

BULLETIN



"An organization of people interested in the Natural Sciences"

February 2026; Vol. 80, #1

President's Message

Best Wishes for the New Year!

The Academy is thriving and every section has interesting programs in store for you. No matter what section(s) you belong to, you can always attend a function of another section. If you are an ASRAS member, come to a Fossil meeting and lecture. If you're in Life Sciences, go to an Astronomy talk. If you are into minerals, attend an archeology talk. Expand your horizons and get the most out of the new year.

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Speakers Program at the Jewish Community Center

Here's a great New Year's challenge. If you have ever given a talk on a scientific subject, dust it off and come be part of our RAS speakers program at the Jewish Community Center, 1200 Edgewood Ave, Rochester, NY 14618. This is their "Sip and Science" lecture series for their 55+ community (coffee is served). We give a lecture there once a month—day and time of your choosing, as long as it's between 10 a.m. and 4 p.m. We do daytime programs as the attendees are elderly and generally shouldn't be driving at night.

Let me know if you would like to help with this program mgrenier@frontiernet.net.

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Undergrad Student Grant Program Results Announced

Our Undergraduate Student Research Grant Review Committee recently selected eleven students to receive research grants from the Rochester Academy of Science based

on the quality of research and presentation. This year, we awarded the largest amount ever awarded, \$6200, thanks to the generosity of several members. This important program encourages the scientists of the future currently pursuing undergraduate degrees.

Each September, we send our Request for Proposals to the sciences faculty at colleges and universities throughout Upstate NY. Undergraduate students prepare their applications with some guidance from advisors but must do all the writing themselves. Submissions had to be in to us by December 19. Then our Student Grants Awards Committee swung into action.

We have six reviewers on the committee. These are Michael Richmond, Karen Wolf, Geoff Lippa, Tim Tatakis, Jonathan Millen, and Zachary Murphy. Thank you to each of them for their diligence in completing this and representing the RAS to the students and schools.

All student proposals had identifying information stripped out by a member who had no part in the scoring or selection. The reviewers did not know who the student or advisor was, nor ethnicity nor sex, not even what school they attended. Further, reviewers recused themselves if they recognized the project.

Every proposal was scored by each reviewer, then the scores were combined and ranked. The reviewers reconsidered the results and came to concurrence. Award amounts were proposed, adjusted, and agreed upon. I believe that our reviewers have done an outstanding

job with this difficult task. If you think you would enjoy doing this next year, please contact Michael Grenier at mgrenier@frontiernet.net.

The money awarded principally comes from three endowments: 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.

Thanks to the Life Sciences Section and other members who made generous donations, we were able to make several additional awards.

These grants are intended to help undergraduate students to purchase expendable materials for use in their projects and for travel expenses to collect data but not for laboratory equipment.

The most highly rated proposal is given the *Dr. William L. Hallahan Award for Excellence in Grant Proposal Writing*, named in honor of our long serving but now retired Corporate Treasurer and chairman of the Student Grants Committee. In addition to a fully funded grant of up to \$750, the student also gets an unrestricted stipend of \$50 to be used as seen fit. Congratulations to this year's winner, **Ella Mahnke** at Rochester Institute of Technology. The full list of winners and their projects can be found inside.

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Michael Grenier, President RAS

Events for February 2026

Feb 1 Sun: Astronomy Open House

12:00 p.m. – 3:00 p.m. Farash Center. Contact Craig Kaplan at President@rochesterastronomy.org for details.

Feb 3 Tues: Fossil Members Meeting

7:00 p.m. – 9:00 p.m. The meeting will be held remotely via ZOOM and is open to all RAS Members and guests. Our featured speaker is Ashley Nicole Prow-Fleischer on “Effects of Cooling and Deoxygenation on Extinction During the Devonian Kellwasser Events.” The end-Devonian extinction was one of the five major extinction events recognized by scientists. Dr. Prow-Fleischer is a post-doctoral researcher at Stanford University. For meeting details and login info see the February *FossilLetter* or contact Michael Grenier at paleo@frontiernet.net.

Feb 4 Wed: Astronomy Board Meeting

7:00 p.m. – 9:00 p.m. Zoom only. Members welcome to attend. Contact Craig Kaplan at President@rochesterastronomy.org for details.

Feb 6 Fri: Astronomy Members Meeting

7:00 p.m. – 9:00 p.m. RIT, Carlson Building, Room 1125. The speaker will be Ryan Butler, RIT graduate student. Topic: “Cradles and Graves: Stars Before and After the Main Sequence”. Contact Craig Kaplan at President@rochesterastronomy.org for details.

Feb 11 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. 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.

Feb 18 Wed: RAS Board Meeting

7:00 p.m. - 9:00 p.m. Zoom only. For details, contact Michael Grenier at mgrenier@frontiernet.net.

Feb 24 Tues: Mineral Section Meeting

7:30 p.m. Zoom only. Steve Chamberlain, PhD will share with us the story of his exceptional mineral collection in “The Chamberlain Collection: Assembly, Enjoyment, Dispersal.” Virtual guests welcome. Contact Jutta Dudley, juttasd@aol.com

Feb 25 Wed: Astronomy Forum

7:30 p.m. – 9:00 p.m. Zoom only. Speaker: Luke Leege. Topic: “Astrophotography for Dummies like Me.” For details, contact Craig Kaplan at President@rochesterastronomy.org for details.

Feb 26 Thurs: Life Sciences Meeting

7:00 p.m. The meeting will be held remotely via ZOOM and is open to all RAS Members and guests. Our featured speaker is Dr. Poongodi Geetha-Loganathan of SUNY Oswego on the eggshells of Passeriformes, birds and student Margaret Chau on her study of pigmentation in eggshells. Zoom details will be sent to all Life Sciences members and to any others who request it. For details, contact Michael Grenier at mgrenier@frontiernet.net.

Letter from Paleontological Research Institution

Dear Rochester Academy of Science,

Thanks to an incredible outpouring of support, PRI is thrilled to announce that we have reached our 2025 funding goal, including paying our mortgage in full. The Institution and our Museum of the Earth will remain open and operating and serving our audiences! We want to extend our deepest gratitude and appreciation to all those near and far who answered the call to save this organization. Because of these efforts, PRI will continue its scientific and educational mission for future generations.

This accomplishment was the result of hundreds of gifts large and small, from individuals across PRI’s communities, from Ithaca, and New York State, and across the nation (and beyond); from scientists, educators, families, children, students, collectors, professors, and friends of friends; from people who care about climate change and evolution and tourism and science education and fossils and art and Earth science. This extraordinary show of solidarity has reminded us that PRI’s mission matters—not just to our local community, but to supporters across the country who believe in the power of science, education, and discovery. I reflected more deeply on what this moment means for us and the amazing people who made it possible in a new blog post: PRI’s Wonderful Life.

There is much still to be done. We are excited to now be able to plan for PRI’s future, and we look forward -- with renewed hope and a strengthened sense of purpose -- to sharing PRI’s plans for long-term financial sustainability in the months ahead. For now, we want to offer our sincere appreciation to every person who helped us achieve this milestone. Your generosity has safeguarded an irreplaceable institution, and we remain committed to honoring that trust every single day.

Thank you for standing with us, and for believing in what we do. We are endlessly grateful.

Sincerely,
Warren Allmon

Announcement of the 2025-2026 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 \$5,750 to fifteen applicants. This year \$6,200 was awarded for eleven research projects.

First place and winner of the *Dr. William L. Hallahan Award for Excellence in Grant Proposal Writing*: **Ella Mahnke**, *EEG Markers of Audiovisual Integration Impairments in Asymptomatic Individuals with a Concussion History*, Rochester Institute of Technology, Award: \$750 plus \$50 unrestricted to the student. Sponsor: Elena Fedorovskaya.

Rachel Kulp, *Optimization of Hydrogel–Mineral Bioinks for Constructing Synthetic Biocrusts*, Award: Full Funding of \$500, Rochester Institute of Technology, Sponsor: Elena Lopez Peredo.

Liam Brown, *Validation of a CRISPR-Engineered Fluorescent CD63-Tagged MSC Line for Extracellular Vesicle Tracking*, Award: \$700, Rochester Institute of Technology, Sponsor: Karin Wuertz-Kozak.

Isabella Valenta, *Investigating Nuclear Import in the Parasite Trypanosoma brucei*, Award: \$650, Nazareth University, Sponsor: Kaylen Ohira.

Isabella Sanchez Ortiz, *Assessing Aloe Vera-Derived Extracellular Vesicles in a Cellular Model of Lung Fibrosis*, Award: \$650, Rochester Institute of Technology, Sponsor: Karin Wuertz-Kozak.

Olivia Dibble, *Major Histocompatibility Complex Class I Knockout in Xenopus laevis*, Award: \$650, Nazareth University, Sponsor: Hristina Nedelkovska.

Ellen Shepard, *Targeting Bacterial Pal to Identify Novel Antibiotics*, Award: \$500, Rochester Institute of Technology, Sponsor: Lea Vacca Michel.

Ryan Jackson, *Ecoacoustics and Fourier Spectral Analysis of College Campus Soundscape*, Award: \$500, Hobart & William Smith Colleges, Sponsor: Ileana Dumitriu.

Erin Anson, *Constitutively Activating EPOR to Explore Models of Human Disease and Reduce Cell Culture Cost*, Award: \$500, St. John Fisher University, Sponsor: Zachary Murphy.

Alexander Bae, *Differential Desensitization of Interferon Type III Receptor in Human B Lymphocytes by USP18 Upon Stimulation by Interferon Type I and Type III*, Award: \$400, University of Rochester, Sponsor: Jennifer L. Barnas.

Ava Levinson, *Did Gradual Basin Infilling or Regional Climate Change Drive Succession at Zurich Bog In Arcadia, NY Over Last ~13,300 Years?*, Award: \$400, Hobart & William Smith Colleges, Sponsor: Tara Curtin. This award includes the Life Sciences Section Merit Award.

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 an additional grant from Life Sciences Section, and several member donations.

Alvin L. Ureles MD, RAS Fellow
1921-2025



Al Ureles at RocheStar Fest, 2001.
Photo credit: Bob Easterly (#1)

From Steve Fantress:

ASRAS said goodbye to one of its transformational members with the passing of Al Ureles on December 14, 2025 at the age of 104.

Dr. Alvin L. Ureles, a Professor of Medicine Emeritus at the University of Rochester, was instrumental in the establishment of the Astronomy Section's observing facility in Ionia.

Al had been a founding member of the Louis S. and Molly B. Wolk Foundation and of the Max and Marian Farash Foundation. He had come to know both families when his father, an orthodontist, treated them. Later, Al and Max Farash, a real estate developer, became friends, sharing a love of horseback riding. Max, after hearing Al talk about his love of astronomy, took Al on a ride through some land in Ionia that looked suitable for astronomical observing.

By May 1988 ASRAS announced an offer of a piece of land in Ionia, with details to follow, as well as a grant from the Wolk Foundation, arranged by Dr. Al, to cover the initial costs of legal fees, insurance, and other expenses related to acquiring the

property. In August, Al, Max Farash, and club members Matt Sinacola and Rick Albrecht met at the Ionia site to look over the area and decide the boundaries of the parcel that would be donated by Mr. Farash to ASRAS in 1989. A Planning Committee of ASRAS members, chaired by Rick Albrecht, was formed to guide development. Dr. Al became Chair of the Assets Subcommittee, and went to work in pursuit of funding for buildings on the site.

From Al's RAS Fellow Nomination:

Dr. Alvin L. Ureles has made the Rochester area his native environment for most of his life. Born here in 1921, he attributes his lifelong interest in the natural world to his grandfather. Encouraged from an early age to take notice and learn about all aspects of the natural world, Al involved himself with the Audubon Society at 14 and soon was introducing others to what he had discovered. Choosing to focus on medicine, Al graduated from the University of Michigan in 1942 and the University of Rochester School

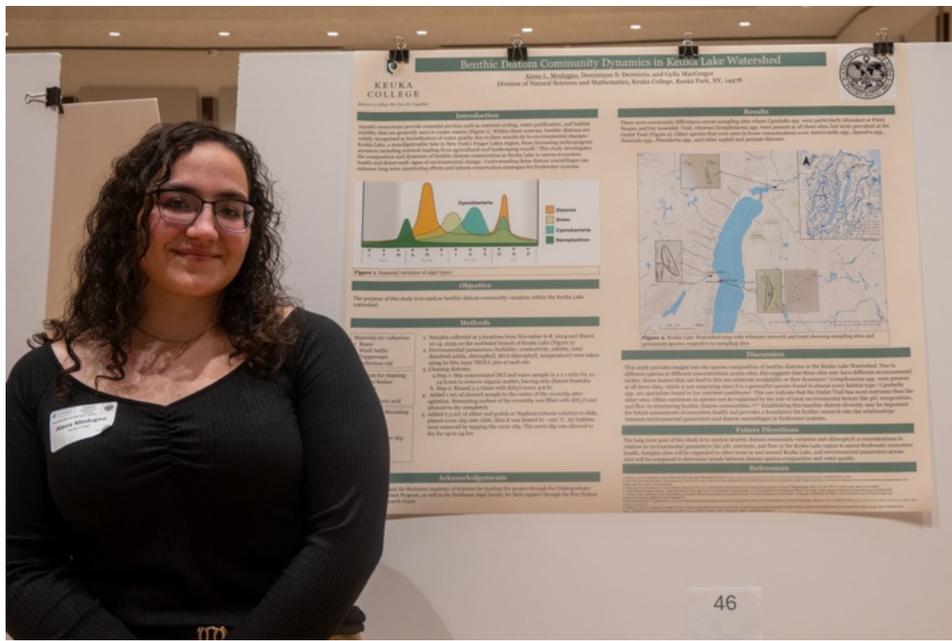
of Medicine and Dentistry in 1945. His postdoctoral training for the following six years took him to Beth Israel Hospital in Boston, Harvard Medical School and Tufts Medical School, followed by service in Korea for two years.

His accomplishments are numerous as a physician, researcher, teacher, consultant, administrator and author. Despite Al's seemingly unlimited energies devoted to his appointments and organization duties, in addition to raising three children with his wife, Frumel, he has contributed greatly to the RAS. Al can arguably be considered as the singular most important member regarding the acquisition and development of the Astronomy Section's observational facility, situated in the Town of West Bloomfield. His advice and diplomacy made it possible for the RAS to recognize opportunities and capitalize on them. Further, Al has provided much of the motivation which has led to successful educational programs conducted by the Astronomy Section.



Al Ureles and David Wolk, 2001. Photo credit: Bob Easterly.

RAS 2025 Student Grant Winners at the Geneseo Fall Paper Session

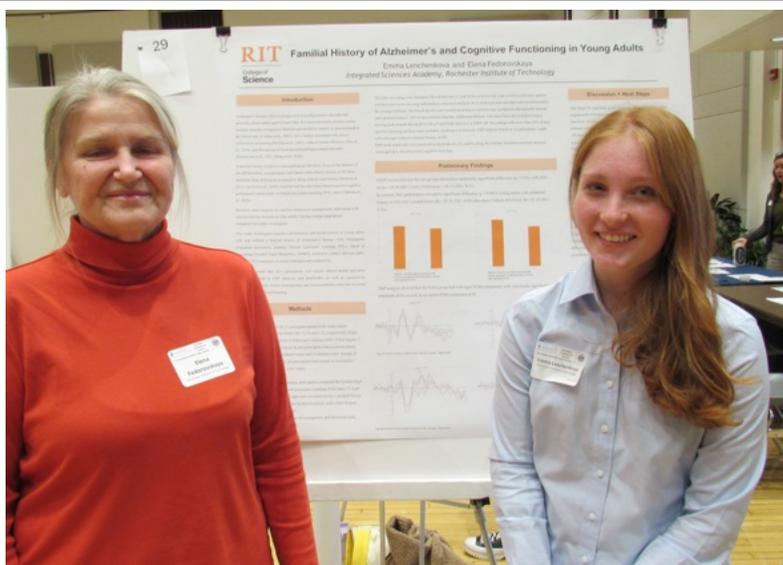


Keuka College researcher Alana Modugno with her poster “**Benthic Diatom Community Dynamics in Seneca-Keuka Lake Watersheds: Microbial Indicators of Freshwater Ecosystem Health**” at the recent Fall Paper Session in Geneseo. Her abstract is below. Photo: R. Crumrine.

Abstract: Diatoms are an important component of freshwater ecosystems, serving as primary producers and bioindicators of environmental change. Benthic diatoms are highly responsive to variations in water chemistry, making them valuable for assessing ecological

conditions. This study examines the composition and distribution of benthic diatom communities in Keuka Lake and surrounding streams, measuring pH and water hardness. Field sampling was conducted across multiple sites,

including Point Neamo, Assembly Trail Stream, and the Keuka Lake Outlet Trail, where water quality parameters, including dissolved oxygen, water hardness, pH, conductivity, and temperature, were measured. Epilithic algae were collected for chlorophyll-*a* and diatom community analysis. Diatom samples underwent acid digestion, slide preparation, and taxonomic identification using microscopy. At Point Neamo and Assembly Trail Stream, *Cymbella* was the dominant species, a finding consistent with its preference for oligotrophic environments. The Keuka Lake Outlet Trail community was dominated by *Fragilaria* and *Nitzschia*, a species typically found in eutrophic environments. This difference could be due to variations in nutrient inputs or legacy loads. The findings of this study provide insight into how benthic diatom communities respond to environmental gradients and anthropogenic influences in historically oligotrophic lakes. Given increasing concerns over eutrophication and algal blooms in freshwater systems, understanding diatom dynamics can aid in the development of monitoring programs and water management strategies.



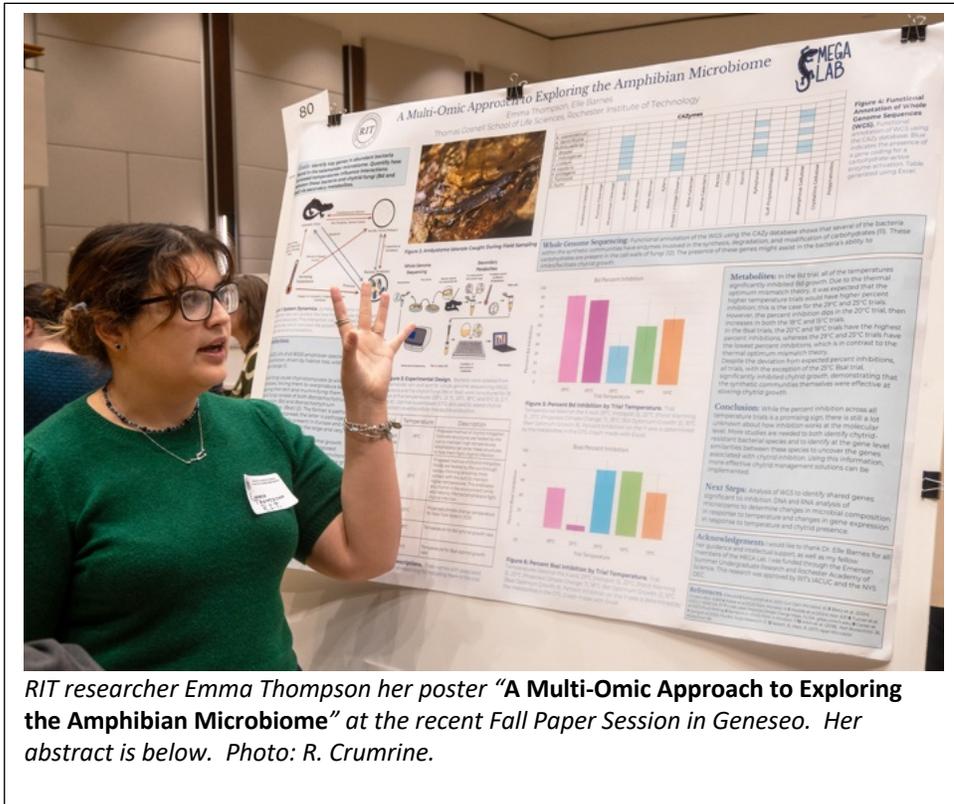
RIT researchers Elena Fedorovskaya (left) and Emma Lenchenkova at the recent RAS Fall Paper Session at Geneseo with their poster “**Family History of Alzheimer’s Disease and Biobehavioral Responses in Young Adults.**” Their abstract is to the right. Photo: R. Crumrine.

Abstract: Alzheimer’s Disease (AD) is a neurodegenerative disorder primarily occurring in individuals 65 and older and is the most common form of dementia. Though AD is often associated with a decline in memory, it is also linked to impairment in other cognitive processes such as inhibitory control. AD also results in slower information processing, as well as altered connectivity. Both the presence of the apolipoprotein ε4 (APOE4) allele and familial history of AD are known risk factors for AD. Both have also been linked to differences in brain structure in asymptomatic individuals. Familial history has been tied to poorer cognitive performance in associative learning tasks and reduced functional connectivity in healthy individuals. Other factors, such as cognitive reserve, have been (cont. next page)

considered protective factors against AD. Prior studies investigating the effects of AD familial history on cognitively healthy individuals have primarily focused on older populations. The purpose of our experiment is to compare cognitive performance and neural activity using EEG in young populations (18-30 years of age) with and without familial history of AD.

Participants will undergo a Symbol Digit Modalities Test to measure information processing speed, a Paired Associative Learning task, a Cognitive Reserve Test, and two tasks related to inhibitory control (Stroop and Go/No-Go), with the latter two performed while collecting EEG data. A buccal swab genetic test will also be conducted to check for the presence of the APOE4 allele. Our study

aims to determine if familial history of AD and/or APOE4 presence in young adults affects cognitive function, measured via task performance, and neural activity (specifically ERP latency and amplitude as well as effective connectivity) in inhibitory control tasks and resting-state EEG.



RIT researcher Emma Thompson her poster “A Multi-Omic Approach to Exploring the Amphibian Microbiome” at the recent Fall Paper Session in Geneseo. Her abstract is below. Photo: R. Crumrine.

Abstract: Amphibians are one of the most at-risk vertebrate groups on the planet. One of the biggest threats to amphibians is the wildlife disease chytridiomycosis. Chytridiomycosis is caused by chytrids, which are aquatic fungi. Both Bd (*Batrachochytrium dendrobatidis*) and Bsal

(*Batrachochytrium salamandivorans*) are pathogenic; however, Bd has caused decline in frogs, while Bsal has caused declines in salamander populations. Currently, amphibians have a natural defense, their skin microbiome, which could help to inhibit chytrid infection;

however, much is unknown about the genetic mechanisms of inhibition in these microbes. In addition to natural defenses, mitigation methods have been proposed to slow the spread of chytrid. These methods capitalize on the thermal optimum mismatch of the chytrid fungi and their hosts and include warming the host to help overcome the infection. While these methods have proven successful, they do not consider the microbiome, an essential part of defense against chytrid fungi. This study uncovers genes that may be involved in inhibition by using whole-genome sequencing. In addition, synthetic communities representative of the skin microbiome were co-cultured with chytrid fungi to determine inhibition rates and how temperature affects the microbiome. It was found that several of the inhibitory bacteria shared genes involved in utilizing carbohydrates found in the fungal cell wall. Synthetic communities inhibited Bd more regularly at higher temperatures, which was not shown in the Bsal trials. Next steps include 16S sequencing and qPCR to monitor the community composition of the microcosms and transcriptomics to determine which genes are up- or downregulated during chytrid infection.

RAS Member Images



Otomí indigenous site Cañada de la Virgen outside San Miguel de Allende, Mexico. This was a religious site active between about 540 and 1050 C.E., the endpoint of a migration path through the Seven Canyons that follow the Laja River. This is Complex A (House of the 13 skies), oriented so the priests could determine the start of the rainy season when it would be safe to plant crops. Complex B off to the left (House of the longest night) was oriented to determine the day of the winter solstice. This site was first open to the public in 2017 and has recently transferred from private to federal ownership. More information is available here: <https://lugares.inah.gob.mx/en/lugar-344>. Photo: R. Crumrine, Jan. 2026.



Horsehead Nebula. Burney Baron; January, 2025



Sun with jet, composite from video stream. Kevin Lyons; December, 2025.

Rochester Research in Review.

(These are Hot Links which when clicked lead to the press release on the Science Daily and other science websites.)

[Earth has been feeding the moon for billions of years. University of Rochester; January 5, 2026.](#)

[New catalyst makes plastic upcycling 10x more efficient than platinum. University of Rochester, January 24, 2026.](#)

[How Ozempic and Wegovy are quietly cutting America's food bills. Cornell University; January 12, 2026.](#)

[Scientists found the soil secret that doubles forest regrowth. Cornell University collaboration; January 15, 2026.](#)

[Scientists are building viruses from scratch to fight superbugs. Cornell University collaboration. January 21, 2026.](#)



Orion Nebula M42. Don Kubisa, December, 2025.

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.

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

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