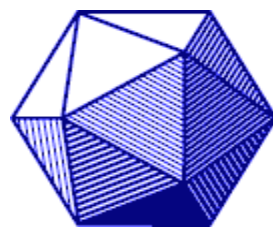


HOM SIGMAA News



Volume X, Number 2

September 2020

Greetings from the HOM SIGMAA Chair

Dates to Remember:

- January 6 – 9, 2021, Virtual JMM
- July 12 – 14, 2021, joint CSHPM & BSHM meeting at St. Andrews in Scotland

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“That is crazy, 2020!” That is how I started our last HOM SIGMAA newsletter, but I was commenting on my son being in high school and how time flies. I think we all have a new definition of “crazy” and of “how time flies” or doesn’t, depending on how the pandemic has affected you and yours. I hope that you and your family are well, that you survived the spring, and for those of us teaching this fall, that it is going much better than the spring! Like many of you, I found, and still find myself distracted and not getting done academic projects I had hoped to get done.

Though to be honest, since spring I have done a lot of gardening, cooking (learned how to make soft pretzels), reading (reread three Dunham books back-to-back), puzzles (math and jigsaw), and above all else, hounding my fifteen-year-old to do his online school work (that did not go well!) As I write this it is a few days out from everyone in my household going back to school. By the time you read this I hope that we are all confident and proficient online instructors and Zoom meetingers.

Speaking of online... we are now fully integrated onto MAA Connect, and I am happy to continue to see our wonderful HOM discussions. Keep up the great dialog! With so many conferences being cancelled or taken online, our Connect community is even more important that it was before.

On that note, JMM2021 has been taken online. This is sad given that it was to be the last one that the MAA would co-host. The HOM SIG will still have our traditional happy hour – membership meeting – happy hour – annual guest speaker – happy hour, but in a virtual format. So instead of a cash bar and yummys, it will have to be BYOB, but I am sure we will still have a great time. Danny Otero will be our speaker. Keep an eye out as January approaches for details of the time and how to log into the meeting.

The joint CSHPM/BSHM/HOM meeting at St. Andrews has been rescheduled for July 12-14. More information on Connect as that draws near. If you submitted an abstract for that meeting, it will rollover unless you notify the organizers otherwise.

I have been thinking about how we can continue to connect with each other in the absence of meetings, and maybe even change our direction some. Keep an eye out for virtual opportunities, once things have calmed down. Some ideas are regular virtual HoM colloquium talks, resurrecting our book club virtually, virtual read the masters events, to name a few. If anyone is interested in pursuing any of these, or just wants to let me know you would be interested in attending, please email me directly at ashellge@emich.edu.

In conclusion, yes, it is still 2020! Enjoy it while it lasts, hopefully it will never come again.

Till we meet again.

Amy Shell-Gellasch, Chair, HOM SIGMAA



2021 Virtual JMM, January 6 - 9

It was recently announced that the 2021 Joint Mathematics Meetings, originally scheduled for Washington, DC, will now be a virtual meeting. According to a message from Hortensia Soto, MAA Associate Secretary, “The 2021 Virtual JMM will be a somewhat scaled-back version of the traditional meeting. It will remain devoted to mathematics research, teaching, advancement, and achievement, as well as time for conversation with friends and colleagues.

We're excited about the opportunities that a virtual meeting offers. Mathematicians and students can attend from anywhere, access information, and participate in sessions. This online meeting will also allow participants to enjoy recorded content as their schedules permit. We look forward to working with session organizers, presenters, participants, exhibitors, and everyone committed to our mathematical community.

We are working hard to provide you with specifics on the 2021 Virtual JMM program, registration fees, exhibits, and deadlines. That information will be made available to you as soon as possible on the [FAQ page](#).”

HOM SIGMAA is planning on having a virtual business meeting, happy hour, invited speaker. Professor Danny Otero, Xavier University, will give the invited address. More information will be forthcoming via MAA Connect (connect.maa.org).



HOM SIGMAA Elections

Every fall the members of HOM SIGMAA elect at least one new member to our Executive Board. Each of these executives – Chair, Secretary/Treasurer, Program Coordinator and Electronic Resources Coordinator – serve a three-year term, appropriately staggered so as to preserve continuity of governance. We need to elect a Secretary/Treasurer and a Program Coordinator this fall, as their terms are set to expire at the conclusion of JMM 2021 this January. (Because this is the last time for the foreseeable future that MAA will formally participate in the JMM, *after this election cycle, HOM SIGMAA Officer terms will begin on the first day of the calendar year of their terms.*) Elections will take place in October and will be administered by MAA staff as has happened in recent years.

The Secretary/Treasurer keeps records of official meetings of the HOM SIGMAA and its Executive Committee and disburses funds as directed by the HOM SIGMAA Executive Committee. Other duties include keeping a record of the affairs of HOM SIGMAA, communicating important information about the SIGMAA to its members through a regular Newsletter, handling correspondence, and preparing the SIGMAA annual report for submission to the MAA.

The Program Coordinator solicits proposals for special sessions at annual Meetings of the MAA, and for other workshops, conferences, etc., from the HOM SIGMAA membership, and coordinates with the MAA Associate Secretary to plan these programs.

As immediate Past Chair of HOM SIGMAA, it is my responsibility to organize these officer elections with the MAA staff. To this end, I am soliciting from you, the members, names of candidates you think would be ideal to stand for election to these posts. Self-nominations are also welcome. **Please send nominations to me at otero@xavier.edu, by Friday, September 25, 2020.**

--Danny Otero

Past Chair, HOM SIGMAA

Winner of the 2020 Student Writing Contest

First place in the 2020 HOM SIGMAA Student Writing Contest goes to Jeff Powers of Grand Rapids Community College. His unanimously winning paper was titled "Did Archimedes do Calculus?". This year's winner is a first in that he is a community college student.

Jeff was given membership to the MAA and HOM SIGMAA.

Copies of winning papers are available on the HOM SIGMAA website: <https://homsigmaa.net/>

You can also find the winning paper on Convergence: <https://www.maa.org/press/periodicals/convergence/hom-sigmaa-2020-student-paper-contest-winner>

Congratulations to our winner **Jeff Powers** and all students who submitted for the contest.

Thank you to Amy Shell-Gellasch for running this year's contest and to the contest judges for your service!

The flyer for this academic year's contest can be found at the end of the newsletter.

Convergence Calendar

Visit <https://www.maa.org/press/periodicals/convergence/convergence-calendar> for a list of events and meetings around the world which relate to the History of Mathematics.

Save these dates for future MathFests!

2021	Sacramento, CA	August 4-7
2022	Washington, DC	August 3-6
2023	Tampa, FL	August 2-5
2024	Indianapolis, IN	August 7-10

Small grants for the history of mathematics classroom

We have granted our first small grant for classroom items! Erik Tou purchased two sets of beautiful wooden rectangular prism Napier's Bones for his course. The information for how to apply for a small grant to purchase items for your history of mathematics course can be found on our website.

People, Places, Practices

Joint BSHM - CSHPM/SCHPM Conference

University of St Andrews, Scotland

Rescheduled for 12th - 14th July 2021

People, Places, Practices, is the 5-yearly joint conference of the [British Society for the History of Mathematics](#) and [Canadian Society for History and Philosophy of Mathematics/La Société Canadienne d'Histoire et de Philosophie des Mathématiques](#), in collaboration with [HOM-SIGMAA](#), the History of Mathematics Special Interest Group of the MAA.

The conference is hosted by the [School of Mathematics and Statistics](#), St Andrews University, the home of the [MacTutor History of Mathematics Archive](#).

An **Education Strand** within the conference will run on dates to be confirmed. This will provide practical talks and workshops for those teaching the 15+ age group. The programme will be designed to minimise accommodation costs (0 or 1 night) and we are exploring ways of enabling remote participation.

The meeting will be co-located with the [Eleventh Conference on Mathematical Cultures and Practices](#). The two events will overlap on one half day.

Confirmed Speakers include:

- Karen Parshall (University of Virginia)
- Edmund Robertson (University of St Andrews)
- Colm Mulcahy (Spelman College)
- Brendan Larvor (University of Hertfordshire)
- Serafina Cuomo (University of Durham)
- Valeria Giardino (University of Lorraine)
- Robin Wilson (Open University)
- Évelyne Barbin (University of Nantes)

Presenters of accepted papers (from 2020) have been asked to confirm whether they wish to present in 2021. A second call for papers may be issued in the winter 2020/21 if it looks like there is space in the programme.

New registration information will be advertised as soon as possible. We will be contacting those who have already registered this year with refund. The conference webpage can be found at

<http://www.mcs.st-andrews.ac.uk/bshm-cshpm/index.shtml>

MAA Convergence

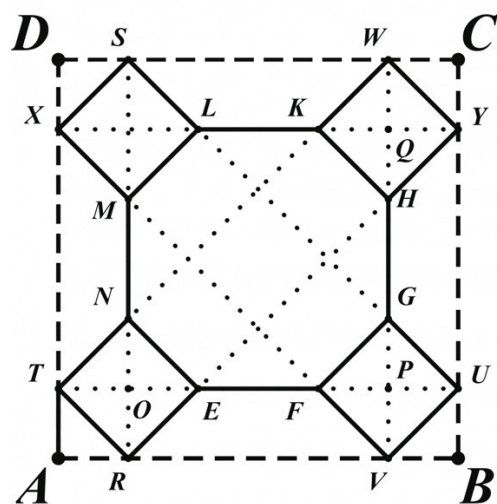
Offers Teaching Materials and More

Janet Barnett and Amy Ackerberg-Hastings

Editors, *MAA Convergence*

MAA Convergence is both an online journal on the history of mathematics and its use in teaching, and an ever-expanding collection of online resources to help its readers teach mathematics using its history. We highlight here some of our newest articles and features.

In 2020, *Convergence* has presented a variety of ways to bring history into the mathematics classroom. In “[A Mathematical History Tour: Reflections on a Study Abroad Program](#),” Abe Edwards and Marie Savoie share details of their journey through Florence, Paris and London as part of a unique study-abroad program in the history of mathematics. Showing timely foresight, they also provide tips on creating virtual tours for on-site and distance learning. Meanwhile, a unique, lavishly-illustrated textbook inspired associate editors Maureen T. Carroll and Elyn Rykken to unearth biographical information about the author in “[Mabel Sykes: A Life Untold and an Architectural Geometry Book Rediscovered](#).” Diagrams and animations from *A Source Book of Problems for Geometry Based upon Industrial Design and Architectural Ornament* (1912) offer examples of geometric constructions, and the article’s references provide a roadmap for finding the details of a forgotten life story.



Above: Diagram for a linoleum tile from Mabel Sykes’ *Source Book*.

Convergence also continues its practice of bringing quality reprints to new audiences of teachers and learners, including “[Word Histories: Melding Mathematics and Meanings](#),” by Rheta N. Rubenstein and Randy K. Schwartz, from NCTM’s *Mathematics Teacher*, and “[Why History of Mathematics?](#)” by Glen Van Brummelen, from *Vector*, published by the British Columbia Association of Mathematics Teachers. Bill

Berlinghoff and Fernando Gouvêa shared two volumes of reproducible student activity sheets developed to accompany their well-regarded textbook, *Math through the Ages*. “[Pathways from the Past: Classroom-Ready Materials for Using History to Teach Mathematics](#)” is especially suitable for practicing and pre-service teachers of secondary mathematics and those involved in teacher training. Additionally, readers can find a copy of the 2020 winner of the HOM SIGMAA Student Paper Contest, “[Did Archimedes Do Calculus?](#)” by Jeffrey Powers.

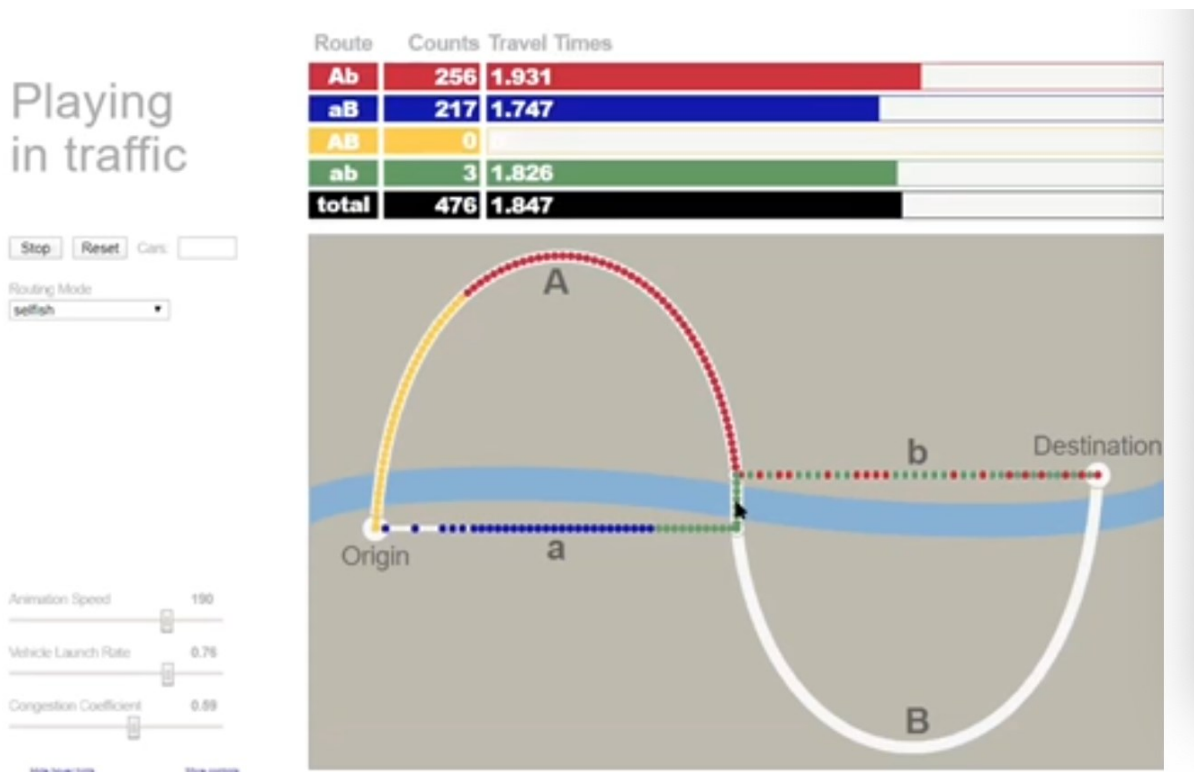
A new series of curricular units based on primary source texts for use in teaching and learning trigonometry has been launched: “[Teaching and Learning the Trigonometric Functions through Their Origins](#),” by Danny Otero. Episode 1 covers Babylonian Astronomy and Sexagesimal Numeration, and Episode 2 guides students through a reconstruction of Hipparchus’ Table of Chords. Ongoing series and collections include:

“[Math Origins](#),” in which author Erik Tou traces the historical development of concepts seen in today’s undergraduate curriculum.

“[A Series of Mini-projects from Transforming Instruction in Undergraduate Mathematics via Primary Historical Sources](#),” which currently offers sixteen mini-Primary Source Projects (PSPs) from the TRIUMPHS team for use in a variety of courses. The most recent PSPs to join the series are:

[Investigations Into d’Alembert’s Definition of Limit: A Mini-Primary Source Project for Students of Real Analysis and Calculus 2](#) (by David Ruch)

[Braess’ Paradox in City Planning: A Mini-Primary Source Project for Multivariable Calculus Students](#) (by Kenneth M Monks)



Above: Still from animated simulation of Braess’ Paradox.

See all of these articles and more at *MAA Convergence*:

<http://www.maa.org/press/periodicals/convergence>.

Interested in contributing? We'd love to hear from you! *Convergence* publishes expository articles on the history of topics in the grades 8–16 mathematics curriculum; translations of primary sources; classroom activities, projects, or modules for using history to teach mathematics; and classroom testimonials after applications of such activities, projects, or modules. Additionally, we welcome submissions related to the following *Convergence* features:

“[Problems from Another Time](#),” highlighting historical problems.

“[On This Day](#),” a listing of three or four historic mathematical events that happened on any given date.

“Today's Quotation,” a quotation about mathematics from a historical figure selected from a [searchable database of quotations](#).

“[Conference Calendar](#),” an up-to-date guide to conferences and events around the world that feature or include the history of mathematics and its use in teaching.

For more details, see our Guidelines for Authors at

<https://www.maa.org/press/periodicals/convergence/guidelines-for-convergence-authors>

New Journal *Euleriana* Launches

Euleriana, an open access eJournal focused on Leonhard Euler and Euler-related scholarship, is set to launch with its first issue in Winter 2021 (early February). *Euleriana* will be published twice annually, with many different types of content, including translations, historical and archival notes, book reviews, etc.

The definition of Euler-related scholarship includes Euler's own work (in mathematics, physics, and astronomy, etc.), mathematicians whose careers were roughly contemporaneous with Euler (Lagrange, Goldbach, certain Bernoullis, etc.), and the institutions and academies where he worked (in Basel, St. Petersburg, and Berlin). In addition, historical reflections on Euler's work as it appears in modern mathematics will be considered.

Managing Editors: Erik Tou (Univ of WA Tacoma), Chris Goff (Univ of the Pacific)

Editors: Rob Bradley (Adelphi Univ), Lawrence D'Antonio (Ramapo College of NJ), Cynthia Huffman (Pittsburg State Univ), Dominic Klyve (Central WA Univ), Michael Saclolo (St. Edward's Univ).



A feature of the HOM SIGMAA Newsletter is a review of a museum or library with an exhibit or collection related to the History of Mathematics. If you would like to submit an article for HOM on Display, please send it to Cynthia Huffman at cjhuffman@pittstate.edu. The HOM on Display for this issue is a look at some History of Math found in Florence, Italy.

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THE GARDEN OF ARCHIMEDES

by Dr. Cynthia Huffman

Pittsburg State University

If at some time after travel restrictions have been lifted, you are spending time in Florence, Italy, there are the customary amazing sites to see, such as the Duomo with Bell Tower and Baptistery, Michelangelo's David, and the Ponte Vecchio, to name a few. Hidden off the beaten path is a museum dedicated to mathematics called "The Garden of Archimedes."

The museum opens its doors for school field trips, special groups, and the general public. I had the opportunity to visit The Garden of Archimedes while on the 2012 MAA Study Tour to Italy. We discovered firsthand that it is literally off the beaten path, when our bus driver had difficulties locating it.

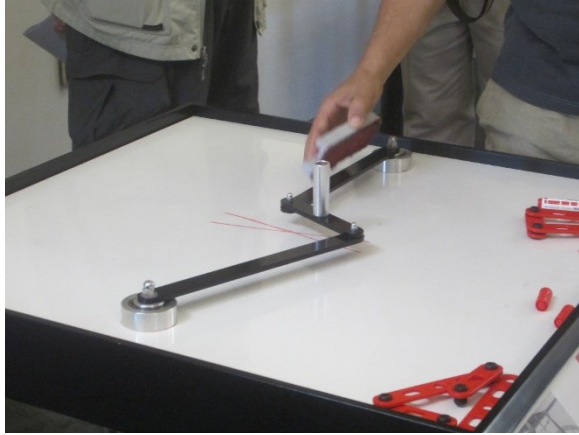
One enters the museum via an interesting staircase.



Herb Kasube, Trudy and Joel Cunningham climbing the stairs.

One of the special features of the museum is its collection of hands-on displays. There is an area dedicated to devices that are used to draw a line segment or to move with linear motion, in an exhibit titled "[Beyond Compasses: the geometry of curves.](#)" Pictures of the mechanisms of Chebyshev (left) and Peaucellier (right) can be seen at the top of the next page.

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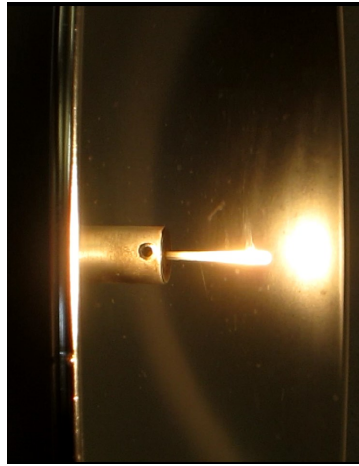
There are also displays about drawing various curves such as an Archimedean spiral and a cycloid. The picture below shows the demonstration of a device that draws an ellipse based on the fact that an ellipse is a conic section.



MAA Study Tour members Bill Halm, Ron Rosier, Dave Smith, Jackie Dewar, and Herb Kasube

Continued on next page →

Other interactive activities and experiments include lighting a match from a distance with a lightbulb and a pair of parabolic mirrors, as well as raising water using an Archimedean screw. See the pictures below. To watch a short video of the match being lit, visit <https://youtu.be/16SgktMFMjk> . A short video of the Archimedean screw is at https://youtu.be/k_DinN50XPk .



For rare book lovers, there is a large display case which contains such treasures as Pacioli's *Summa* and *De Divina Proportione*, Fibonacci's *Liber Abacci*, *Flos*, *Practica Geometriae*, and *Liber Quadratorum*, *Algorismus* by Pietro Paolo Muscarello da Nova, *Pratica d'Arismetrica* and *Trattato d'Abaco* by Benedetto da Firenze, and *Trattato d'Abaco* by Piero della Francesca.

Due to the global pandemic, the Garden of Archimedes is temporarily closed. For more information, visit the museum's webpage at http://web.math.unifi.it/archimede/archimede_NEW_inglese/.



The author posing with Fibonacci at The Garden of Archimedes.

Congratulations to **Ken Monks** (Front Range Community College - Boulder County), one of three winners of this year's **Henry L. Alder Award**, for distinguished teaching by a beginning mathematics faculty member. Part of Ken's citation reads: "A particularly unique addition to his curriculum is the use of history of mathematics to add context to the material. At the invitation of the PIs of the NSF-funded TRansforming Instruction in Undergraduate Mathematics Education via Primary Historical Sources (TRIUMPHS) project, Dr. Monks has authored three "primary source projects" (PSPs) that offer students the general benefits of inquiry-based learning within this unique historical approach. These time-intensive approaches truly stretch students outside their traditional math comfort zone." (If you're interested in looking at Ken's three PSPs, check them out at the [TRIUMPHS website](#). By the way, a fourth is due out this fall!)



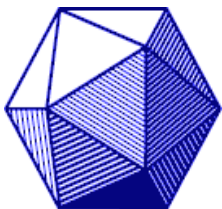
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Congratulations to HOM SIGMAA members Ezra (Bud) Brown, Virginia Tech, and Shawnee McMurrin, California State University, San Bernardino, for being presented with the 2020 MAA Certificate for Meritorious Service!!! Established in 1983, The Certificate of Meritorious Service is to be presented for service at the national level or for service to a Section of the Association.



Left: Ezra (Bud) Brown, Virginia Tech

Below: Shawnee McMurrin, California State University, San Bernardino



2020 HOM SIGMAA Executive Committee

Chair: Amy Shell-Gellasch, Eastern Michigan University

Email: ashellge@emich.edu

Secretary/Treasurer: Cynthia Huffman, Pittsburg State University

Email: cjhuffman@pittstate.edu

Program Coordinator: Toke Knudsen, SUNY Oneonta

Email: toke.knudsen@oneonta.edu

Electronic Resources Coordinator: Andrew Perry, Springfield College

Email: aperry@springfieldcollege.edu

Prize Coordinator: Amy Shell-Gellasch, Eastern Michigan University

Email: ashellge@emich.edu

Past Chair: Daniel Otero, Xavier University

Email: otero@xavier.edu

The History of Mathematics Special Interest Group of the Mathematical Association of America

is pleased to announce its eighteenth annual

Student Paper Contest in the History of Mathematics

This contest is open to all undergraduate students^π

Papers will be judged by a panel of specialists for content, originality, and presentation. Typically first and second place winners are chosen.

Submission Guidelines

- Topics can be drawn from any field of mathematics.
- Papers can address a single person or topic, or be an historical survey of a topic or school of thought.
- Submissions should be approximately 5000 words (approximately 12 double-spaced 12 pt. pages) in length with font that is easy to read.
- Submissions should be in a single PDF file, including a title page with title of paper, the author, school, and complete contact information.
- Papers should include a full citation list.
- Papers should not draw too heavily from web sources.[§]
- Students submitting a paper need not be currently taking a history of mathematics course.
- All papers should be single-authored.
- Eligible papers are those written in the past year and while the author was an undergraduate.

Submission Deadline: Wednesday, March 31, 2021

Results will be announced via email
and on the HOM SIGMAA website in May.

Submissions and questions can be directed to
Dr. Amy Shell-Gellasch ashellge@emich.edu

^π Students who have graduated less than a year ago but wrote their paper while still an undergraduate may also participate. Graduate and high school students may also submit for an honorable mention.

[§] Web sources that give access to print material, such as JSTOR, are completely acceptable.