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mainesciencefestival.org

Welcome to the long delayed 7th Maine Science Festival!

It is good to be back in person. When the 2020 Maine Science Festival was canceled right before kicking off, there were days in the months that followed where I found it hard to imagine when we would be back - if ever. One of the things that I did find solace in were the small but mighty teams I have the great good fortune to be a part of: the Maine Science Festival (Angela Smith and Kim Stewart), The Warming Sea (Lucas Richman, Maranda Bouchard, Niles Parker, Brian Hinrichs, and Chuck Carter), and most of all, the Maine Discovery Museum (Niles Parker, Autumn Allen, Trudi Plummer, Mason Pellerin, Tina DeMerchant, Maranda Bouchard, Monica Conary, and Kim Stewart). It is because these groups of people are so deeply dedicated to their work and each other that the Maine Science Festival is able to return this March.

There are others who have made this possible, including the researchers, scientists, engineers, and practitioners in Maine and beyond who have been working virtually nonstop for two years to help us get through this pandemic. I continue to remind myself that there is no shortage of inspiration to be found in the way people have relied on science of every kind to step up. I am also deeply grateful for the unrelenting support of our 2020 Sponsors. Every single one of them helped us get through a deeply difficult financial time, and we would not be celebrating Maine science in 2022 if they had not stood by us. Many, many thanks to them all.

As I've become fond of saying, the MSF is like an arts or music festival, but science! I think I can speak for my whole team and say that we are happy to return to doing what we love most: in-person events where we celebrate the science that happens in Maine with the people who do it. Throughout the five days of events, we'll have sessions that dive into the science of dogs, artificial intelligence, hibernation, beer, watersheds, history, sound, sleep, misinformation, science diplomacy, and so much more.

And because the return of a five-day event after a two-year pandemic hiatus isn't enough, we are also producing our first ever all-Maine headliner event: *The Warming Sea - an exploration of hope in the face of the climate crisis*. This has been far and away our most ambitious project to date and years in the making. In 2019, the MSF commissioned GRAMMY award winner Lucas Richman to write a symphonic piece about climate change in the Gulf of Maine, and on the evening of Saturday, March 19th, at 7pm, we explore climate change in Maine and have the world premiere of Lucas' piece, *The Warming Sea*. Please consider joining us at the Collins Center for the Arts; tickets are \$25/\$10 students. Full event details are at <https://www.thewarmingsea.me/tickets>.



Kate Dickerson,
Founder & Director,
Maine Science Festival



STATE OF MAINE
OFFICE OF THE GOVERNOR
1 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0001

Dear Friends,

Welcome to the Maine Science Festival!

As Governor, I am very excited that this unique, five-day celebration and exploration of science, technology, innovation, and the natural world is back this year, and with such a rich and robust set of experiences ready for students and parents alike.

The Maine Science Festival celebrates our state's extraordinary homegrown scientific talent. With the University of Maine now recognized as top-tier research university, myriad institutions across Maine contributing to groundbreaking research, and bold innovators pushing the boundaries of possibilities on the land, sea, and in the stars, our state is on the threshold of a new era of discovery.

Expanding our understanding and knowledge of science has perhaps never been more important. As we have seen throughout the pandemic and in our ongoing efforts against climate change, actions based on science, facts, and truth are vital to the health and future of our people and our planet.

On behalf of the people of Maine, I am pleased to welcome you to the Maine Science Festival, and I encourage you to enjoy the abundance of learning, curiosity, and Maine innovation that this celebration offers.

Have a great festival!

Sincerely,

A blue ink signature of Janet T. Mills, written in a cursive style.

Janet T. Mills
Governor



ANGUS S. KING, JR.
MAINE

March 16, 2022

It is my pleasure to add my voice to those welcoming you to the 2022 Maine Science Festival!

The Maine Science Festival is a true celebration of the great talent and potential found across our state. From premier research institutions to top scientists and dedicated educators, Maine is fortunate to have the resources and expertise to explore, discover, and teach the next generation about the importance of STEM learning. Over the next five days, you'll have a chance to participate in over 70 events and activities, each uniquely designed to expand your knowledge of the universe and learn more about its quirks. Whether your passion is robotics, marine life, or faraway galaxies, there is always more to discover. You will also have the opportunity to experience first-hand the innovative, exciting developments happening in our state each and every day.

We are living in exciting times where the harnessing of data and intelligence is propelling us to new heights. The Maine Science Festival provides an excellent opportunity to share these remarkable achievements with others in the Bangor community and throughout the state. I hope that the festival provides you ample opportunity to continue your lifetime of learning – and celebrate all that Maine has to offer.

Best Regards,

Angus S. King Jr.
United States Senator



Susan Collins

March 7, 2022

Ms. Kate Dickerson
Founder and Director
Maine Science Festival
74 Main Street
Bangor, ME 04401-6304

Dear Friends,

I am delighted to join in welcoming you to the 2022 Maine Science Festival.

It has been a long two years without this exciting event. I know you are all looking forward to the forums, workshops, talks, art exhibits, trivia, and hands-on activities that await. The Maine Science Festival offers a unique educational experience for Mainers to enjoy, and I am so pleased that it is taking place again, safely, this year.

Again, enjoy the festival, and best wishes for an interesting and informative celebration of science.

Sincerely,

A handwritten signature in blue ink that reads "Susan".

Susan M. Collins
United States Senator

SMC:cw

United States Senate

2162 RAYBURN HOUSE OFFICE BUILDING
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CHELLIE PINGREE
CONGRESS OF THE UNITED STATES
1ST DISTRICT, MAINE

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CONSERVATION AND FORESTRY

Dear Friends,

It is an honor to offer a few words to welcome you to the 2022 Maine Science Festival. I applaud Kate Dickerson and her colleagues for their efforts to organize the festival, not just this year, but annually since 2015 – with a brief interlude during the COVID-19 pandemic. With the more than 70 scheduled events and activities, Mainers will have the opportunity to learn about the science that is happening and being used in our communities. Through topics ranging from climate change, forestry, science diplomacy, space, and a history of science, it is hard not to be inspired by what scientists in our great state have to offer.

I was especially heartened to hear about this year's international collaboration for the headlining event, *The Warming Sea-An Exploration of Hope in the Face of the Climate Crisis*. As we continue to discern the increasing effects of climate change on our environment, it's more important than ever to come together as scientists, artists, and concerned members of the public to discuss progress and proposals that provide hope for a better, brighter, and greener future. I wish you all a safe and fun festival.

Sincerely,

Chellie Pingree
Member of Congress

2 PORTLAND FISH PIER, SUITE 304
PORTLAND, ME 04101
PHONE: 207-774-5019
FAX: 207-871-0720



1 SILVER STREET
WATERVILLE, ME 04902
PHONE: 207-873-5713
FAX: 207-873-5717



Jared Golden
Congress of the United States
2nd District of Maine

March 9, 2022

Dear Friends:

It is my pleasure to add my voice to welcome you to the 2022 Maine Science Festival!

After a two-year absence, the festival fills a need like never before. These two years have underscored the importance of science in our lives, as well as the need to have the work be carried out, and supported, locally.

The Maine Discovery Museum, the many volunteers and participants are part of a vital network that comes together to showcase the scientific work that is happening in Maine, as well as engaging the artistic community to provide a wonderful platform for exploration.

Thank you to all involved in putting this event together, I wish you every success! I look forward to hearing more about the diverse sessions and events.

With warmest regards,

A handwritten signature in blue ink that reads "Jared F. Golden".

Jared F. Golden
Member of Congress



BANGOR CITY COUNCIL

CITY OF BANGOR

The City of Bangor is once again thrilled and honored to host the Maine Science Festival!

As a community of thinkers, doers, dreamers, and explorers, Bangor is an ideal spot to celebrate the science, mathematics, engineering, and technology happening in Maine and beyond. The 2022 Festival will include over 70 events and activities. Through forums, shows, talks, art exhibits, and an array of workshops and hands-on activities for all ages, it brings Maine science to the public.

Something I'm particularly excited for this year is the resumption of Field Trip Day where approximately 600 7th and 8th graders from schools all over Maine explore the City of Bangor's Cross Insurance Center to attend workshops and sessions. Displays of practical science and engineering happening right here in Maine is a great opportunity for the youth of the Greater Bangor Region.

This year is also the long awaited premiere of the MSF commissioned symphonic piece, The Warming Sea, composed by GRAMMY award-winning Conductor & Composer, Lucas Richman. This headliner event is an exploration of hope in the face of the climate crisis.

The Maine Science Festival brings together Maine's premier, nationally renowned science organizations all in one place to showcase the remarkable work being done throughout the region and to spark the curiosity and imagination of all of its attendees. It leverages the talents of many local educators, business owners, students, and entrepreneurs, and provides a valuable platform for critical thinking, exploration, and idea.

Speaking on behalf of the City of Bangor and the people of Bangor, we are glad you are here. Bangor is a lively community from our exciting and vibrant Downtown area to the many natural resources and amenities such as our neighborhood parks, the City Forest, and the Orono Bog Walk. I hope you will take some time to explore our city while you're here.

Richard L. Fournier II
Council Chair

73 HARLOW STREET, BANGOR, ME 04401
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**Follow along with us! Visit us on
Facebook, Twitter, and Instagram.
#scienceiseverywhere
#MSF2022**

**To find out more visit:
mainesciencefestival.org**





GENERAL INFO & FAQ'S

Schedule Changes - Please note that all events are subject to change. Be sure to check our website or social media for the most up-to-date information.

Suitability key:

Families-  Middle School-  High School-  Adult- 

Within the program event pages we will do our best to note the best suited audience for programming provided. Please reference the graphics above and keep your eyes out for any special delineation like 21+ or 10+.

What is an MSF Showcase Event?



Maine Science Festival Showcase events are events that happen every year, with new presenters, activities, and experiences for festival goers. Showcase events are a mix of dynamic presentations, hands-on activities, and workshops that provide festival goers with a deep dive into the science happening in Maine. If you are able to attend only a few MSF events, the Showcase events are the ones to catch.

Where are the events?

All MSF events (*other than the headliner*) are held in, and around, Downtown Bangor. On Saturday, March 19th, all daytime events will be held at the Cross Insurance Center. The evening Headliner Event will be at the Collins Center for the Arts in Orono.



COVID PROTOCOLS

FESTIVAL-GOER CHECKLIST

Science is everywhere. Let's keep our community safe.

	Driver's License, Maine ID, passport	Mask meeting CDC guidelines	Your Vaccination Card	Your lab-verified test results*	Must attend w/adult
I'm vaccinated	✓	✓	✓		
Medically exempt from vaccination	✓	✓		✓	
Under 5 years old		✓		✓	✓
Under 18 years old		✓	✓		✓

* PCR w/in 48 hours or Rapid Test w/in 12 hours

Questions? (207) 262-7200



MORE INFO FOUND AT:

mainesciencefestival.org/covid-protocols

or here:



MSF SCIENCE TRIVIA NIGHT

Barrel Room, SeaDog Brewing Co., Bangor -

6:30-8pm



It's back! Join fellow trivia players for a night of science trivia created especially for the Maine Science Festival!

Event type: *trivia*

Moderator: Conor Thompson

WEDNESDAY, MARCH 16

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FIELD TRIP DAY

Cross Insurance Center

10:00am-1:00pm



THURSDAY, MARCH 17

Our Field Trip Day is for 7th & 8th grade students from schools in Maine, with the day's programming specifically designed for this age group. These events are limited to those schools who sign up in the preceding months. If you are interested in learning more about the 2023 Maine Science Festival Field Trip Day, or would like to be notified when sign-ups are open, please send an email to schools@mainesciencefestival.org. The Field Trip Day is provided free-of-charge to the schools who attend.

Presenting organizations: *University of Maine Artificial Intelligence Faculty, Bath Iron Works, Cianbro, Maine Maritime Academy, University of Southern Maine QC2 Collaboratory, University of Maine Maginnis Lab, University of Maine College of Engineering, The Calvineers, Pratt & Whitney, FMI, A Spirit Aerospace Company, ReVision Energy, Husson University*

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- Cooperative Extension
- The College of Engineering
- The College of Liberal Arts & Sciences

The 2022 Friday Field Trip Day is full. Sign-ups for 2023 will open up to schools in Fall 2022 Please note: the field trip usually fills up within three weeks. Schools who sign up after it is full are put on a wait list for the following year and have a chance to register before we open it up to everyone.

OUR CHANGING LANDSCAPE - EXHIBIT RECEPTION

*Norman Minsky Lecture Hall
Bangor Public Library
145 Harlow Street, Bangor, ME, 04401*

5:00-6:30pm



Please join us as we celebrate the artists who are taking part in the Our Changing Landscape exhibit. A short program will take place at 5:30.

Event type: *Art Exhibit - artist reception*

SCIENCE OF BEER AT SCIENCE ON TAP!

*Barrel Room
SeaDog Brewing Company
26 Front Street, Bangor, ME 04401*

7:30-9:00pm



Maine is known as one of the best places for craft brewing in the country, and is often at the top of the list of most breweries per capita. But how does a small micro or even nanobrewery work to ensure the quality of their beers from a chemistry perspective? Luci Benedict, an analytical chemist who is an Associate Professor at University of Southern Maine, founded the Quality Control Collaboratory (QC2) of the University of Southern Maine in 2016. QC2, in partnership with the Maine Brewers' Guild, provides laboratory analysis and testing for the craft beverage industry, while providing authentic lab experience and research opportunities for USM undergraduate students. Learn about why QC2 was needed, what they do, and how beer can train students for a wide variety of careers. Christie Mahaffey, who created and runs the Quality Control program at Foundation Brewing Company, will talk about why QC is so important to their work. And, Asa March-Sachs will talk about Orono Brewing Company's collaboration beer with Foundation Brewing - Hope Begins with Truth, created for *The Warming Sea*.

Event type: *Talk*

Moderator: *Niles Parker, Maine Discovery Museum*

Presenters: *Luci Benedict, QC2 Collaboratory, University of Southern Maine
Christie Mahaffey, Foundation Brewing Company
Asa Marsh-Sachs, Orono Brewing Company*

Great Collaboration protects the ocean

The UK-led Global Ocean Alliance of over 50 countries, is working to drive urgent action to safeguard the world's ocean and its wildlife. Just one example of how UK collaboration is tackling global issues. Join us and see things differently.



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BioME supports the life sciences community in Maine by organizing conferences, networking events, educational opportunities and advocating on behalf of our industry.

Learn how to get involved
biomaine.org

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Bioscience Association of Maine

TECH NIGHT, PRESENTED IN PARTNERSHIP WITH PROJECT>LOGIN

Maine Discovery Museum, 74 Main Street

4:30pm-7:00pm



Hey middle schoolers - want to find out about the world of computers and information technology? Learn, share, collaborate, and explore cutting-edge software and web-based tools. With workshops and hands-on activities the program is designed for maximum engagement!

Participants: please bring a tablet, laptop, or smart phone. If you need to borrow one, email us at hello@mainesciencefestival.org Workshop sign-ups happen at arrival/check-in. Drop-off event; pizza dinner provided for participants.

Sign up required: <https://bit.ly/MSF2022TechNight>

Presenting organizations: Project>Login, Siemens, 4-H, Eastern Maine Community College, Digitunity, Maine Math & Science Alliance

Event type: Middle school workshops, hands-on activities, sessions

MORE TECH NIGHT INFO ON NEXT PAGE!

TECH NIGHT CONTINUED

TECH NIGHT workshops:

Learn about Lighting Tech!

Presenter: Kerri Warms (Siemens)

This interactive talk will discuss how through updated lighting technology we can mitigate covid exposure, monitor HVAC run time, drastically reduce energy, and predict building patterns. With using a sensor that goes into the light fixture, it can detect heat patterns in a building which will read back to the building automation system, in turn controlling the use of mechanical equipment.

Explore MIT App Inventor with UMaine 4-H.

Presenters: Greg Kranich, Shelia Norman & Emily Mott

Do you love using apps? Come build one with Maine 4-H staff! Youth will be able to create an app using the MIT App Inventor platform. This easy-to-use block coding environment will allow participants to design a fully functional app for a smartphone. No coding experience is necessary, just bring your imagination!

3D Printing and Digital Fabrication.

Presenter: James Rutter

This interactive talk will include a live demonstration of a 3D printer, in which some artifacts (possibility science-specific or Maine-specific) are printed. Students will learn about this technology and be able to take away some small items printed on the machine.

Augmented Reality and Art

Presenters: Susannah Gordon-Messer & Nate Vlahakis (MMSA)

Have you ever wanted to bring your drawings to life? Join our hands-on session where we'll introduce you to Quiver, a free mobile Augmented Reality (AR) app that does just that!. We'll provide the crayons and the phones or feel free to bring your own. AR is changing the way we interact with our environment and each other - come learn how easy and fun a tool it can be.

The Digital Divide and Digitunity.

Presenter: Lindsay Ouelette

Learn about Digitunity and how the organization helps to close the digital divide by providing access to devices.

Microsoft HoloLens and Robot Demonstration

Presenter: Kendra Bird, Kathy Crise, Harold Casey (EMCC)

Come meet the Computer Technology faculty from Eastern Maine Community College, see some dancing robots, and try out the Microsoft HoloLens!

Dot, Dash, & Cue robots

Presenter: Project>Login

Come explore Dot, Dash & Cue robots and try programming the blaster accessories. Test your skills and launch the blasters!

5 MINUTE GENIUS™

Bangor Arts Exchange
193 Exchange Street, Bangor, ME

7:30pm-9:00pm



5 Minute Genius™ features short, sharp talks by some of Maine's finest scientists with 5 minutes per talk, plus 5 minutes for questions. Presenting a sprint through some of the most remarkable, cutting-edge science happening in Maine - you will feel like a genius in no time!

Presenters: Fayeza Ahmed, *University of Maine*, Danielle Levesque, *University of Maine*, Matt O'Malia, *OPAL*, Prayag Murawala, *MDI Biological Laboratory*, Kevin Postman, *Bigelow Laboratory for Ocean Sciences*, Mark Wagdy, *Solve Finance*, Ann Wells, *The Jackson Laboratory*

Moderator: Kate Dickerson, *Maine Science Festival*

Event type: *presentations*

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Maine Technology Institute

FRIDAY, MARCH 18

Families-  Middle School-  High School-  Adult- 

EXPLORATION STATIONS - ENGAGE, EXAMINE, EXPERIMENT

Cross Insurance Center Ballroom

9:00am-4:00pm



Roll-up your sleeves and learn through various hands-on activities from scientists and practitioners around the state. Make sure to stop in and visit each activity, and see how science is everywhere!

- **Bangor Public Library** - Explore the Library of Things!
- **Bangor Area Stormwater Group** - Explore the City of Bangor watershed!
- **Bath Iron Works** - AR Sandbox
- **Challenger Learning Center of Maine** - NASA engagement station: explore the moon and learn about the James Webb Telescope
- **Foundation Brewing Company** - Smart use of CO2 at a brewery
- **Girl Scouts of Maine** - Math in Nature
- **Great Pond Trust** - Exploration of species found in the Trust
- **Hurricane Island Center for Science and Leadership** - Explore fish anatomy and adaptations
- **Husson University/Rho Chi Honor Society Chapter** - Exploring pharmaceuticals
- **Maine Discovery Museum** - NiSE Net and Discovery Kit explorations
- **Roux Institute at Northeastern University** - Break into Tech
- **Versant Power Astronomy Center** - Cratering and Mars Sample Return

Event type: *Hands-on*

AMERICANS WHO TELL THE TRUTH - THE WARMING SEA/ CLIMATE CHANGE EDITION

Prefunction Area, Cross Insurance Center

9am-4pm



Robert Shetterly's *Americans Who Tell The Truth* portraits and narratives highlight citizens who courageously address issues of social, environmental, and economic fairness. This curated exhibit of *Americans Who Tell the Truth* portraits, inspired by the concluding anthem "Hope Begins with Truth" in composer Lucas Richman's MSF-commissioned symphonic piece, *The Warming Sea*, showcases Mainers and others who are speaking about climate change and our environment.

For more information, visit www.americnaswhotellthetruth.org

Presenter: *Americans Who Tell The Truth*

Event type: *Exhibit*

MISSING LINKS IN CLIMATE CHANGE

Meeting Rooms 1&2, Cross Insurance Center

9:30am-10:30am



Climate change is everywhere, and there are varied ways that communities and companies can reduce the emissions that are behind climate change. In this session, you'll hear about the importance of the 5 Rs - Refuse, Reduce, Reuse, Repair, Recycle to the environment as a way to combat climate change and reduce GHG emissions, with a deeper look at RNG from landfill gas and food waste.

Presenter: Shelby Wright, *Casella Waste Systems, Inc.*, Susanne Lee, George J. Mitchell Center for Sustainability Solutions, *University of Maine*

Moderator: Jonathan Sprague

Event type: *Forum*

SCIENCE CONVERSATION

Meeting Rooms 5&6, Cross Insurance Center

9:30am-11:30am



Come and be part of the Maine Contemporary Archives (MCA) project as it gathers community conversations about science. Either with a partner or on your own, come and share your thoughts about science using MCA's digital, audio story recording kit. Tell us what you think science is, what Maine science means to you, how you use science, where you see science in use - no observation or conversation about science is out of bounds. Did you see something astonishing or learn something new at the Maine Science Festival this year? Capture it as a recording that we will upload to the Bangor Area Archives Project website so we can check back on it in a few years to see how science has changed. Capture history today!

More information: *Maine Contemporary Archives* <https://ourmaine-archives.omeka.net/> • *Bangor Area Community Archives Project* <https://bangorpubliclibrary.omeka.net/>

Presenter: Bangor Public Library

Event type: *Workshop/Conversation*

IMPACT OF VIRUSES AND VACCINES ON CANCER PATIENTS

Meeting Rooms A&B, Cross Insurance Center

10:00am-11:00am



As the leading cause of death in the state, there is value in illustrating how viruses interact with one of the most vulnerable populations in our area. Not COVID-19 specific, rather both health system and community-based perspectives of cancer/virus impact.

Presenter: Kyle Massey, *Northern Light Eastern Maine Medical Center*, Kelly Sawyer, *Northern Light Eastern Maine Medical Center*, Matt Dexter

Moderator: Christine B. Foundation

Event type: *Forum*

Sponsored by:



**Maine Community
College System**

MAINE INVENTION CONVENTION

Prefunction area, Cross Insurance Center

10:00am-2:00pm



The Maine Invention Convention (a program of the Maine Discovery Museum) is a statewide competition that promotes innovative problem solving and inventing by Maine middle school students. Students work with their peers and teachers to identify and solve problems by using the Innovation Engineering process. At this event, students from each participating school compete for the top invention awards.

Event type: *Presentations/competition*

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WHAT REALLY SUNK THE TITANIC?

Meeting Rooms 3&4, Cross Insurance Center

10:30am-11:30am



A root cause analysis may sound like an unpleasant way to spend a morning, but it's actually a critical tool being used throughout companies and research organizations. In this interactive session, you will see how this tool is used at one of Maine's most scientifically-focused companies, and determine for yourself the real reason for the sinking of the Titanic. The answers may surprise you...

Presenter: Dave Levine, *IDEXX*

Moderator: Niles Parker, *Maine Discovery Museum*

Event type: *Talk*

THE WISE AND WACKY - A HISTORICAL LOOK AT DISEASES IN MAINE

Meeting Rooms C&D, Cross Insurance Center

11:30am-12:30pm



Knowledge and uncertainty in medicine in 1800 and 2022 (Consumption to Covid-19). Beginning with Jeremiah Barker's "A History Diseases in the District of Maine . . ." A scandalously short review of diseases, epidemics, & treatments in New England (What did we know and when did we know it?)

Presenter: Richard Kahn, *Independent Scholar/ Tufts University School of Medicine*

Moderator: Jean Sideris

Event type: *Talk*

PRESERVING AND MANAGING MAINE FORESTS

Meeting Rooms 1&2, Cross Insurance Center

12:30pm-1:30pm



Roger Greene, a professional forester, will share his work at Great Pond Mountain in Orland since the 1990s. Richard Judd, an environmental historian, explains changes in land stewardship in New England in the second half of the 20th century. An open discussion will follow.

Presenter: Roger Greene, *Consulting Forester*; Richard Judd, *Emeritus, University of Maine*

Moderator: Liam Riordan, *University of Maine*

Event type: *Forum*

SATURDAY, MARCH 19

Families-

Middle School-

High School-

Adult-

INTRODUCTION TO CLIMATE REANALYZER

Meeting Rooms 3&4, Cross Insurance Center

1:30pm-2:30pm



Climate Reanalyzer is a data visualization website that provides access to climate and weather forecast models through a variety of pages for classroom, research, or general public use. In this presentation, Maine State Climatologist and Reanalyzer creator Sean Birkel will focus on using Climate Reanalyzer to answer questions like, "How do we know climate is changing? What is the difference between climate and weather?" The tour of the site will include showing animated climate data (such as changes in land and ocean temperature over time) and weather forecasts (temperature, precipitation, wind).

If you have a tablet or laptop, bring it so you can explore on your screen too!

Presenter: Sean Birkel, *University of Maine*

Moderator: Jean Sideris

Event type: *Forum/Workshop*

SCIENCE GOES TO THE DOGS

Meeting Rooms A&B, Cross Insurance Center

2:30pm-3:30pm



Dogs have been companions to humans for at least 14,000 years, and bring a wealth of abilities to the relationship. In this session, we'll learn about some of the science behind training dogs for police work and conservation practices.

Presenter: Al Woolley, *Bangor Police Department*; Lindsay Ware, *Science Dogs of New England*

Moderator: Kathryn Ravenscraft, *Humane Society of Bangor*

Event type: *Forum*

Sponsored by: **BIOME**
Bioscience Association of Maine

INSECTS EVERYWHERE!

*Hudson Museum, Collins Center for the Arts
University of Maine, Orono*

6:00pm-7:00pm



Insects have adapted to nearly every terrestrial and aquatic environment on earth, and humans have been encountering them in their daily lives for thousands of years. This exhibit from the Hudson Museum's ethnographic holdings focuses on the universality of cultural attitudes towards insects and provides information about insect environments and behavior and how they shape these cultural attitudes.

Event type: *Exhibit*

LESSONS FROM THE PAST: CULTURAL COLLAPSE AND DECLINE

*Hudson Museum, Collins Center for the Arts
University of Maine, Orono*

6:00pm-7:00pm



There is a natural progression in which civilizations rise, and in many cases expand their influence over surrounding areas, only to constrict geographically and in some cases collapse entirely. The causes of collapse are many: foreign invasion, climate change, environmental degradation, natural disasters, warfare, famine and even pandemics. They often leave behind abandoned settlements and cities with architectural remains and artifacts. View examples from Mesoamerica, South America, and the region ranging from Northern Mexico to the American Southwest that shed some light on the delicate balance between people and place and how easy it is to tip the scales.

Event type: *Exhibit*

MSF HEADLINER EVENT - THE WARMING SEA - AN EXPLORATION OF HOPE IN THE FACE OF THE CLIMATE CRISIS

Collins Center for the Arts, Orono

7:00pm-9:00pm



THE WARMING SEA presents complex and sometimes overwhelming challenges through the lens of music, providing a deeper understanding of how climate change is impacting the earth than data alone has been able to convey. The Maine Science Festival intends to advance the climate conversation with this event, to offer hope, and to inspire action to build a better future.

Presenter: *Maine Climate Researchers, Lucas Richman, Bangor Symphony Orchestra, The Warming Sea collaborators*

Event type: *MSF Headliner Event*

More information and tickets: www.thewarmingsea.me

Tickets: \$25/\$10 students

SATURDAY, MARCH 19

MSF Headliner Sponsor:





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www.versantpower.com



INFORMATION OVERLOAD! IDENTIFYING AND VERIFYING THE SCIENCE OF THE INTERNET

51 Main Street, Bangor

11:30am-12:30pm



How do you figure out science information online is truthful? In this session, learn about how science misinformation has been spread on-line, what some of the consequences have been, and what strategies and resources you can employ to prevent being fooled.

Presenter: Lindsay Decker, *Foglar Library, University of Maine*

Event type: *Forum/Workshop*

Sponsored by:



DON'T BLAME THE SOUND PERSON: THE SCIENCE BEHIND BAD CONCERT SOUND

51 Main Street

1:00pm-2:00pm



Have you ever paid a lot for a concert experience yet been disappointed by mediocre sound quality? This presentation will explore the realities behind why it is impossible to please an entire audience. Topics discussed will include psychoacoustics, venue acoustics, and phase interaction between loudspeakers.

Presenter: Eric Ferguson, *NESCOM, Husson University*

Moderator: Chris Rudolph, *Waterfront Concerts*

Event type: *Talk*

SETTING UP A BETTA TANK FOR SUCCESS

Maine Discovery Museum, Bangor

**ages 7 and up*

1:00pm-2:30pm

Learn how to set up a new 10 gallon aquarium for successful fish keeping for a wide range of common aquarium fish.

Participants will learn topics necessary for keeping healthy fish including: the nitrogen cycle, fish biology, and aquarium design. Participants will also learn skills needed for proper aquarium care including: tank set up, fishless cycling, water quality testing, and many procedures for fish keeping. And you'll leave the workshop ready to take care of your new 10 gallon aquarium.

Attendance limited to 15 participants.

Sign up at <https://bit.ly/MSF-BettaTank>

Some materials and support provided by Pet Pro

Presenter: Scarlett Tudor, *Aquaculture Research Institute, University of Maine*

Event type: *Workshop*

SCIENCE AND SOCIETY: MEET THE POLICY PEOPLE

West Market Square Artisan Coffeehouse, Bangor

**Recommended especially for ages 15-25*

2:00pm-3:00pm

Have you heard of Science Diplomats? In this roundtable discussion with senior science policy professionals, and explicitly aimed at youth either considering careers in science policy, or considering how science policy and politics effect them. The diplomats will delve into the mechanics of scipol, and have an open discussion with audiences.

Presenter: Ronit Prawer, *British Government*, Ethan Tremblay, *Governor's Energy Office*

Moderator: Kim Stewart, *Maine Discovery Museum*

Event type: *Roundtable discussion*

SUNDAY, MARCH 20

Families-  Middle School-  High School-  Adult- 



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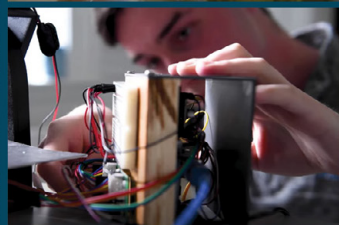


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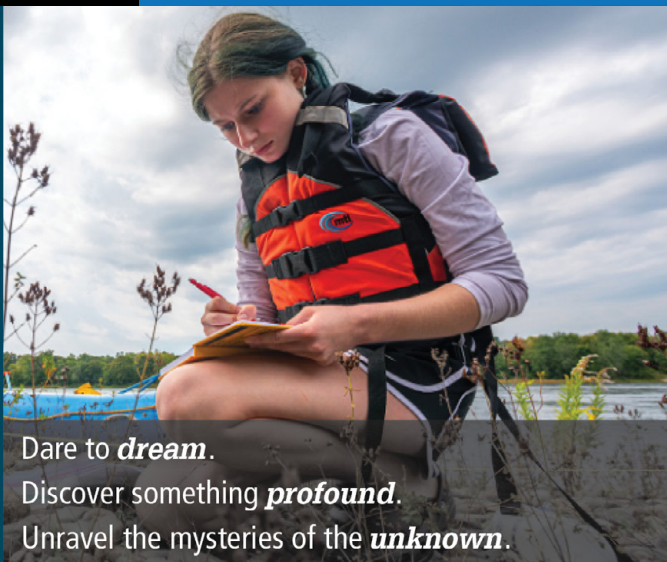
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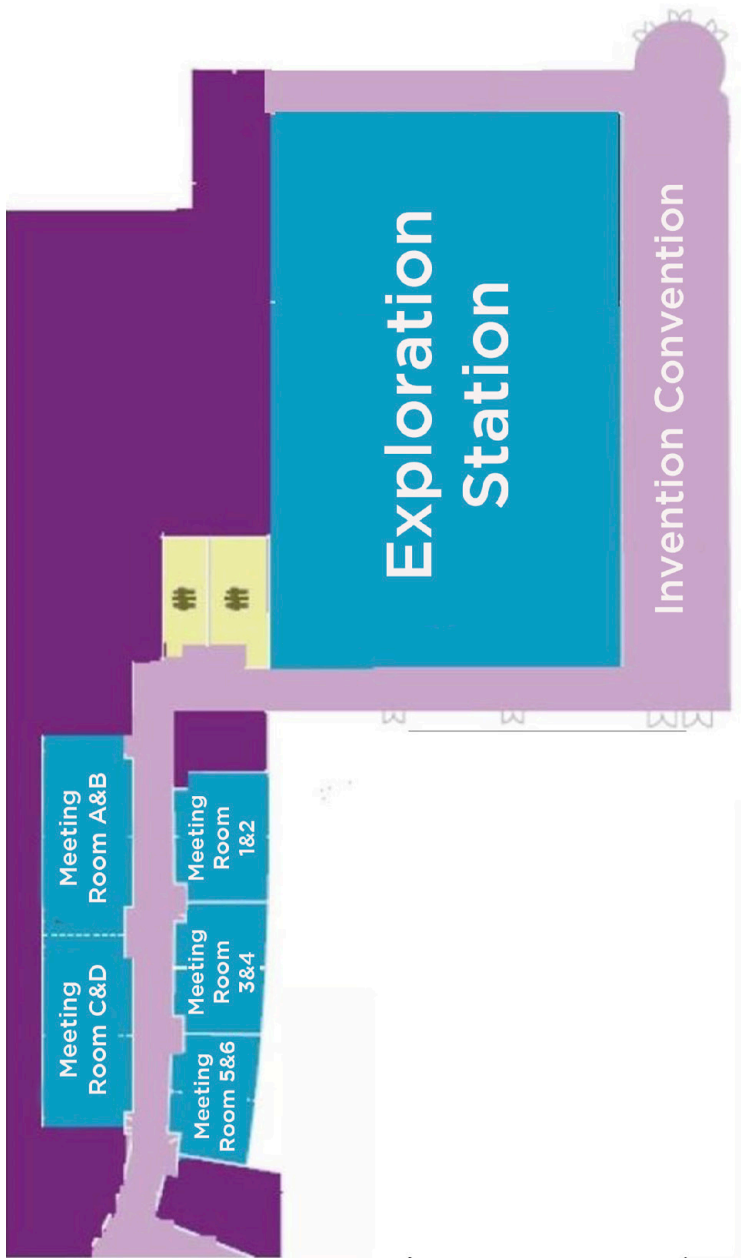
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Unravel the mysteries of the ***unknown***.
umaine.edu/rle

Research learning experiences bring new students to UMS campuses a week early to participate in hands-on research, make new discoveries and gain the skills to be successful in college.

The only question is, what will *you* be the first to know?

The University of Maine is an equal opportunity/affirmative action institution.

Cross Insurance Center Layout for Saturday's events



MAINE SCIENCE FESTIVAL



Thank you for exploring and celebrating some of the amazing Maine science and people who make it happen. We will see you next March 22-26, 2023 for the 8th MSF!

Be sure to Like and follow us on social media!

Facebook:

www.facebook.com/mainesciencefestival

Twitter:

www.twitter.com/MEScienceFest

Instagram:

<https://www.instagram.com/mainesciencefestival/>

And don't forget to use our official hashtags:

#scienceiseverywhere and #MSF2022

mainesciencefestival.org

The Maine Science Festival is grateful for the passion, expertise, and time of our presenters.

There's no way to celebrate Maine science without them.

Thank you!



MAINE SCIENCE FESTIVAL: LIKE A MUSIC FESTIVAL - BUT SCIENCE

The Maine Science Festival (MSF) showcases the science (and technology) happening in Maine, targeting the general public with events for all ages. Using forums, workshops, talks, art exhibits, film screenings, and hands-on activities, we produce events that focus on the science happening and being used in Maine.

The MSF is an independently funded program of the Maine Discovery Museum, and the first and only science festival in Maine (and north of Cambridge, MA). Launched in 2015, the MSF is a celebration of the national and world leading science by the Mainers who do it. We showcase the remarkable work happening in Maine daily with 70+ events and activities throughout five days, in Bangor, with all but the headliner event available free of charge.

In addition to our March festival, in September 2020, we launched the Maine Science Podcast, a conversation with a Mainer working in science, allowing us to shine a spotlight on science in Maine year round (<https://bit.ly/MSPepisodes>).

#SCIENCEISEVERYWHERE



The Maine Science Festival exists so we can shine a spotlight on the people and organizations in our state who are using their passion and love of science to make Maine and the world better. Since 2015, we have delighted in *bringing Maine science to the public*.

While the MSF does not charge for any event other than the headliner, that doesn't mean there isn't a cost. We raise money all year to keep the MSF available to all. It's important the exploration and innovation that happens here in Maine daily is available to Mainers of all ages, regardless of their income or ability to pay. We want you to be inspired by what you experience at the Maine Science Festival and we do not want to hide it behind a paywall.

Many science festivals around the country charge anywhere from \$10-30 for just one event like Tech Night or 5 Minute Genius; we do not. If you'd like to ensure that this model continues - that we can keep the Maine Science Festival accessible to all - we could use your support. We have a suggested donation of \$5 if you attend the MSF, but we welcome any amount that works for you. Please find one of our donation buckets at the MSF, or donate online at <https://www.mainesciencefestival.org/donate/>.

Thank you!

DONATE here:



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