general area of nonlinear analysis. Alan was known to be a brilliant mathematician and also a uniquely humorous, kind, humble, and loving human being.

Doris Hinestroza

Alumni Doris Hinestroza received her PhD from UC in 1992 under the direction of Professor Diego Murio. She passed away in February 2019. Doris was the Dean of the Faculty of Natural and Exact Sciences at the Universidad del Valle in Colombia. She was also the Vice Dean of Curriculum, Head of the Department of Mathematics, and Director of Postgraduate Mathematics. She loved teaching and motivating students towards the learning of mathematics. It was one of the reasons she was the Vice President of the Board of Directors of the Colombian Mathematical Society. Her great love and commitment to help led Doris to create the Doris Hinestroza Foundation, which aims to help with tuition and an economic stipend for students in need.

In Young Chung

In Young Chung attended college at Seoul National University in Korea, received his PhD in mathematics at McMaster University, and was a professor of mathematics at the University of Cincinnati for over 30 years. He died on February 7, 2017.

Consider supporting our students and mission through our department's scholarships and endowment funds:

Hancock Undergraduate Scholarship Fund

The Harris Hancock Scholarship Award was established in January 1988 by Jim Deddens, David Minda, and James Osterburg. It provides scholarship funds to undergraduate mathematics majors/second majors based on academic merit.

Harry S. Kieval Mathematics Fund

Established in December 1994 by the estate of Harry S. Kieval, it provides scholarship funds to undergraduate mathematics majors/second majors based on academic merit and need.

I.A. and Fannie R. Barnett Memorial Fund

To support the annual Barnett Lecture in Mathematics, including invited speaker's travel costs, honorarium, and entertainment expenses (dinner with lecturer, Barnett family members, and some Department faculty).

Maita F. Levine Memorial Endowment Fund

To support those majoring in mathematical sciences. Uses include but are not limited to:
● Undergraduate scholarships (with a strong preference for female students). Recipients must maintain a 3.0 GPA (on 4.0 scale) in their major.
● Graduate and Undergraduate summer research fellowships, annual prizes for outstanding graduate students, and student expenses for conferences and seminars.

Mathematical Sciences Discretionary Fund

Uses include but are not limited to new faculty relocation expense reimbursement, coordinated courses grading sessions refreshments, conferences and lectures subsidy such as reception costs (particularly those not allowed on UC funds), and a wide variety of other department expenses.

Raymond H. Rolwing Mathematics Scholarship Fund

To provide an annual scholarship for a student majoring in mathematics who has achieved the class standing of junior. Recipient must have at least a 2.5 GPA. Recipient must have demonstrated financial need.

Natalie Feld Scholarship Awards Fund

Established August 1999 by the Natalie Feld Trust, it provides for one or more annual scholarships to be awarded to students in Mathematical Sciences. Scholarships shall be made available for students for his/her junior or senior year, or for both years.

Jeanne Gulden Scholarship in Mathematics

Established December 1993 by Mrs. Judith F. Ross in memory of her daughter, it provides an annual prize to the member of the junior and senior class with the most outstanding achievement in mathematical sciences.

Charles N. Moore Memorial Fund in Mathematics

Established in May 1970 by various donors in memory of Mr. Moore, the fund is to provide an annual book prize to a student in mathematics.

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Thank you for your support!

UNIVERSITY OF
Cincinnati

Herbert
Greer
French Hall

Thanks to all who contributed inspirations, ideas, information, articles and news items for this issue of the Right Angle.

Please send in your comments, suggestions, and story ideas to kamellia.smith@uc.edu.

We wish you good health and a happy new year!

Previous editions of the Right Angle can be found [here]().

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