

# BULLETIN

"An organization of people interested in the Natural Sciences"



March 2025; Vol. 79, #2

## President's Message

### The Rochester Academy of Science Annual Meeting & Spring Lecture is Thursday, April 22, 7:00 p.m.

This live meeting (with Zoom remote) will be at the Rochester Institute of Technology Chester F. Carlson Center for Imaging Science, Room 1125, 54 Lomb Memorial Drive, Rochester, NY 14623. We will publish directions in the April *RAS Bulletin*. After a brief introduction and report, the Board of Directors election will conclude the business meeting. A ballot is included on this page and as a PDF on the RAS website. Please show us your support by mailing your completed ballot to RAS, P.O. Box 92642, Rochester NY 14692-0642. You will also be able to vote at the meeting through the Zoom Chat function. **You must have renewed your membership by March 31<sup>st</sup> to vote.** We cannot take email ballots but will send proxy directions next month.

\* \* \*

### Spring Lecture

The Spring Lecture will follow the business meeting at 7:30PM. Our

speaker is Dr. Alexander Smith, professor of Anthropology at SUNY Brockport. He is head of our RAS Anthropology Section. He leads the Frost Town Archaeology project in partnership with the Rochester Museum & Science Center. This project is dedicated to the excavation and better understanding of this abandoned mill town, located on what is now the Cumming Nature Center in South Bristol, NY. If time permits, he will also discuss his excavations of iron-age sites on Mediterranean islands such as Mallorca and Menorca.

Frost Town was founded in 1792 and was one of the earliest Euro-American settlements in western New York after the American Revolutionary War ended. Canandaigua, 21 miles to the northeast, was settled in late 1780s on the remains of a Onödowá'ga:' (Seneca) village *Tganöddä:gwëh* destroyed in 1779. Rochesterville, now Rochester, was not settled until 1811.

\* \* \*

### Frost Town Timeline

1775-1783 American Revolution  
1779 Sullivan Expedition against the

Haudenosaunee. Washington ordered Maj. Gen. John Sullivan to invade the territory of the Six Nations Confederation with a mandate to effect the "total destruction and devastation" of the Haudenosaunee settlements. Over 40 villages were destroyed with all their crops.

1783 Treaty of Paris.

1788 Phelps-Gorham Purchase from the Seneca to settle the lands west of Seneca Lake to the Genessee River watershed.

1791 Gamaliel Wilder—who was a soldier on the Sullivan Expedition and knew the land—purchased Lot #08.

1792 Wilder cut a path to the old growth forests around Briggs Creek and set up the area's first water-powered sawmill, establishing the first (or near first) industrial logging village in Western New York and Finger Lakes region.

1810s Brothers Jonathan and Jacob Frost built a second sawmill on Briggs Creek and purchased Wilder's sawmill, with the settlement becoming known as Frost Town.

\* \* \*

### ROCHESTER ACADEMY OF SCIENCE BALLOT FOR JUNE 2025 – MAY 2026 OFFICERS

OFFICE	NAME	✓	WRITE-IN CANDIDATE
President:	Michael Grenier	<input type="checkbox"/>	
Vice President:	Jeff Gutterman, P.E.	<input type="checkbox"/>	
Treasurer:	Tim Tatakis, Ph.D.	<input type="checkbox"/>	
Secretary:	Helen Downs Haller, Ph.D.	<input type="checkbox"/>	
Member, Board of Directors (2025-2028)	Anthony Golumbeck	<input type="checkbox"/>	
Member, Board of Directors (2025-2028)	Robert Crumrine	<input type="checkbox"/>	



Michael Grenier, RAS President

## Announcement of the 2024-2025 Undergraduate Student Research Grant Awards:

Our mission was to review all submitted applications, grade them on the quality of the request writing, and to award significant grants. The maximum amount of any grant is \$750. Last year the RAS Grants Committee awarded a total of \$4,762 to nine applicants. This year \$5,750 was awarded for fifteen research projects.

First place: **Eva Reilly**, *Transformation and Expression of Diadenosine Polyphosphatases from Mycobacterium leprae*, Award: \$750 plus \$50 unrestricted to the student. Sponsor: Dr. Suzanne O'Handley.

**Emma Lenchenkova**, *Family History of Alzheimer's Disease and Biobehavioral Responses in Young Adults*, Award: \$600. Sponsor: Dr. Elena Fedorovskaya. This award includes the Life Sciences Section Merit Award.

**Emma Thompson**, *Influence of Rising Temperatures and Infection on Salamander Microbial Composition*, Award: \$600. Sponsor: Dr. Elle Barnes.

**Delila MacLeod**, *Characterization of the Nudix Diadenosine Polyphosphatases from Mycobacterium tuberculosis*, Award: \$600. Sponsor: Dr. Suzanne O'Handley.

**Mia Kushner**, *Bacterial Extracellular Vesicles as a Diagnostic Tool for Sepsis*, Award: \$500. Sponsor: Dr. Lea Vacca Michel.

**Catherine Cullinane**, *Phenotypic Studies of a Phosphoglycolate Phosphatase in Staphylococcus aureus*, Award: \$500. Sponsor: Dr. Suzanne O'Handley.

**Nguyen Minh Khoi Tran**, *Photochemistry of Tetrabromopyrrole in water*, Award: \$300. Sponsor: Dr. Nicholas Pflug.

**Gail M. Hooke**, *Polybutylene Succinate Copolyesters with Tunable Biodegradability*, Award: \$300. Sponsor: Dr. Massoud J. Miri.

**Alex Szczepankiewicz**, *Haloperoxidase Biomimicry Toward the Generation of Electrophilic Species Utilizing Xerogel-Based Transition Metal Catalysts*, Award: \$250. Sponsor: Dr. Corey A. Damon.

**Jaclyn Conley**, *Targeted Bacteriochlorin Dyes for Photodynamic Therapy of Breast Cancer*, Award: \$250. Sponsor: Dr. Hans Schmitthenner.

**Alana Modugno**, *Benthic Diatom Community Dynamics in Seneca-Keuka Lake Watershed*, Award: \$250. Sponsor: Gylla Macgregor.

**Gabriella Redman**, *Dual Modal Targeted Probes for Fluorescent Imaging & Photodynamic Therapy of Breast Cancer*, Award: \$200. Sponsor: Dr. Hans Schmitthenner.

**David Lusignan**, *Ammonia Capture and Storage Using Dendrimer-Impregnated Metal-Organic Frameworks*, Award: \$200. Sponsor: Dr. Jian Liu.

**Abigail Garvey**, *Cellular Role of par-1 in the Development of the Caenorhabditis elegans Male Tail*, Award: \$200. Sponsor: Dr. Daryl Hurd.

**Clare vanLieshout**, *Impact of habitat fragmentation on the effective population size of Eastern redback salamanders, Plethodon cinereus*, Award: \$200. Sponsor: Dr. William J. Edwards.

The money for the grants this year was from the Katherine H. Jensen Memorial Research Grant Fund, the Thomas F. & Annie A. and Grace Murray Memorial Research Grant Funds, and the Student Grants Endowment Fund, with the addition of \$250 from Life Sciences Section, and \$1,000 in member donations.

# Events for March 2025

## March 3 Mon: Anthropology

There is a talk on March 3rd at 7:00 pm at the Spiegel Center in Pittsford by Dr. Ann Morton. *Discovering Hidden History on Grand Island*. It is free and open to the public. Sponsored by the NYSAA Morgan Chapter.

## March 4 Tues: Fossil Members Meeting

7:00 – 8:30 p.m. Pittsford Community Center, room 019, 35 Lincoln Avenue Pittsford, NY 14534. Training session for local Science Olympiad participants. Section members will be displaying multiple examples of nearly 100 different types of fossils. If you want to examine a wide variety of specimens and update your general fossil knowledge, this is the meeting for you. Set-up at 6:30pm. Contact: Dan Krisher [DLKFossil@gmail.com](mailto:DLKFossil@gmail.com) or (585) 698-3147.

## March 5 Weds: ASRAS Board of Directors Meeting

7:00 pm - 9:00 pm. Members welcome to attend. Contact Tony Golumbeck for details.

## March 7 Fri: Astronomy Monthly Meeting

7:30 pm - 9:30 pm  
In-person at RIT Carlson Building Room 1125 (simulcast on zoom)  
Come as early as 7 pm to socialize.  
Speaker: Jim Porter, NASA Ambassador. Topic: *Laser Comm*.

## March 12 Wed: Herbarium

12:00 p.m. - 3:00 p.m. The Life Sciences section will hold a workshop at the RAS Herbarium,

located in the basement of the Rochester Museum and Science Center (RMSC). We will be continuing to organize plant specimens in preparation for digitizing the collection. If you plan to attend, please send an RSVP to [rasherbarium@gmail.com](mailto:rasherbarium@gmail.com). At RMSC go to the front desk to meet other participants. For more information, contact herbarium curators, Tim Tatakis and Steven Daniel, by emailing [rasherbarium@gmail.com](mailto:rasherbarium@gmail.com)

## March 16 Sun: ASRAS Farash Center Open House

Noon – 3:00pm. See <https://www.rochesterastronomy.org/our-observing-site-at-the-farash-center/>

## March 19 Wed: RAS Board Meeting

7:00 p.m. - 9 p.m. Pittsford Community Center, room 207, 35 Lincoln Ave, Pittsford. Zoom option available. For details, contact Michael Grenier at [mgrenier@frontiernet.net](mailto:mgrenier@frontiernet.net).

## March 25 Tues: Mineral Member Zoom Meeting

7:30 p.m. – 9:00 p.m. Virtual meeting on Zoom. Howard Heitner presents - *Minerals in 19th Century America: Scientists, Dealers, and Collectors*. Members will receive more information in March. Contact: Jutta Dudley, [juttasd@aol.com](mailto:juttasd@aol.com)

## March 26 Wed: ASRAS Astronomy Forum

7:30 pm – 9:00 pm. Jim Bader, RMSC Planetarium Director, will discuss the topic: *How to talk to people about science*. As with most Forums, it will be geared towards a beginning or less experienced audience. All are welcome to attend. Contact Craig Kaplan for zoom link.

## March 27 Thurs: Anthropology

We have an archaeology talk on March 27th at the Memorial Art Gallery at 7:00 pm featuring Dr. Mark Aldenderfer of UC Merced. *The deep prehistory of the human presence in the world's high mountains and plateaus*. It is free and open to the public. Sponsored by the AIA Rochester.

## March 29 Sat: ASRAS Messier Marathon

Dusk till last person leaves – weather permitting. The Marian and Max Farash Center for Observational Astronomy consists of an education center, Ionia NY.

-----

## Saturdays: RMSC Strassenburgh Planetarium:

ASRAS will operate the telescope at the Strassenburgh Planetarium on mostly clear Saturday nights, dusk until 10:30. For more information, contact: Jim Seidewand at (585) 703-9876. See also <https://www.rochesterastronomy.org/the-strassenburgh-scope/>

\*\*\*

# The Paleontological Research Institution: Past, Present and Future

Daniel Krisher

In 1932, Cornell geology professor Gilbert Harris was nearing the end of his 40-year career as a professor at the University. Over the years he had established a reputation as a petroleum geologist and mollusk researcher, amassed a significant paleontological collection and had overseen the publication of a personally funded scientific journal.

As he approached retirement, he became increasingly concerned about the future of his research and collections. Professor Harris first approached the University about providing space and resources for the care of his life's work but was unable to secure backing from the University.

At this point Professor Harris made the decision to create an independent institution which would provide a home for his life's work as well as serve as a facility where researchers without any other institutional home could come and conduct research. On June 28, 1932, Professor Harris and a small group of friends and supporters founded what he called the Paleontological Research Institute.

Professor Harris served as Director of the institution he founded for many years and, while funding was always an issue, the institute continued to grow in both size and reputation. In 1968, under the leadership of its second Director, Katherine Palmer, the institute moved to its present location on the west side of the lake just north of Ithaca. In 2003 the institute opened the Museum of the Earth and the Cayuga Nature Center became part of PRI in 2013. The institution has continued to expand its role in the areas of paleontological and earth science research and public outreach. It's 7 million plus specimens comprise a world-renowned collection of Cenozoic mollusks as well as a rapidly expanding

collection of the Devonian fauna of New York.



*Figure 1: PRI Outside View [PRI]*

Like most nonprofits, PRI's business model has derived its funding from a mix of admissions, sales, grants and philanthropy. Since admissions and sales need to be kept affordable to ensure public accessibility and grants are always volatile, philanthropy is critical to the functioning of PRI.

Over the past couple of years, several long-term supporters of PRI have found themselves unable to continue their support at past levels. In the face of the funding shortfall PRI has undertaken numerous actions to rebalance the budget including staff reductions, reduced operating hours in the Museum of the Earth and the Cayuga Nature Center and a pause or cessation in some of its past

activities. These actions have reduced the funding issues but further reductions in PRI's activities would threaten its ability to fulfill its primary mission.

As the possibilities of decreased funding outflow have been largely maxed out the need for an increase in funding inflow in the form of philanthropy is critical. If you have thought of becoming a member of PRI in the past but just never got around to it the income generated by your membership, while small, is still critical to PRI's future. If you are already a member, consider the possibility of a donation as donations of any size are tremendously helpful.

The Paleontological Research Institution is a unique resource and its loss or further reduction in its function would represent an irreplaceable loss to both western New York and the scientific communities at large.

If you would like further information or would like to lend your support to PRI please visit <https://www.priweb.org/>.

\*\*\*



*Figure 2: PRI Lobby [PRI]*



A buttongrass field (*Gymnoschoenus sphaerocephalus*), Cradle Mountain, Tasmania, Australia.” Photo: R. Crumrine, 29 Jan 2025. For more information see:

<https://nre.tas.gov.au/conservation/conservation-on-private-land/bush-information-management/identify-your-bush-type/bush-that-is-treeless/buttongrass-moorland>



Alpha Centauri and the Southern Cross (Crux) from Hobart, Tasmania, Australia. Alpha Centauri is to the lower right. Photo: R. Crumrine, 1 Feb 2025.

## **Rochester Research in Review**

**New study reveals Neanderthals experienced population crash ... A new study suggests that Neanderthals experienced a dramatic loss of genetic variation ...**

February 25, 2025; Source: Binghamton University

<https://www.sciencedaily.com/releases/2025/02/250225121653.htm>

**Backyard poultry face bird flu risk when migrating mallards stop to rest**

February 24, 2025 Cornell University

<https://www.nature.com/articles/s41598-025-89827-y>

**Underwater mics and machine learning aid right whale conservation**

February 21, 2025 Cornell University

<https://www.int-res.com/abstracts/esr/v56/p101-115/>

**Does planetary evolution favor human-like life? Study ups odds we're not alone**

February 14, 2025 Adam Frank of the University of Rochester.

<https://www.sciencedaily.com/releases/2025/02/250214225042.htm>

**The truth may hurt, but for couples, it's worth it**

February 5, 2025

University of Rochester

<https://www.sciencedaily.com/releases/2025/02/250205194441.htm>

**What's the best way to organize people to generate ideas? New research offers insight**

Is it better to work in large groups? Smaller ones? With other people who are similar or different? New research offers insight into these questions -- and some of the results are not what you'd expect.

February 4, 2025 Binghamton University

<https://www.sciencedaily.com/releases/2025/02/250204132135.htm>

**How does the atmosphere affect ocean weather?**

January 31, 2025 University of Rochester

<https://www.sciencedaily.com/releases/2025/01/250131194421.htm>

**Scientists develop ultra-thin absorbers with record-breaking ...**

Jan 26, 2025 Syracuse University

<https://www.sciencedaily.com/releases/2025/01/250127123720.htm>

**Biotin may shield brain from manganese-induced damage, study finds**

January 21, 2025 University of Rochester Medical Center

<https://www.sciencedaily.com/releases/2025/01/250121162105.htm>

# 2025 Rochester Academy of Science, Inc.

## Membership Form

### Mail to:

R.A.S.

Att'n: Treasurer

P O Box 92642

Rochester, NY 14692-0642

[ ] New

[ ] Renewal

Name \_\_\_\_\_ E-mail \_\_\_\_\_

Street \_\_\_\_\_ Phone \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

For your convenience, please pay your dues to the R.A.S. and its sections with a single check. **Make check payable to: Rochester Academy of Science** or pay at <https://rasny.org/how-to-join> (bottom of page) with PayPal, Credit or Debit Card.

CIRCLE the amount you are paying for an Academy category (shaded column) and for the Section(s) in which you wish membership.

## Membership Categories

*R.A.S. dues are a prerequisite for section membership*

	Rochester Academy of Science	Anthropology Section	Astronomy Section	Life Sciences Section	Fossil Section	Mineral Section	Total
Member (Individual over age 18)	\$10.00	\$2.00	\$25.00	\$2.00	\$10.00	\$5.00	
Family (Including students to age 18)	\$15.00	\$3.00	\$30.00	\$3.00	\$10.00	\$6.00	
Student (Through full-time undergrad.)	\$5.00	\$1.00	\$5.00	\$1.00	\$5.00	\$2.00	
Supporting (Individual or family)	\$20.00	*****	\$40.00	\$10.00	\$20.00	\$10.00	
Patron (Individual or family)	\$30.00	*****	\$50.00	\$20.00	\$30.00	\$20.00	
Life (Individual only)	\$200.00	*****	\$300.00	\$40.00	*****	*****	
Gift (Thank you!) Fill in amount <input type="checkbox"/>							
If you are away part of the year, please indicate the months:							

## ABOUT THE ACADEMY

The Rochester Academy of Science™, Inc. is an organization that has been promoting interest in the natural sciences since 1881, with special focus on the western New York state region. Membership is open to anyone with an interest in science. Dues are minimal for the Academy and are listed in the [membership application online](#). Each Section also sets dues to cover Section-related publications and mailings. We are recognized as a 501(c)3 organization.

For information, contact President Michael Grenier at (585) 671-8738 or by email [paleo@frontier.com](mailto:paleo@frontier.com).

The Academy Internet website is <http://www.rasny.org> or see us on Facebook at <https://www.facebook.com/Rochester-Academy-of-Science-792700687474549>.

This "BULLETIN" is produced monthly, except January, by the Rochester Academy of Science™. Submissions are due by the 10th of the previous month and may be emailed to the Bulletin Editor Robert Crumrine at [bob.crumrine@gmail.com](mailto:bob.crumrine@gmail.com).

The Academy postal address is P.O. Box 92642, Rochester NY 14692-0642.

## ROCHESTER ACADEMY OF SCIENCE CONTACTS

(585) home//cell

<a href="#">Michael Grenier</a>	President	671-8738
<a href="#">Jeff Gutterman</a>	Vice President	392-8299//748-2272
<a href="#">Helen D. Haller</a>	Secretary	387-9570
<a href="#">Tim Tatakis</a>	Treasurer	497-7038
<a href="#">Jutta Dudley</a>	Past President	385-2368
<a href="#">Tony Golumbeck</a>	Director '25	(315) 789-4374
<a href="#">Robert Crumrine</a>	Director '25	813-4157
<a href="#">Karen Wolf</a>	Director '26	670-9709
<a href="#">Douglas Kostyk</a>	Director '26	943-3419
<a href="#">Michael Richmond</a>	Director '27	586-7432
<a href="#">Dan Krisher</a>	Director '27	698-3147
<a href="#">Alex Smith</a>	Anthropology	750-3329
<a href="#">David Bishop</a>	Astronomy	455-5715
<a href="#">Lawrence Hirsch</a>	Life Sciences	512-5672
<a href="#">Tim Tatakis</a> and <a href="#">Steven Daniel</a>	Herbarium	497-7038
<a href="#">Dan Krisher</a>	Fossil	698-3147
<a href="#">Stephen Busschaert</a>	Mineral	351-7633
<a href="#">Robert Crumrine</a>	Bulletin Editor	813-4157