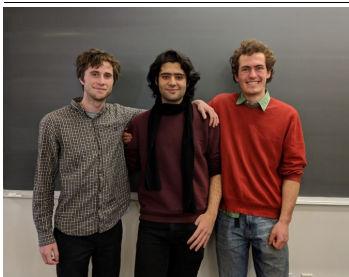


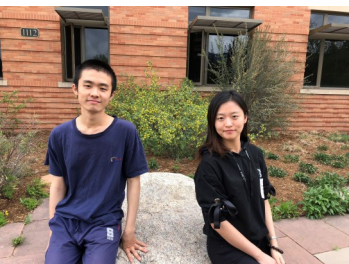
COUNTABLE BITS

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Left to right: Jack Schrott, Sohair Abdullah, Nick Crews



David Cui (left), and Xinling Dai (right). Not pictured: Vladi Vintu.

POSTERS ON THE HILL: CS GOES TO DC!

Research by graduating seniors **Anna Hessler '18**, **Nick Crews '18**, and **David Radke '18**, all majoring in computer science, was featured in the 22nd annual Posters on the Hill event in Washington, D.C. This annual poster symposium is organized by the Council for Undergraduate Research and provides an opportunity for undergraduates to present their work to members of congress and their staff. The event showcases undergraduate research from all over the United States and its territories. Out of over 400 submissions received this year, only 60 were accepted.

“Using Artificial Neural Networks to Predict Wildfire Growth”, Anna Hessler, Nick Crews, and David Radke applied artificial intelligence to the problem of predicting where an active fire is mostly likely to spread. Wildfires are extremely costly, with the US Forest Service spending over 2 billion dollars on fire fighting in 2017. In The final network was able to predict fire growth with good accuracy on the test fires. A particularly interesting result was the network correctly predicting the fire jumping through a narrow canyon a week in advance.

The work was supervised by Visiting Professor **Daniel Ellsworth** and Professor **Matthew Whitehead**. **Matt Cooney**, CC's GIS specialist, supported the students' work with GIS tools and datasets.



Left to right: Nick Crews, Professor Daniel Ellsworth, Anna Hessler, David Radke

FIRST TENURE TRACK STATISTICIAN AT CC

In the fall of 2017, the department hired **Dr. Flavia Sancier-Barbosa** as CC's first tenure track statistician to begin in the 2018-2019 school year. Dr. Sancier-Barbosa earned a Ph.D. in Mathematics with a focus on Applied Stochastic Analyses from Southern Illinois University Carbondale and has held faculty positions at Wittenberg University and Antioch College. Her research interests lie in the areas of stochastic processes and probability theory, with applications to finance and social dynamics. She has also used her expertise to serve as a consultant in mathematical modeling and data analytics. In the classroom and through her research, Sancier-Barbosa likes to bring together a wide range of related topics including mathematical finance, games, computational science, and mathematical biology. The department is excited to welcome Dr. Sancier-Barbosa to the community and to see all the great work she will do strengthening and expanding our statistical offerings.

HONORABLE MENTIONS IN MATHEMATICS CONTEST

The annual Mathematical Contest in Modeling took place in February, and 10,670 teams participated worldwide. Students were to choose one of three open-ended modeling problems then complete the modeling and the writing within four days. Both CC teams received Honorable Mentions for their solutions.

Sohair Abdullah '19, **Nick Crews '18**, and **Jack Schrott '19** (coached by **Professor Andrea Bruder**) chose to work on a “problem involving high frequency radio transmissions that exhibit multiple hopping behavior due to both surface and atmospheric conditions. Teams were asked to construct a mathematical model to determine the maximum number of hops a transmission could make before the signal dropped below a maximum usable frequency over a calm or turbulent ocean.”

David Cui '19, **Xinling Dai '20**, and **Vladi Vintu '20** (coached by **Professor Beth Malmskog**) chose a problem which “addressed an issue of language transference, cross-influence, and survivability in the modern age of digital communications. Placed in the context of a large multinational service company seeking to identify potential locations for offices, teams were asked to model the evolution of language speaker densities for 10 major languages as influenced by population movement and digital communications to predict where offices should be placed and what languages in addition to English should be resourced.”

Both problems are hard, open-ended modeling problems that do not have one single “right answer.” There's a lot of room for creativity and outside-the-box approaches. The teams had to take lots of material and make sense of it to become experts on their topics within hours. Then they made certain simplifying assumptions to come up with a mathematical description of the problem — the model — then draw conclusions.

The Colorado College Department of Mathematics and Computer Science

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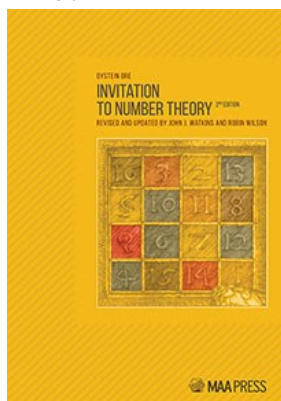
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Siddoway Sabbatical

Mike Siddoway will step down from his position in the Dean's Office after five years and will spend next year on sabbatical teaching and doing research at Montana State University. He'll teach a capstone "History of Mathematics" course in the fall, and an advanced course in the spring, likely Abstract Algebra 1 which will give him a chance to introduce Marlow Anderson's and Todd Feil's book "A First Course in Abstract Algebra" to the Big Sky State. Pham Ngoc Anh will travel to MSU to work with Mike where they will continue their study of Divisibility Theory in Rings. Fishing rods, stringed instruments, Labradors, and Mike's partner (CC geologist) Christine will make the trip too. Let Mike know if you'll be passing through Bozeman in the coming year.



FIRST CS-FOCUSED TIGER TREK TO NYC

CC's Tiger Trek program, run by the CC Career Center and the Office of Alumni and Family Relations, takes students to visit companies in major cities so they can learn about potential career paths. Thanks to a generous donation to the CS program, we were able to take students on the first ever Tiger Trek focused on Computer Science. This trek took 12 students, selected by alumni from a pool of 24 applicants, to New York City. This was part of a double-trek where another 12 students were on an Arts and Media focused trek. The CS trek students were accompanied by **Meghan Nicklaus** from the Career Center and **Dr. Janet Burge**, from the Department of Mathematics and Computer Science. The Career Center was able to line up visits



with CC alumni from Social Code, Way Up, The School of the New York Times, Flat Iron Health, the NYU Game Lab, JW Player, Bloomberg, and Trip Advisor. The students were also invited to a CC Campaign Event at the New York Academy, where they got to practice the networking skills they learned at a pre-trip workshop held by the Career Center.

The company visits gave the students a chance to hear about different types of CS-focused jobs and the different paths that CC Alumni took in getting to their current positions. The trip reinforced a number of things that are important for our students to learn: the value of

what they are learning in their classes and the value of a liberal education in helping them be agile in their careers. Many of the alumni they met had not studied CS but had still successfully transitioned into a technical career. After the scheduled activities concluded the students were able to spend a Saturday morning exploring the city before returning to Colorado Springs to rest up for the start of block 8.

Pulling together the trip took a great deal of effort from the Career Center since we have only had a CS major since 2005. But the large number of students who applied and the overwhelmingly positive feedback from the students who went suggest that this was a valuable experience. We hope to have another CS-focused trek next year and will be looking for companies willing to host a small group of bright, engaged, and highly motivated CC students.

SCHOLARSHIP

Departmental faculty members are actively involved in the world of scholarship. Here are some of this year's projects. **Kirsten Hogenson** published the article "(4,2) choosability of planar graphs with forbidden structures" in *Graphs & Combinatorics*, with several co-authors. **Andrea Bruder** co-authored a paper with EV professor Miro Kummel, entitled "Modeling Transport in Streams", which will appear in *PRIMUS*. **Molly Moran** wrote a paper with her thesis advisor Craig Guilbault for *Expositiones Mathematicae*, entitled "Proper homotopy types and Z-boundaries of spaces admitting geometric group actions". **Beth Malmskog** is in her second year with an NSA Young Investigator Grant, entitled "Curves with many points, Jacobian varieties and reduction properties". Her paper with Kathryn Haymaker "What (quilting) Circles can be squared?" will appear in *Mathematics Magazine*, and the paper "Locally recoverable codes with many recovery sets from algebraic curves" (with two co-authors) has appeared in *Advances in Mathematics of Communication*. She also published (with several co-authors) a book chapter entitled "Variations of the McEliece cryptosystem" in *Algebraic Geometry for Coding Theory and Cryptography*. **Dan Ellsworth** published the paper "Simulating power scheduling at scale" presented at a workshop held in conjunction with the *International Conference for High Performance Computing, Networking, Storage and Analysis*. **Janet Burge** co-authored the paper "Identifying design rationale using ant colony optimization" with M. Lester; it will appear in the proceedings of the *International Conference on Design, Computing and Cognition* at Lake Como. **Mike Siddoway's** key results in his 2015 and 2017 papers written with Pham Ngoc Anh were reported by Professor Anh in a keynote address at an international congress in Graz, Austria in February. Professor Emeritus **John Watkins** and frequent CC visitor **Robin Wilson** published an updated and revised edition of Oystein Ore's classic book *Invitation to Number Theory*.

TALITHIA WILLIAMS, PHD, DELIVERS ROBERTS LECTURE

On February 22, the Department of Mathematics and Computer Science hosted **Dr. Talithia Williams**, accomplished Statistician and Associate Dean for Research and Experiential Learning at Harvey Mudd College, for the annual Harold D and Rhoda N Roberts Memorial Lecture. Dr. Williams' talk, "Transforming the STEM Landscape: A Lesson in Disruptive Innovation," focused on two questions: what is wrong with the current state of the science, technology, engineering, and mathematics, and how can we change it?

Low numbers of women and people of color, and great disparities between the experiences of different groups within the fields, constitute a crisis both within the disciplines and in the larger world of science. Dr. Williams shared her experiences, and interventions that she has undertaken to help address these issues. She described the impact of a high school teacher who encouraged her to major in mathematics, and her efforts in building and fitting into a mathematics and statistics community in graduate school. Dr. Williams shared some of her most recent efforts, including work in the EDGE (Enhancing Diversity in Graduate Education) Program, and with SESHAT (Seeking Excellence in Science, Healthcare, Arithmetic, and Technology), and the Math and Science Conference for African American Girls, organized by Sacred Sistahs.

Her talk concluded with a discussion of the importance of creating accessible materials to spark interest and welcome all into STEM fields. As an example, she shared clips of her work with *NOVA Wonders*, a new PBS television show hosted by Williams and other gifted scientists and communicators. Dr. Williams' visit to Colorado College also included a Fearless Friday lecture on her statistical research, as well as a productive discussion with administrators, students, and faculty from across the STEM disciplines about how CC can help create a more just and equitable environment for all students.



TENURE FOR MATTHEW WHITEHEAD, PH.D.

Professor Matthew Whitehead has received tenure and promotion to Associate Professor. He received universal praise from students and colleagues for his outstanding teaching and mentoring, robust research program, and strong commitment to the life of the college. His research interests include machine learning and artificial intelligence. We are all very excited for his successful review!

Professor Whitehead received his undergraduate degree in mathematics at Willamette University and his doctorate degree in computer science at University of Indiana. He joined the department as a visitor in 2010 and started his tenure-track position in 2012. During his sabbatical next year, Professor Whitehead will be conducting research on attention in deep learning networks and applied reinforcement learning. He will also be updating the popular Robotics extended format course.

PARAPROFS, OLD AND NEW

News about our Paraprofessionals! **Fei Ma '17** and **Hannah Neustadt '17** have been exceptional paraprofessionals this past year. Particular accomplishments include a more streamlined process in assigning homework grading assistants to various courses, and an application written by Fei that helps place students into the right courses — this application is anticipated to continue to be a valuable tool in years to come. Fei and Hannah (with Marita) did a brilliant job organizing our annual holiday parties and picnics, and other events such as supporting the smooth running of department seminars. We look forward to learning where Fei finds herself next year, and wish Hannah the best as she moves to Seattle next month.

Bob Kuo '18 and **David Bai '18** will be returning in August 2018 as the incoming paraprofessionals in mathematics and computer science, respectively. Despite their distinct majors, both Bob and David are accomplished in the two disciplines. One of Bob's planned projects alongside paraprofessional duties is to further his knowledge of hyperbolic geometry, both mathematically and through developing an application, as he looks ahead to graduate school. Bob's and David's interests may have diverged since their first class at Colorado College — an FYE (First Year Experience) course in number theory in 2013. We look forward to Bob and David working together again in the department in the coming year.

Graduating Majors, 2018:

Mathematics:
*Madeline Abrams
 Natalia Dellavalle
 Quinten Eggink
 Zoe Frolik
 Neal Hao
 Ethan Holland
 Bob Kuo
 Katie Larsen
 Anna Lynn-Palevsky
 Gabbie Pucciarelli
 Sarah Reeve
 Sasha Rieders
 Hanbo Shao
 Ellen Silk
 Lyujiangan Ye*

Computer Science:
*Nick Crews
 David Bai
 Jonah Broh
 Calvin Butler
 David Hammarth
 Elias Harkins
 Aidan Hendrickson
 Anna Hessler
 Laura Himelman
 Harvey Kadyanji
 Chris Klusendorf
 Nikhil Kovelamudi
 Grant Mitchell
 Abigail Moore
 Callum Neeson
 Long Nguyen
 Katherine Pontikes
 David Radke*

Mathematical Economics:
*Samuel Ayers
 Liam Baldrige
 Ryan Brameier
 Sean Fite
 Susannah Frechter
 Marketa Harastova
 Emily Harrison
 Hunter Henninger
 John Higham
 Riley Hoffmann
 Theodore Hooker
 Aabhusan Khadka
 Sophia Leamon
 Jiameng Li
 Daniel Oldendorf
 Shin Olsan*

Rawles Exam
 Our department's annual math contest, the Rawles exam, was held in Block 6. Our *upper division winner* was **Vladi Vintu '20**, and our *lower division winner* was **Ivy Chen '21**. Congratulations!

Featured Course: MA256 Math Models in Biology

This year, **Professor Andrea Bruder** taught Mathematical Models in Biology. The course focused on epidemiology, which is the study of the spread of infectious diseases. To get a feel for data and learn the methods that are commonly used to model epidemics, the students generated a data set of a zombie outbreak and modeled the data with differential equations. Other projects included the 1968 influenza pandemic and the 2017-18 flu season. For the latter, the students used data from the CDC website and, based on their own models, came up with predictions for the tail end of this year's flu season.

Homecoming Visitor

During Homecoming weekend, **Lauren Hinkle '11** visited us and gave a Fearless Friday talk about her work on self-driving cars. While a student at CC, Ms. Hinkle double majored in Computer Science and Physics, did an REU (Research Experience for Undergraduate Students) at Amherst University, and worked on a research project at UCCS. She also worked as a peer tutor at the Quantitative Reasoning Center. Ms. Hinkle received her Master's degree from University of Michigan in 2016, where she studied how robots interact with the world around them. She has since been a scientist at Charles River Analytics in Boston and uses Machine Learning and Python in her research.

Life after Graduation

Our graduating seniors have exciting plans for next year: **Nick Crews** is headed to Google's Boulder campus as a software engineer. **Hanbo Shao** will begin the Industrial Engineering Program at Georgia Tech, and **Anna Lynn-Palevsky** will be off to Harvard University. **Abigail Moore** is headed to Price Waterhouse Cooper as a Cybersecurity Associate. **Madeline Abrams** will be teaching in Denver. **Long Nguyen** will be an infrastructure engineer for Cigna in Denver. **Katie Larsen** is headed to Spain for a course on teaching English abroad. **David Radke** will be interning at LLNL this summer and start a Master's program in computer science at University of Waterloo in the fall.

DONOR SPOTLIGHT: RICHARD KOO, PH.D.

This year **Dr. Richard Koo '82** added to his amazing list of contributions to the department and college. He is an alumnus from the department, back when it had the shorter name "Mathematics". He studied computer science long before it became an official major at CC and received his Ph.D. in computer science from Cornell University. Dr. Koo founded his own business and embarked on a successful career in Silicon Valley.

Dr. Koo is now semi-retired and has been a generous donor to the college for several years. In the last couple of years, he has visited the department to teach computer science courses as a block visitor, an invaluable donation of his time and expertise given the high demand for our computer science courses. He has taught an impressive range of courses, from Web Service Design to Databases to Theory of Computation. Our students are excited to have a professor who is a real Silicon Valley entrepreneur who can give them tips on making their careers.

This year Richard found yet another way to contribute by making a gift to the department to support computer science students traveling to compete in the ACM-ICPC programming contest. The ACM-ICPC contest is actually a sequence of contests held at the regional, national and international levels. It is a great opportunity for our students to practice their programming skills and meet computer science students from other colleges and universities. Some teams take this contest very seriously, training intensively over several months. Says Professor Ylvisaker, "We are honored by this gift and can't wait to see what the students can do!"

PUTNAM COMPETITION

On December 2, 2017, ten CC students took part in the 78th annual William Lowell Putnam Competition. The Putnam competition is one of the most prestigious undergraduate pure mathematics competitions in North America and takes place annually on the first Saturday in December. It consists of two 3-hour sessions featuring challenging math problems. Contestants are to individually solve 12 problems, 6 in the morning and 6 in the afternoon for a total of 120 points. Each institution also nominates a 3-member team for the team aspect of the competition. The 2017 competition attracted 4,638 students from 575 institutions. The results for the 2017 competition were published in early February, 2018.

The CC team comprising **Bob Kuo '18**, **Hanbo Shao '18**, and **Vladi Vintu '20** placed 89 out of 575, the highest ranked CC team in recent history. Vladi and Bob, who scored 22 and 17 points respectively, were ranked 575 and 856. These are amazing results given that the median score for the exam was 1, and only 20% of the participants scored more than 13 points.

FEMSTEM SYMPOSIUM

The FemSTEM Symposium is an interdisciplinary event and speaker series organized by **Professor Heidi Lewis** (Feminist and Gender Studies) and **Professor Andrea Bruder** (Mathematics and Computer Science). It was designed to illustrate how the study of power and inequity necessitates collaboration among intellectuals in many fields within and outside of the academy, including those that may not be obviously connected. The symposium featured and engaged diverse voices and experiences that are often marginalized. The event series kicked off with a First Mondays talk by **Dr. Samantha Blackmon**, who is associate professor of English at Purdue University and co-founded *Not Your Mama's Gamer*, a website and podcast that examine gaming from a feminist perspective. The symposium continued with a visit by **Dr. Talithia Williams**, distinguished statistician at Harvey Mudd College, who gave this year's Roberts Lecture and a talk about data mining your own body's data, followed by meetings with several student and faculty groups. We concluded the symposium in block 8 with a public screening of the movie *Hidden Figures*. The event was followed by a panel discussion featuring Dr. Bruder, Dr. Lewis, and **Desirae Martinez '12**, an alumna who majored in mathematics and minored in Feminist and Gender Studies and Chemistry. Ms. Martinez, who is now in medical school at University of Colorado School of Medicine, met with a group of students over lunch to talk about careers in the medical field.



Back, left to right: Professor Heidi Lewis, Alejandra Hernandez, Savannah McDaniel, Cheanna Gavin, Professor Andrea Bruder, Desirae Martinez. Front, left to right: Maggie Mehlmann, Amy Raymond, Sophie Aiken, Bridget Galaty.

ALUMNI SPOTLIGHT: SARAH WOLFF, PH.D.

Dr. Sarah Wolff graduated from Colorado College in 2010. While at CC, she balanced her time between mathematics courses and playing on the women's soccer team — and she excelled at both! She graduated with distinction in mathematics and was one of two 2010 Florian Cajori Prize recipients. During the spring before she graduated, Wolff traveled to Nicaragua to volunteer with Soccer Without Borders before beginning graduate school as an NSF Graduate Fellow at Dartmouth College in the fall of 2010. During her time at Dartmouth, her dissertation focused on generalized Fourier Transforms. While in graduate school, she also spent two months at the University of Pretoria in South Africa, under an NSF GROW with USAID Research and Innovation Fellowship to test mathematics education materials in South African public schools. After finishing her Ph.D. at Dartmouth College in 2015, she took a position as Assistant Professor of Mathematics at Denison University in Granville, Ohio. Dr. Wolff continues to work on research projects that link algebra and graph theory, in particular how Fourier Transforms can be used to unite these areas. Outside of mathematics, she is an avid runner and manages to find time at least once a year to come back to Colorado and visit the mountains!



MAJORS PRESENT AT NATIONAL CONFERENCE

The Joint Mathematics Meetings were held in January 2018 at the Convention Center in San Diego, California. Over 6,400 mathematicians were in attendance, including a large CC contingent. **Professors Marlow Anderson** and **Andrea Bruder** were busy interviewing candidates, including one of our newest additions to the department, **Shishir Agrawal**. **Professors Molly Moran**, **Beth Malmskog**, and **Kirsten Hogenson** were also in attendance giving presentations and attending research talks. CC Seniors **Bob Kuo**, **Hanbo Shao**, and **Lyujiangnan Ye** and CC Juniors **Malcolm Gabbard** and **Sam Kottler**, all majoring in mathematics, attended the conference and gave presentations on their summer research. Despite everyone's packed schedules, they managed to find a time to meet for dinner, and CC alumna **Sarah Wolff '10** (featured in this year's Alumni Spotlight article) joined as well.



Part of the CC group at dinner (from left to right): Bob Kuo, Hanbo Shao, Lyujiangnan Ye, Malcolm Gabbard, Professor Andrea Bruder and Professor Kirsten Hogenson. Photo Credit: Marlow Anderson

EUCLID SCHOLARS

The Euclid Scholarship is made possible by generous gifts from **John Thompkins '89** and **Jeanne Lenhoff Williams '58**. The department awarded 13 Euclid Scholarships this year to first year students **Kon Aoki**, **Jerrell Cockerham**, **Abigail Ezell**, **Ely Merestein**, **Maria Nowotka**, and **James Zeng**, and second year students **Haley Colgate**, **David Cui**, **Sarah Dunbar**, **Zizhen Fan**, **Darryl Fillmore**, **Sam LeBlanc**, and **Hanqing Li**. In addition, four students received Euclid funding for their summer research with CC professors, including **Jerrell Cockerham** and **Zhaopeng Li**, who will be working with **Professor Beth Malmskog** on problems involving quilts and Latin squares, **Darryl Fillmore** who is pursuing interdisciplinary research with **Professor Jane Murphy** (History) on a digital history project, and **Hanqing Li** who will be working with **Professor Andrea Bruder** on a project in mathematical biology.



This year's Euclid Scholars. Back, left to right: Kon Aoki, Samuel LeBlanc, James Zeng, Hanqing Li, Trillian Fan. Front, left to right: Abigail Ezell, Jerrell Cockerham, Sarah Dunbar, Ely Merenstein, Maria Nowotka. Not pictured: Haley Colgate, David Cui, Darryl Fillmore.

FIRST PI MU EPSILON CHAPTER

On May 4, 2018, Pi Mu Epsilon President **Paul Fishback** visited the department to preside over the founding of CC's first ever Pi Mu Epsilon Chapter. After some opening remarks by Professor Moran, 17 new members were inducted, including charter members **Malcolm Gabbard**, **Sam Kottler**, **Bob Kuo**, **Hanbo Shao**, **Lyujiangnan Ye**, **Dr. Beth Malmskog**, and **Dr. Molly Moran**; and **Sophie Aiken**, **Haley Colgate**, **David Cui**, **Xinling Dai**, **Natalia Dellavalle**, **Kathy Feng**, **Zoe Frolik**, **Zhaopeng Li**, **Anna Lynn-Palevsky**, and **Vladi Vintu**. Congratulations!



Departmental Awards

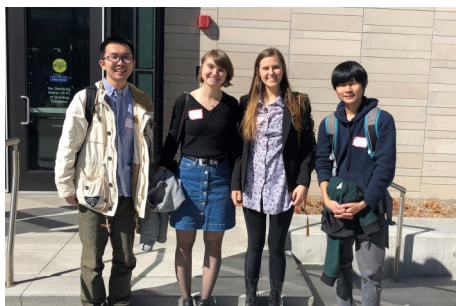
Each year the department gives the **Florian Cajori Award** in Mathematics and Computer Science, honoring a student who has demonstrated unusual talent, achievement, and interest in mathematics. This year's honorees are **Bob Kuo** and **Hanbo Shao**, who graduated with distinction in mathematics. Bob will stay on with us next year as a paraprofessional, and Hanbo will be off to graduate school at Georgia Tech. **Nick Crews** received the Steven Janke Prize in Computer Science, which goes to the student who best demonstrates unusual talent and achievement in Computer Science. Nick will be working at Google next year. The department honors a graduating student with the **Sophie Germain Award**, which recognizes unusual dedication and passion for mathematics or computer science. This year's award goes to **Hanbo Shao**. The **Grace Hopper Award** goes to the student who best demonstrates an unusual commitment to the CS community. This year's winner is **David Bai**, who will be paraprofessional in CS next year.

UNDERGRADUATE RESEARCH CONFERENCES

Our mathematics and computer science majors often work on research projects with a faculty member during the summer, or they pursue ongoing, independent projects. The three annual, regional undergraduate research conferences offer great opportunities to present these projects and be inspired. At CSURF (Colorado Springs Undergraduate Research Forum), which took place on our campus, **Jerrell Cockerham '21** presented his project on modeling the 2017-18 flu season from Professor Andrea Bruder's Mathematical Biology class.

Several students also traveled to UCCS to participate in PPRUMC (Pikes Peak Regional Undergraduate Mathematics Conference), with three student groups presenting. **Malcolm Gabbard '19** and **Sam Kottler '19** presented their research with Professor Molly Moran on metrics on visual boundaries. **Vladi Vintu '20** and **David Cui '19** presented their work on their project for the Mathematical Contest in Modeling on language growth, estimating what languages would be most spoken in 50 years. **Lauren Stierman '20** presented her research with Professor Jane McDougall on minimal surfaces. Seven CC students in total attended, along with several faculty members. CC was also represented in the *Life after Graduation* panel discussion in which alumni **Hanson Smith '14** and **Katie Martinez '15** participated.

Students also traveled to CU Denver to participate in the SIAM (Society for Industrial and Applied Mathematics) Front Range Student Conference. CC sent three students with paraprofessional **Hannah Neustadt** to learn about a wide range of applied mathematics topics, from rainbow graphs to Starcraft and firearms registration systems.



CC Students attending the SIAM Front Range Student Conference on March 3, 2018 at CU Denver (left to right) : Hanbo Shao, Sophie Aiken, Hannah Neustadt, Kon Aoki.

VISITORS

The Mathematics and Computer Science department will have 6 full-year visitors in the department next year. Four of these visitors were with us this year. Returning to teach computer science is **Professor Dan Ellsworth**, while **Professors Nguyen Nguyen, Andrew Kelley** and **Kirsten Hogenson** will all be rejoining us for another year teaching mathematics. In addition, we have **Professor Shishir Agrawal** teaching mathematics. He finished up his Ph.D. in mathematics at UC Berkeley this spring; his undergraduate degree is from the University of California at San Diego. He studies algebraic and arithmetic geometry. We will also be joined by **Professor Richard Wellman**, who will be teaching computer science for us. Wellman received his Ph.D. in mathematics from Utah State University in 1993 and is a professor of mathematics at Westminster College in Salt Lake City. He looks forward to pursuing his work in machine learning algorithms while visiting us. We also have some shorter term visitors who have taught for us before: **Professors Andy Glen** and **Rob Gordon**. In computer science we will have one block each taught by emeritus professor **Steven Janke** and distinguished alumnus **Professor Richard Koo**.

LET US HEAR FROM YOU!

We would love to hear what exciting things are going on in your life, and we welcome your submissions for our newsletter and the department's website. Please keep in touch and send your news to Andrea Bruder (abruder@coloradocollege.edu).

GIVING TO THE DEPARTMENT

To make a gift to the Mathematics and Computer Science Department, please visit our secure online giving site at www.coloradocollege.edu/giving. Or you can mail your check or money order, payable to Colorado College, to:

Office for Advancement
Colorado College
P.O. Box 1117
Colorado Springs, CO 80901-9897

Please include the designation "Department of Mathematics and Computer Science" in the memo line of your check, or include a note with your online gift. You may choose an existing fund (e.g., Euclid Fund or Department Fund) as a designation, or contact Andrea Bruder (Chair, 719-227-8216) to discuss new ways to support the Mathematics and Computer Science Department.

Math Club

This year, juniors **Sam Kottler** and **Malcolm Gabbard** founded the Math Club which, at the end of the year, was officially chartered by the Colorado College Student Government Association. Math Club's big contribution to the department in its inaugural year was the Student Speaker Series, a blockly student presentation geared towards every mathematical audience. The talks were on a wide range of topics and showcased the varied interests of our majors. Math Club has a number of proposed activities for next year, including math GRE prep sessions and Fearless Friday pre-reading groups. Math Club, along with SIAM (Society for Industrial and Applied Mathematics) and the newly created chapter of AWM (Association for Women in Mathematics) is helping contribute to our vibrant mathematical community!

Phi Beta Kappa

Phi Beta Kappa is America's oldest and most prestigious academic honor society. This year, five mathematics and computer science majors were elected to membership in Phi Beta Kappa. Congratulations to **David Bai**, **Nick Crews**, and **Abigail Moore** (Computer Science), and **Natalia Dellavalle** and **Hanbo Shao** (Mathematics)! Says Professor **Den-nis McEnnery**, Vice President of CC's Phi Beta Kappa Chapter, "To be elected, students must have very high cumulative grade point averages, demonstrate significant breadth in liberal arts studies, and be recognized by the faculty as a whole for their academic and personal strengths."

*Math and Computer Science
Faculty (2017-2018)*

Marlow Anderson
Janet Burge
David Brown
Andrea Bruder
Dan Ellsworth
Stefan Erickson
Kirsten Hogenson
Andrew Kelley
Beth Malmskog
Jane McDougall
Molly Moran
Nguyen Nguyen
Mike Siddoway (Assoc. Dean)
Matthew Whitehead
Ben Ylvisaker

Departmental Staff

Marita Beckert (Admin. Asst.)
Fei Ma (Paraprof.)
Hannah Neustadt (Paraprof.)
Amy Pacheco (Tech. Dir.)