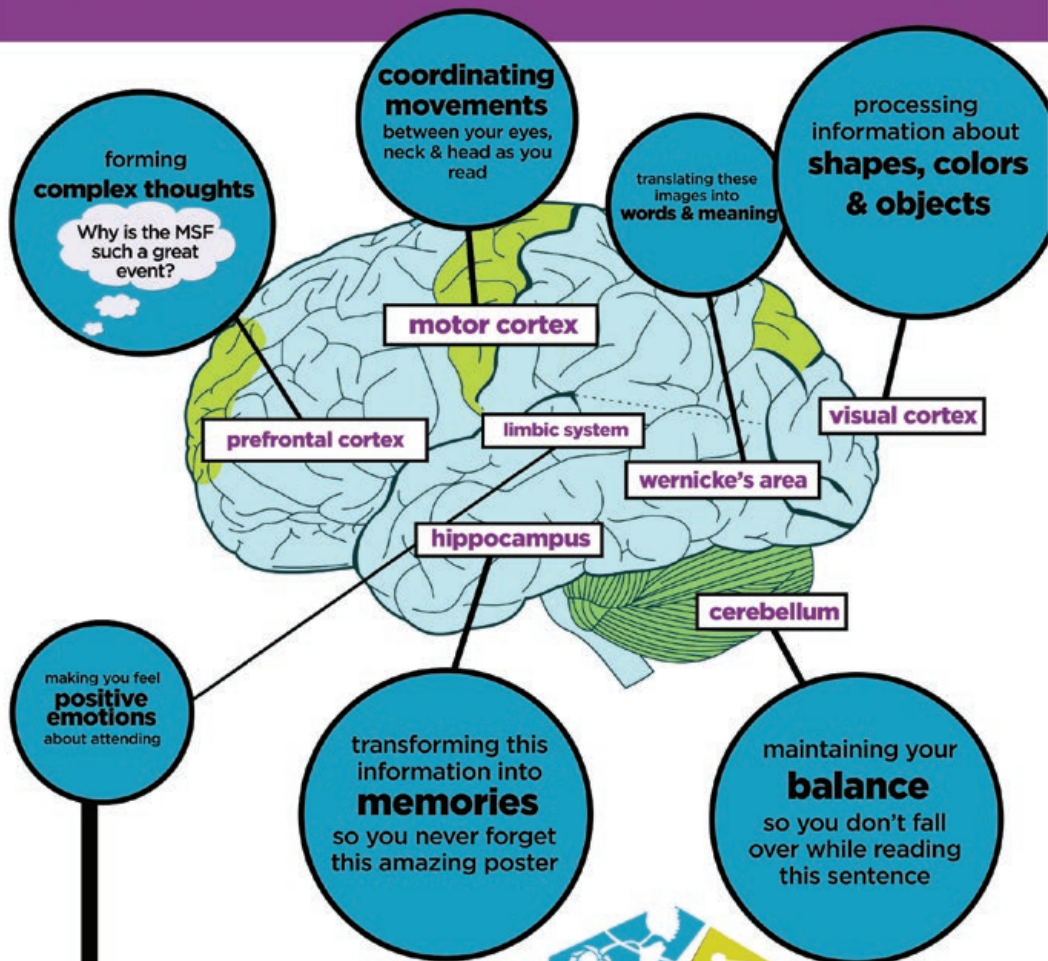


THIS IS YOUR BRAIN (LOOKING AT THIS POSTER)



learn more at mainesciencefestival.org



Maine Public Broadcasting Network

MARCH 18-20, 2016 · BANGOR, MAINE

WELCOME TO MSF 2016

We are thrilled to have you joining us in Bangor for a weekend celebration of science. During these three days, there are more than 50 different events for festival-goers of every age and interest at the MSF. From hands-on activities, like those at Exploration Station (over 20 partners hosting tables/events there!); to panel discussions exploring topics including manufacturing, sports, textiles, opioids, and research funded by Mainers; to workshops covering topics ranging from improv, art, wine and ice cream, we've got you covered. Thanks to our sponsors, we are able to offer these events to festival goers free-of-charge. In addition to these remarkable events by our partners, we will also have Nate Silver, of FiveThirtyEight, spending Saturday evening March 19th with us - his first time speaking in Maine. We can't wait to hear his thoughts on how data analysis can help us make better decisions.

Most importantly, this is your chance to find out about the remarkable science that surrounds us everyday. We have many Maine scientists who are national and world leaders in their field, and we are fortunate to have so many of them joining us this weekend to share their love of what they do. We hope you'll take some time this weekend to learn as much as you can about the science in Maine and the people doing it. There is no better way to be reminded that Science is Everywhere!

Kate Dickerson, Director
Maine Science Festival

There are 18,000 higher education students within twelve miles of Bangor, a higher concentration than any other city in Maine. Bangor is the perfect location for the Maine Science Festival. There is no similar event north of Massachusetts. In its second year the Maine Science Festival is already growing significantly. The number of events has expanded as well as adding a full day Friday to accommodate field trips. Over 1100 students are coming to this year's festival. We are determined in Bangor to be the most creative, caring, and entrepreneurial small city in America. The Maine Science Festival is an important part of that effort.

Sean Faircloth
Mayor of Bangor

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General Info

mainesciencefestival.org
@mesciencefest

Festival Shuttle

A Festival Shuttle, courtesy of Darlings, will run on Saturday, March 19th from 9am until 4pm between the Cross Insurance Center and The Bangor Public Library, stopping at various downtown venues where events are being held.

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.

**THANK YOU FOR HELPING US TEACH
SCIENCE IS EVERYWHERE!**



Additional support has also been provided by the following foundations and organizations
Maine Community Foundation - from the Fritz and Susan Onion Fund
Maine Office of Tourism
Morton-Kelly Charitable Trust
City of Bangor, via Bangor Commission on Cultural Development
Maine Sea Grant
EMHS Foundation

FESTIVAL AT A GLANCE

FRIDAY, MARCH 18

FIELD TRIP DAY

Cool Science

8:30a - 2:30p

Cross Ctr Ballroom

Brain Station

8:30a-2:30p

Cross Ctr A&B

Speedy Shelter

8:30a-2:30p

Cross Ctr 1&2

Old School Audio

The Music

Synthesizer **

9:45a & 10:45a

Cross Ctr Ballroom

Science on the

Bookshelf **

9:45a & 10:45a

Cross Ctr C&D

4-H Follow A

Researcher **

9:45a

Cross Ctr 3&4

NASA and Art**

9:45a - 10:15a

FRIDAY, MARCH 18

FIELD TRIP DAY

Smart Brass

Session 1 **

10:45a

Cross Ctr 3&4

Video Game

Genesis - Session 1 **

10:45a

Cross Ctr Ballroom

Smart Brass

Session 2 **

noon

Cross Ctr 3&4

Video Game

Genesis - Session 2 **

noon

Cross Ctr Ballroom

Physics Road

Show **

noon

Cross Ctr Ballroom

4-H Follow A

Researcher **

noon

Cross Ctr C&D

FRIDAY, MARCH 18

Antique Computer Exhibit

4pm - 8pm

Maine Discovery Museum

Teen Tech Night - Middle Schoolers

4pm - 8pm

Maine Discovery Museum

Teen Tech Night - High Schoolers

4pm - 8pm

Bangor Y

FRIDAY, MARCH 18

MSF LATE NIGHT

Science on Tap

21+ event

7pm - 10pm

Sea Dog - Barrel Room

Friday Night Film at Central Gallery

Contact

8pm

Central Gallery

Events marked with ** are for participating Field Trips only.

FESTIVAL AT A GLANCE

SATURDAY, MARCH 19

Exploration Station
8:30a - 4:00p
Cross Ctr Ballroom

Brain Station
8:30a-4p
Cross Ctr A&B

VEMI Lab Live
8:30a-2:30p
Cross Ctr Ballroom

SATURDAY, MARCH 19

Nature Illustration Workshop
9am - 11am
University of Maine
Museum of Art

SATURDAY, MARCH 19

The Real Value of Public Funding for R&D in Maine
10a -11:15a
Cross Ctr 3&4

SATURDAY, MARCH 19

Headliner: Nate Silver
7:30p **Ticketed Event
Hampden Academy Performing Arts Ctr

SATURDAY, MARCH 19

Your Brain on Improv
10a - 12:30p
Penobscot
Theatre Company

Op Art Workshop
11a - 3pm
Univ. of Maine
Museum of Art

Mad Science of Maine: Up, Up & Away
11a - noon
Bangor Public
Library

Maine's Rivers & Fisheries
11a - 12:30p
Bangor Public
Library

Science & Technology in Sports
11a - 12:15p
Cross Ctr 1&2

Textiles in Maine
11:30a - 12:45p
WBRC

SATURDAY, MARCH 19

Magnificent Magnets
Noon - 2p
Bangor Public
Library

Science of Wine
1p - 2p
Central Street
Farmhouse

Opioids: Current Crisis
1p - 2:30p
Cross Ctr 1&2

Science in Maine's National Park
1:30p - 2:45p
Bangor Public
Library

Bringing Our Lakes Alive
1:30p - 2:45p
Cross Ctr 3&4

Science & Manufacturing in Maine
2p - 3:30p
WBRC

Owl Pellet Autopsy
2p - 4:15p
Maine Discovery
Museum

FESTIVAL AT A GLANCE

SUNDAY, MARCH 18

So You Think You Know Math?

11a - 12:15p

58 Main

Minecraft Workshop

11:30a & 1:30p

Coespace

Ice Cream for Science!

11a - 1p

Fork & Spoon

Verse in the Universe

11:30a - 12:30p

Rock & Art Shop

Aquaculture: Farming the Gulf

Noon - 1:15p

Maine Discovery Museum

Maine in Space

1p - 2:15p

58 Main

The Very Hungry Caterpillar Day

w/ *The Bug Guy*

Tony Sohns

1p - 1:45p

The Briar Patch

SUNDAY, MARCH 18

The Story Collider

1p - 3p

Sea Dog - Barrel Room

Science at the Bangor CSA Fair!

3p - 5p

Sea Dog - Banquet Room

SUNDAY, MARCH 18

5-Minute Genius

3:30p

Bangor Public Library

****Followed by Q&A and Closing Reception**



**FESTIVAL
DAY 1**

FRIDAY, MARCH 18

Cool Science

Sponsored by University of Maine

Friday, March 18; 8:30am-2:30pm
Cross Center Ballroom

Free Event

Suggested audience: all ages

Event type: hands-on

Learn by doing through various hands-on demonstrations organized and presented by MSF partners from across the state. Visit each booth and discover the diversity of Maine science!

"How Ecovative Are You?" Identify alternatives to traditional polystyrene materials, and show how they are different. Presented by University of New England's Chemistry Club

"Math Games" Come and play different math games throughout the day. Switching Problems, Number Chess, and Game of Life; Modular Origami; and mathematical challenges. Presented by Maine Mathematics Science and Engineering Talent Search (MMSETS)

"Exploring Optical Illusions and the Neuroscience behind them" This is your opportunity to find out why optical illusions work! Presented by the Townsend Lab, University of Maine and Maine Society for Neuroscience

UMaine College of Engineering - learn what engineers can do!

"Maine's marine ecosystem" Learn about some of the issues that are affecting Maine's marine ecosystems and coastal communities, and learn about how you can get involved in coastal citizen science projects! Presented by Maine Sea Grant

"Science Around ME" is an app that facilitates interaction, discussion, and writing about natural science settings in Maine. The Maine Writing Project will be showcasing the new capabilities of the app and inviting festival-goers to download and join the conversation about the science that is all around them. Presented by The Maine Writing Project and Maine Discovery Museum

"Mainly Physics PSI" Explore hands-on physics demonstrations with physicists, physics students, and friends! A number of experiment stations will cover properties of light, electricity, magnetism, sound, waves, and heat and temperature. Presented by Physics Department, University of Maine

More Included in Cool Science...

“Weather Exploration” While many places on Earth experience severe weather, few are inhabited by humans 24 hours a day, 365 days a year. Find out how our weather observers study their environment in the Home of the World’s Worst Weather. Presented by Mt. Washington Observatory

“Criminalistics - Solving a crime through deductive reasoning” Festival goers will be given information and clues to critically analyze the evidence and arrive at a potential suspect. Participants will then try their hand developing a composite sketch of the suspect, using special software on a computer called FACES, to ultimately solve the crime. Presented by Husson University

“Touch Tank” Underwater marine life touch tank filled with marine life, larval and juvenile shellfish and lobsters, and microalgae that can be studied under microscopes. Presented by Downeast Institute

“Rocket Launch” Students are invited to make a paper rocket and see if their rocket can reach the stars in our test flight zone. Presented by Challenger Learning Center of Maine

“Puff Mobile” Students will be working individually or as a team in designing a Puff Mobile - a vehicle that when blown on, moves in a forward direction. Teams or individuals can race their final product. Materials will be provided and minimal instruction, so that they can be as creative as possible. Presented by Girl Scouts of Maine

“Mystery Marine Identification” Students of all ages are invited to participate in an interactive activity that uses their senses and powers of deduction to learn and identify marine organisms! Presented by Hurricane Island.

“Hovercrafts” Students can build and test hovercrafts, and teachers can pick up information about professional development, and receive “field trip survival packs.” Presented by Maine STEM Partnership at the RiSE Center, University of Maine

“Watershed Model” Come and check out a watershed model, learn about the technology used to monitor lakes for water quality, and take a look at some lake insects. Presented by Maine Lakes Society

“Talking Trash” Come and see what makes up the waste stream! We will be sorting out common waste and going over the complexities of materials management. Presented by Senator George J. Mitchell Center, University of Maine

Even More Included in Cool Science...

“Marine Science at UMaine” The School of Marine Sciences at the University of Maine has extensive research and experience in many different areas of marine life. Come and check out a demonstration of fish tracking devices and bioluminescence!

Presented by the School of Marine Sciences, University of Maine

“Old time telephones” Explore high-tech means of communication from the 20th Century with vintage dial phones and their mechanics open to see. Follow, through sight and sound, the path of a telephone call - the slow-motion equivalent of digitized switching, and an introduction to computer logic.

Presented by The Telephone Museum

Participating MSF partners:

Challenger Learning Center of Maine, College of Engineering at the University of Maine, Downeast Institute, Girl Scouts of Maine, Habitat for Humanity of Greater Bangor, Hurricane Island, Husson University, Maine Lakes Society, Maine Sea Grant, Maine Writing Project, Mt. Washington Observatory, RiSE Center, Senator George J. Mitchell Center at the University of Maine, University of Maine, University of New England

Brain Station

Sponsored by University of New England

Friday, March 18; 8:30am-2:30pm
Cross Center Meeting Rooms A & B

Free Event

Suggested audience: all ages

Event type: hands-on/exhibit

Participating MSF Partners:

University of New England

University of New England students and faculty will lead visitors through a tour of the human brain and nervous system. A variety of specimens be available, illustrating both typical brain anatomy and several common diseases and disorders that affect the brains such as strokes, Parkinson's disease and Alzheimer's disease. Festival goers will also have the opportunity to figure out ways to keep their brain safe and provide some insight into brain function.

Speedy Shelter

Hosted by Habitat for Humanity of Greater Bangor

Friday, March 18; 8:30am-2:30pm
Cross Center Meeting Rooms 1 & 2

Free Event

Suggested audience: all ages

Event type: hands-on

Participating MSF Partners:

Habitat for Humanity of Greater Bangor

A Building Invention Challenge. Invent an emergency shelter that can fit a person and is sturdy and quick to build.

The Music Synthesizer “Old School” audio

Friday, March 18; 9:45am-10:30am
Cross Center Ballroom

Free Event

Suggested audience: all ages

Event type: show/presentation

Participating MSF Partners:

Husson University

NESCOM presents a demonstration of how sound can be made and modified electronically. This is your chance to see how signal paths work.

Participants:

Scott Loiselle; Thom Johnston, NESCOM, Husson University



Science on the Bookshelf

Friday, March 18; 9:45am & 10:45am

Cross Center Meeting Room C&D

Free Event

Suggested audience: all ages

Event type: panel discussion

Hear how Maine authors Tim Caverly and Fran Hodgkins have used science in their books, and what it was like to work with their artistic colleagues, illustrator Frank Manzo and photographer Mike Taylor, to help the science and the story come alive.

Participants:

Tim Caverly, author, Fran Hodgkins, author, Frank Manzo, illustrator, Mike Taylor, space photographer, Kim Stewart, Maine Discovery Museum - moderator

Participating MSF Partners:

Maine Discovery Museum

4-H Follow a Researcher

Friday, March 18; 9:45am & noon

Cross Center Meeting Room 3&4

Free Event

Suggested audience: all ages

Event type: panel discussion

In early 2016, Kit Hamley traveled to the Falkland Islands to research an extinct wolf - the warrah. Students from throughout Maine and beyond connected with Kit regularly via Twitter while she was on her expedition - and some schools used this opportunity to teach social studies, science, even ELA while the students developed a relationship with a UMaine student who performs cool science research. Join us to hear about Kit's research update, and see how teachers and students respond to "4-H Follow a Researcher™."

Participants:

Sherry Blanchard, Hudson Elementary School (RSU 64), Kit Hamley, University of Maine Climate Change Institute, Greg Kranich, University of Maine Cooperative Extension, Cheryl Wood, Hudson Elementary School (RSU 64) Laura Wilson, University of Maine Cooperative Extension/4-H - moderator

Participating MSF Partners:

4-H/University of Maine Cooperative Extension

Smart Brass

Friday, March 18; 10:45am & noon

Cross Center Meeting Room 3&4

Free Event

Suggested audience: all ages

Event type: panel discussion

Participating MSF Partners:

Bangor Symphony Orchestra, College of Liberal Arts & Sciences University of Maine, and University of Maine

The design and material of musical instruments are what make them sound the way they do. In many ways, musical instruments are a full course in physics all by themselves. In this panel, you'll learn about some of the physics and acoustics that help explain why brass instruments sound the way they do.

Participants:

Bangor Symphony Orchestra Acadia Brass Ensemble: Anita Jerosch, Trevor Marcho, Bill Whitener, Wanda Whitener, and Lori Wingo, Robert Walkling, University of Southern Maine (Emeritus), John Thompson, University of Maine - moderator

Video Game Genesis

Sponsored by Bangor Savings Bank

Friday, March 18; 10:45am & noon

Cross Center Ballroom

Free Event

Suggested audience: all ages

Event type: hands-on

The most successful video games today require a team of people who are experts in their fields: sound designers, computer programmers, and visual artists are among those necessary for a great game. Hear from an artist and computer programmer creating the games people want to play! Find out how they collaborate and what it takes to succeed in one of the most innovative industries using art and science together.

Participants:

Chuck Carter, Eagre Games

Zach Coulombe, Eagre Games

Peter Hardy, University of Maine at Farmington - moderator

Physics Roadshow

Friday, March 18; noon
Cross Center Ballroom

Free Event
Suggested audience: all ages
Event type: show/presentation

Participating MSF Partners:
*College of Liberal Arts & Sciences
at the University of Maine*

Mainely Physics 2016! What wins: immovable object or unstoppable force? Can air freeze? Why aren't clouds square? Does a candle blow in the wind, or out in the wind? Why is the sky (and the Moon sometimes) blue? These and more will arise during this year's program finding the physics all around us! Come for a spin, shoot down a cloud, flip your world upside down!

Participants:
*Andrej Favia, University of Maine
David Sturm, University of Maine*

Antique Computer Exhibit

Friday, March 18; 4:00pm - 8:00pm
Maine Discovery Museum

Free Event
Suggested audience: all ages
Event type: exhibit/hands-on

Participating MSF Partners:
Maine Discovery Museum

A display of "antique" computers and operating systems, provided by the State's Office of Information Technology. Marshall Grover, of the Maine State Office of Information Technology, will be there to explain the different parts of the exhibit.

Teen Tech Night - Middle School

Friday Showcase Event

Friday, March 18; 4:00pm - 8:00pm

Maine Discovery Museum

Free Event; pre-registration suggested (via mainesciencefestival.org)

Suggested audience: middle school students

Event type: Workshop

Learn, share and collaborate with other techno-teens, exploring cutting-edge software and web-based tools. There will be workshops and hands-on activities offered, and the program is designed for maximum engagement. Pizza dinner provided.

Participants:

Brewer Robotics Team; Bruce Segee, University of Maine; ASAP Media Services, University of Maine; Gerald Wright, Husson University; Kaspersky- Cyber Crime; 3D Printing

Participating MSF Partners:

Maine Discovery Museum; Husson University; and the University of Maine.

Teen Tech Night - High School

Friday Showcase Event

Friday, March 18; 4:00pm - 8:00pm

Bangor Y, Isaac Farrar Mansion

Free Event; pre-registration suggested (via mainesciencefestival.org)

Suggested audience: high school students

Event type: Workshop

Take a deeper dive into the world of computer programming at this session. Workshops will cover video game design, computer evolution (Marshall Grover), computational chemistry, encoding & decoding, and website building and design. Laptops may not be available for all participants; if you have a laptop and/or smartphone, please bring it. Pizza dinner provided.

Participants:

The Maine Game; Tim Robbins, University of New England; Laura Gurney, Husson University; Hacktivate

Participating MSF Partners:

Bangor Y; Hacktivate; Husson University; and The Maine Game.

Science on Tap

Friday Showcase Event; Sponsored by The Maine Show

Friday, March 18; 7:00pm - 10:00pm
Sea Dog Brewing Co. - Barrel Room

Free Event

Suggested audience: 21+

Event type: Talks

What does science have to do with popular culture? Plenty! Combine libation, laughter, and lessons you'll never forget. This year, we will be exploring (some of) the Seven Deadly Sins: gluttony, wrath and pride.

Participants:

Will Broussard, Mt. Washington Observatory; Shannon McCoy, University of Maine; Tony Sohns, Rock & Art Shop; Gibran Graham - moderator

Participating MSF Partners:

College of Liberal Arts & Sciences at the University of Maine, Mt. Washington Observatory, and the Rock & Art Shop

Friday Night Film - *Contact* (1997)

Sponsored by The Beta Agency

Friday, March 18; 8:00pm
Central Gallery

Free Event; space is limited

Suggested audience: 14 yrs+

Event type: film

It's time for some Science on the Screen. Join us for a showing of the movie "Contact" a film adaptation of the Carl Sagan novel. Please feel free to bring comfy seats; outside food and drink are good too.

Dr. Ellie Arroway (Jodie Foster) races to interpret a possible message originating from the Vega star system. Once first contact with an extraterrestrial intelligence is proven, Arroway contends with restrictive National Security Advisor Kitz (James Woods) and religious fanatics bent on containing the implications of such an event. An incredible message is found hidden in the signal, but will Arroway be the one to answer its call?

Participating MSF Partners:

Launchpad



Hiss... Crackle...
Crackle... Science is
Everywhere... Hiss...
Crackle....

Check out the Friday Night Film, *Contact*, starring Jodie Foster, 8pm at Central Gallery (see the event listing on page 17)

Looking for something fun to do
in your community?

Check out the
STEM Resource Bank!
www.STEMinME.org

SCIENCE
TECHNOLOGY
ENGINEERING
MATHEMATICS



Brought to you by:

The Reach Center @  **MMSA**
Maine Mathematics
and Science Alliance

A young girl with blonde hair and blue-rimmed glasses is looking intently at a large white tub filled with dark, leafy seaweed. A hand is visible in the foreground, holding a bunch of the seaweed. In the background, there is a white tent with a sign that says "MAINE" and other people, suggesting an outdoor festival setting.

FESTIVAL DAY 2

SATURDAY, MARCH 19

Exploration Station

Sponsored by WLBZ 2 and WCSH 6

Saturday, March 19; 8:30am - 4:00pm

Cross Center Ballroom

Free Event

Suggested audience: all ages

Event type: hands-on

Roll-up your sleeves and learn through various hands-on demonstrations organized and presented by MSF partners from around the state. Make sure to stop in and visit each booth!

Included in Exploration Station -

“Maine State Science Fair” Come and check out the latest crop of up-and-coming scientists from high schools around Maine. The top three finishers will represent Maine at the Intel International Science and Engineering Fair - the world’s largest and most prestigious science fair. Presented by The Jackson Laboratory and Maine Math & Science Alliance

- “Robotics” presented by Maine Robotics
- “High Altitude Ballooning” presented by the Eason Laboratory, College of Engineering, University of Maine
- “Old time telephones” presented by The Telephone Museum
- “Wireless Leak Detection for Space” presented by WiSe-Net Lab, University of Maine
- “The Human Body: Amazing Facts” presented by Girl Scouts of Maine
- “Launch with Challenger Center” presented by the Challenger Learning Center of Maine.
- “Probability” presented by University of New England, Math Club
- “Water Density” presented by Maine Maritime Academy
- “Citizen Science” presented by Gulf of Maine Research Institute
- “Astronomy” presented by Emera Astronomy Center
- “Energy, Environment and Wildlife” presented by Unity College
- “Sea Farming in Maine” presented Aquaculture Research Institute and Maine EPSCoR, University of Maine
- “Cell, organ and skeletal explorations” presented by Maine Medical Center Research Institute
- “Marine Debris and Maine Rivers” presented by National Oceanic and Atmospheric Administration and the Maine Forest Products Council
- “4H - Science from 4H around Maine”

Brain Station

Sponsored by University of New England

Saturday, March 19; 8:30am - 4:00pm

Cross Center Meeting Rooms A & B

Free Event

Suggested audience: all ages

Event type: hands-on

Participating MSF Partners:

University of New England

University of New England students and faculty will lead visitors through a tour of the human brain and nervous system. A variety of specimens be available, illustrating both typical brain anatomy and several common diseases and disorders that affect the brains such as strokes, Parkinson's disease and Alzheimer's disease. Festival goers will also have the opportunity to figure out ways to keep their brain safe and provide some insight into brain function.

VEMI Lab Live

Saturday, March 19; 8:30am - 2:30pm

Cross Center Ballroom

Free Event

Suggested audience: all ages

Event type: hands-on, demonstration

Participating MSF Partners:

VEMI Lab, University of Maine

The Virtual Environments and Multimodal Interaction Laboratory (VEMI Lab), from the University of Maine, will be holding a live interactive coding and digital development seminar. This event will include interactive audience participation to guide the design of a brand new virtual environment simulation that is created in real-time on stage in front of them. VEMI staff will also be hosting multiple Q&A sessions for anyone curious about the fields of Virtual Reality (VR), Augmented Reality (AR), Programming, Computer Science, and Digital Art. Our goal is to foster interest in these fields through creative design and problem solving, and to discuss research opportunities and new experiences that are available to students in our lab at UMaine for people across many majors.

Nature Illustration Workshop

Sponsored by Next Media

Saturday, March 19; 9:00am - 11:00am

University of Maine Museum of Art

Free Event; registration required

Suggested audience: high school+

Event type: workshop

Participating MSF Partners:

University of Maine Museum of Art

Acclaimed illustrator Chuck Carter will lead a workshop on how to bring nature to vivid life, while keeping it scientifically accurate.

The Real Value of Public Funding for R&D

Saturday, March 19; 10:00am - 11:15am

Cross Center Meeting Rooms 3 & 4

Free Event

Suggested audience: high school+

Event type: panel discussion

Participating MSF Partners:

Bigelow Laboratory for Ocean Science,

The Jackson Laboratory, MDI Biological Laboratory

Maine voters are often asked to support bonds that help further scientific research in Maine. Have you ever wondered what scientists are doing with the bond money that voters approve at the polls? This panel, with representatives from some of the leading Maine research organizations that have received these funds, will discuss the science that Maine taxpayers have funded.

Participants:

LuAnn Ballesteros, The Jackson Laboratory; Edward Bilsky, University of New England; Chuck Donnelly, RockStep Solutions; Judy Sproule, MDI Biological Laboratory; Louis Luchini, Maine House of Representatives; Jeri Bowers, MDI Biological Laboratory - moderator

Your Brain on Improv

Saturday, March 19; 10:00am - 12:30pm

Penobscot Theatre Company

Free Event; sign-up required through Penobscot Theatre, call 207-947-6618

Suggested audience: 13 yrs+

Event type: workshop

Participating MSF Partners:

University of Maine Museum of Art

Can improv make you smarter/healthier/happier? Yes, and emerging research shows positive effects on the human brain. Join the experts at Penobscot Theatre Company for a lively and active demonstration of how improv works outside of theatre.

Participants:

Len Kass, University of Maine; Amy Roeder, Penobscot Theatre Company

Antique Computer Exhibit

Saturday, March 19; 10:00am - 5:00pm

Maine Discovery Museum

Free Event

Suggested audience: all ages

Event type: exhibit/hands-on

Participating MSF Partners:

Maine Discovery Museum

A display of "antique" computers and operating systems, provided by the State's Office of Information Technology. Marshall Grover, of the Maine State Office of Information Technology, will be there to explain the different parts of the exhibit.

Mad Science of Maine: Up, Up & Away

Saturday, March 19; 11:00am - noon

Bangor Public Library, Lecture Room

Free Event; limited to 100

Suggested audience: all ages

Event type: show

Participating MSF Partners:

Bangor Public Library, Mad Science of Maine

You think homework is pressure? Just wait until you learn how the weight of the earth's atmosphere pushes down on you with the force of an elephant! Explore how Bernoulli's principle creates enough lift to make a jumbo jet fly or how air pressure can be used to launch a hot air balloon. Watch in amazement as our vortex generator creates giant smoke rings. Mad Science shows are fun and educational and this program will leave you flying high!

Maine's River Fisheries: Sustenance, Science and Conservation

Saturday, March 19; 11:00am - 12:30pm

Bangor Public Library, Community Room

Free Event

Suggested audience: high school+

Event type: panel discussion

Participating MSF Partners:

College of Liberal Arts & Sciences

at the University of Maine, Maine Sea Grant

The Penobscot and other Maine rivers have historically supported large numbers of migratory, or sea-run, fish that were essential for local people. Current efforts to understand and restore these fish, while seemingly new, are part of a long tradition of environmental knowledge and conservation. This panel presents diverse views about the past and present state of Maine's inland fisheries and seeks to engage audience members in a discussion about these important issues for our communities.

Participants:

Denise Buckley, Craig Brook National Fish Hatchery; Erik Reardon, University of Maine;

Catherine Schmitt, Maine Sea Grant; Liam Riordan, University of Maine - moderator

Science & Technology in Sports

Sponsored by University of Maine

Saturday, March 19; 11:00am - 12:15pm

Cross Insurance Center; Meeting Rooms 1 & 2

Free Event

Suggested audience: high school+

Event type: panel discussion

Participating MSF Partners:

University of Maine

Sports nowadays uses far more technology and science than in years past. In this panel, you'll hear from people who are using science in the development of products used by athletes in a wide variety of sports. From computer science, to mechanical engineering, there is no shortage of science applications in the world of sports, covering everything from kayaking to the NFL and NHL.

Op Art Workshop

Saturday, March 19; 11:00am - 3:00pm; drop-in workshop
University of Maine Museum of Art

Free Event

Suggested audience: all ages

Event type: workshop

Participating MSF Partners:

University of Maine Museum of Art

Explore the physical and psychological process of vision while making and viewing art. Focusing on optics, participants will learn techniques to create optical illusions in their very own original artwork. All supplies are included and guided instruction is provided.

Participants:

Kat Johnson, University of Maine Museum of Art

The Future of Textiles in Maine

Saturday, March 19; 11:30am - 12:45pm
WBRC

Free Event

Suggested audience: high school+

Event type: panel discussion

Participating MSF Partners:

Maine Discovery Museum,

Saco River Dyehouse, WBRC

Maine has been a source of textiles since before becoming a state and a new era of textiles is coming of age in Maine. From specially made workout clothes, to engineered ropes for ocean work and rock climbing, to the medical patch used in heart surgery, technical textiles uses are as diverse as Maine geography. This panel will introduce you to the world of technical textiles, and you'll hear from both a designer and an engineer, and how they use technical textiles in the world market.

Participants:

Claudia Raessler, Saco River Dyehouse; Elizabeth Whelan, Elizabeth Whelan Design; Josh Walls, Sterling Rope; Niles Parker, Maine Discovery Museum - moderator

Magnificent Magnets

Saturday, March 19; noon - 2:00pm
Bangor Public Library, Lecture Hall

Free Event

Suggested audience: all ages

Event type: hands-on

Participating MSF Partners:

Bangor Public Library, Mad Science of Maine

Kids of all ages will be drawn in by the fun filled force of our magnet experiments. Take a magnet through a maze & discover why magnets can levitate. Learn how like poles repel and opposites attract as we explore this strange and powerful force together.

Science of Wine

Saturday, March 19; 1:00pm - 2:00pm
Central Street Farmhouse

Free Event

Suggested audience: 21 yrs+

Event type: workshop

Participating MSF Partners:

Central Street Farmhouse

Wine has been around for thousands of years, and making your own wine is becoming popular again. At this workshop, you'll learn how to make your own wine, and the science behind the winemaking process.



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Opioids: Current Crisis, Historical Context and a Rationale Plan Moving Forward

Sponsored by University of New England

Saturday, March 19; 1:00pm - 2:30pm

Cross Insurance Center, Meeting Rooms 1 & 2

Free Event

Suggested audience: high school+

Event type: panel discussion

Participating MSF Partners:

University of New England

Opioid addiction is at a crisis point, impacting Mainers at both the personal, public health, and societal levels. In this discussion, our panelists will explain some of the science behind addiction and place it in a historical context. The panel will also provide a summary of the clinical and policy work that is taking place to help prevent and better treat people who are misusing these substances, and will take questions from the audience.

Participants:

Edward Bilsky, University of New England; Patricia Hamilton, Public Health & Community Services, Bangor; Stephen Z. Hull, Mercy Hospital; Emily Shangraw Zerba, University of New England; Steve McKay, WLBZ - moderator

Science in Maine's National Park

Saturday, March 19; 1:30pm - 2:45pm

Bangor Public Library, Community Room

Free Event

Suggested audience: high school+

Event type: panel discussion

Participating MSF Partners:

Maine Sea Grant, Schoodic Institute at Acadia National Park

Acadia National Park is celebrating its 100th Anniversary this year (as is the National Park Service), and it is more than just a refuge for people looking to reconnect with nature. Acadia is also a site of vital research that advances our knowledge and understanding of the natural world, history, and society. Join this panel of experts and learn about the remarkable science that is happening at Acadia year-round.

Participants:

Rebecca Cole-Will, Acadia National Park; Seth Benz, Schoodic Institute at Acadia National Park; Catherine Schmitt, Maine Sea Grant; Mark Berry, Schoodic Institute at Acadia National Park and Abe Miller-Rushing, Acadia National Park - moderators

Bringing our Lakes Alive through Education

Saturday, March 19; 1:30pm - 2:45pm

Cross Insurance Center, Meeting Rooms 3 & 4

Free Event

Participating MSF Partners:

Suggested audience: high school+

Maine Lakes Society

Event type: panel discussion

Lakes can be mysterious places. We swim in them, paddle on them, hike alongside them, enjoy their peaceful beauty, and many of us draw our drinking water from them. But, we don't often see what is hidden beneath the lake surface. Guided, hands-on exploration of our lakes and ponds can uncover a multitude of stories about the fish and wildlife that inhabit them, the water's response to weather and lakeshore activities, the myriad of plant life that grows there, and the ways we interact with these special features of our landscape. This panel reveals the excellent lakes education work underway state-wide, and offers ideas for teachers, lake stewards, lake associations and others interested in learning about lake ecology and how we can build new generations of lake lovers.

Participants:

Jennifer Jespersen, Ecological Instincts; Matt Leahey, Belgrade Regional Conservation Alliance; Cheryl Daigle, Maine Lakes Society - moderator

Science, Manufacturing, and Maine

Sponsored by Maine Heritage Timber

Saturday, March 19; 2:00pm - 3:30pm

WBRC

Free Event

Participating MSF Partners:

Suggested audience: high school+

WBRC

Event type: panel discussion

Manufacturing is much more vibrant in Maine than what you may think: it covers a wide-range of sciences and research areas, and includes much more than the paper mills of old. In this panel you'll hear from leading Maine manufacturers, and how they use science in both their manufacturing processes and in what they produce.

Participants:

Bill Belcher, Texas Instruments; David Eagleson, Baker Company; Fred Haer, FHC; Debbie Behrens, Coming; Jonathan Sprague, Rocky Coast Consulting - moderator

Owl Pellet Autopsy

Saturday, March 19; 2:00pm - 4:15pm

Maine Discovery Museum

Free Event; first come-first served (4 families/groups per session)

Suggested audience: 4 yrs+

Participating MSF Partners:

Event type: workshop

Children's Museum & Theatre of Maine

Kids of all ages will be drawn in by the fun filled force of our magnet experiments. Take a magnet through a maze & discover why magnets can levitate. Learn how like poles repel and opposites attract as we explore this strange and powerful force together.

Headliner Event: An Evening with Nate Silver

Sponsored by MPBN; Saturday Showcase Event

Saturday, March 19; 7:30pm

Hampden Academy Performing Arts Center

Tickets Required: \$15 for students, \$20 adults. Reserved Seating.

Suggested audience: high school+

Participating MSF Partners:

Event type: talk/discussion

Hampden Academy

Nate Silver, Statistician, Author and Founder of *FiveThirtyEight*, is the 2016 Maine Science Festival headliner. Come hear Nate discuss his work in politics and sports, and how he uses math as part of his journalism. A Q&A session will follow Nate's remarks.

Participants:

Nate Silver, FiveThirtyEight; Ben Sprague, City of Bangor - master of ceremonies



**NATE
SILVER**

 **FiveThirtyEight**

A woman with blonde hair is focused on her work at a laptop. She is using a yellow pencil and a ruler on a piece of paper in front of her. The background shows other people working at similar stations in a workshop or classroom setting.

FESTIVAL DAY 3

SUNDAY, MARCH 20

Designing a 3D graphic from photos and maps

So You Think You Know Math?

Sunday, March 20; 11:00am - 12:15pm

58 Main

Free Event

Suggested audience: high school+

Event type: panel discussion

Participating MSF Partners:

*58 Main, College of Liberal Arts & Sciences
at the University of Maine*

Mathematics is an underlying aspect of virtually every advance in science and technology today. From cryptography to smart phones, many of the items that we interact with on a daily basis rely on an understanding and use of math that goes far beyond (and is more interesting!) than what many of us learned in school. Join this panel for an introduction to math like you've never seen it: algebraic topology, mathematical biology, and actuarial science.

Participants:

Carrie Eaton, Unity College; Bob Franzosa, University of Maine; Lori Koban, University of Maine at Farmington; Peter Hardy, University of Maine at Farmington - moderator

Minecraft Workshop (2 sessions)

Sponsored by the University of Maine System

Sunday, March 20; 11:30am & 1:30pm

Coespace

Free Event; Pre-Registration is Required; limited space

Suggested audience: middle school

Event type: workshop

Minecraft is more than just a fun computer game - it's a powerful stepping stone to full-fledged computer programming. In this workshop, the Maine LearnToMod Project will introduce participants to the computer programming language JavaScript and increase mathematical thinking in a fun, hands-on approach utilizing Blockly as a stepping stone computer programming language. You'll learn the computational skills necessary to construct simple to advanced Mods, an alternation of original version, for Minecraft.

Participants:

*Ami Gaspar, University of Maine System, Advanced Computing Group,
Outreach Specialist*

Ice Cream for Science!

Sunday, March 20; 11:00am - 1:00pm

Fork & Spoon

Free Event; limited to 30; Pre-Registration Required

Suggested audience: all ages

Event type: workshop

Participating MSF Partners:

Fork & Spoon

Get to know your favorite icy treats a little better! Join Wild Cow Creamery to learn the science behind making, storing, and, of course, eating ice cream.

Verse in the Universe

Sunday, March 20; 11:30am - 12:30pm

Rock & Art Shop

Free Event

Suggested audience: all ages

Event type: performance/show

Participating MSF Partners:

Maine Lakes Society, the Rock & Art Shop,

University of Maine

Listen and reflect with this unique poetry reading addressing scientific themes and concerns.

Participants:

Francois Amar; Cheryl Daigle; Kathleen Ellis; Cameron Grover; Isaac Mansour;

Danielle Walczak

Aquaculture: Farming the Gulf

Sunday, March 20; noon - 1:15pm

Maine Discovery Museum

Free Event

Suggested audience: high school+

Event type: panel discussion

Participating MSF Partners:

Maine Discovery Museum, Maine Sea Grant,

University of Maine

Aquaculture - the farming of aquatic organisms - has been happening in Maine's coastal waters since the 1800s. Aquaculture farmers in Maine harvest over 30 million pounds annually, assisting Maine in feeding a growing population, creating employment, and increasing economic development. Find out how this \$130 million industry based around fin fish, clams & mussels, and sea vegetables impacts you.

Participants:

Susan Brawley, University of Maine; Ian Bricknell, University of Maine; Carter Newell,

Pemaquid Oyster Co/Pemaquid Mussel Farm; Paul Anderson, Maine Sea Grant &

Aquaculture Research Institute - moderator

Maine in Space

Sponsored by Emera Maine

Sunday, March 20; 1:00pm - 2:15pm

58 Main

Free Event

Suggested audience: high school+

Event type: panel discussion

Participating MSF Partners:

College of Engineering at the Univ. of Maine,

Challenger Learning Center of Maine, Univ of Maine

Maine has a long history of involvement with space exploration and research. This panel will introduce you to some of the current research and development happening right now as we push towards more space exploration.

Participants:

Ali Abedi, University of Maine; Bill Davids, University of Maine; Peter Homer, SpaceX

and Flagsuit; Susan Jonason, Challenger Learning Center of Maine - moderator

The Very Hungry Caterpillar Day with Tony Sohns aka The Bug Guy

Sunday, March 20; 1:00pm - 1:45pm
The Briar Patch

Free Event

Suggested audience: all ages

Event type: book reading/discussion

Participating MSF Partners:

The Briar Patch, The Rock & Art Shop

Celebrate the first day of Spring with the story of one of Nature's commonest yet loveliest marvels, the metamorphosis of the butterfly. Fun activities and storytime will be joined by a visit with Tony Sohns aka The Bug Guy.

The Story Collider

Sunday, March 20; 1:00pm - 3:00pm
Sea Dog Brewing Co. - Barrel Room

Free Event

Suggested audience: high school+

Event type: show

The Maine Science Festival is thrilled to partner with The Story Collider (<http://www.storycollider.org/>) for the first time! The Story Collider was founded in 2010 by Ben Lillie and Brian Wecht, two physicists who met at a storytelling show in Queens and quickly realized that they could do that too. Since then, The Story Collider has been bringing true, personal stories about science to life, both with live shows held throughout the country and in their weekly podcast. This is your chance to hear stories about science in Maine.

Science at the Bangor CSA Fair!

Sunday, March 20; 3:00pm - 5:00pm
Sea Dog Brewing Co. - Banquet Room

Free Event

Suggested audience: all ages

Event type: hands-on

While you explore the different Community Supported Agriculture that's available at the Bangor CSA fair, you can learn about some of the science that happens on Maine farms.

5 Minute Genius

Sponsored by Emera Maine, Sunday Showcase Event

Sunday, March 20; 3:30pm

Bangor Public Library, Lecture Hall

Free Event

Suggested audience: 12 yrs+

Event type: presentation

Participating MSF Partners:

Bangor Public Library, Bigelow Laboratory for Ocean Sciences, The Jackson Laboratory, Maine Medical Center Research Institute, MDI Biological Laboratory, University of Maine

This is the final event for the MSF, and your chance to learn about all different kinds of science happening throughout Maine in one sitting. Our scientist presenters have 5 minutes to explain their work in non-jargon terms, and then there's 5 minutes of questions from the audience. The work that is highlighted is "rock star" work: remarkable, cutting-edge science happening in Maine. You will feel like a genius in no time! Want more? Stick around for Q&A and a reception after this closing event.

Participants:

- *Habib Dagher, University of Maine. Title: "The Offshore Wind Gas Station"*
- *Scott Dobrin, University of Maine at Presque Isle. Title: "A-maze-ing Bees: Solving mazes, learning faces, and saving the honey bee"*
- *Vivek Kumar, The Jackson Laboratory. Title: "Modeling addictive behaviors in mice"*
- *Susan MacKay, Cerahelix. Title: "A New Twist in Filtration- Using DNA as a "generic" material to make a better filter"*
- *Leif Oxburgh, Maine Medical Center Research Institute. Title: "Can we make new kidneys in the lab?"*
- *Nicole Price, Bigelow Laboratory for Ocean Sciences. Title: "Healthy oceans, healthy people: building a more resilient Maine coast"*
- *Aric Rogers, MDI Biological Laboratory. Title: "Increasing the healthy span of life with anti-aging therapeutics: A new frontier in biomedicine"*
- *Kate Dickerson, Maine Science Festival - moderator*



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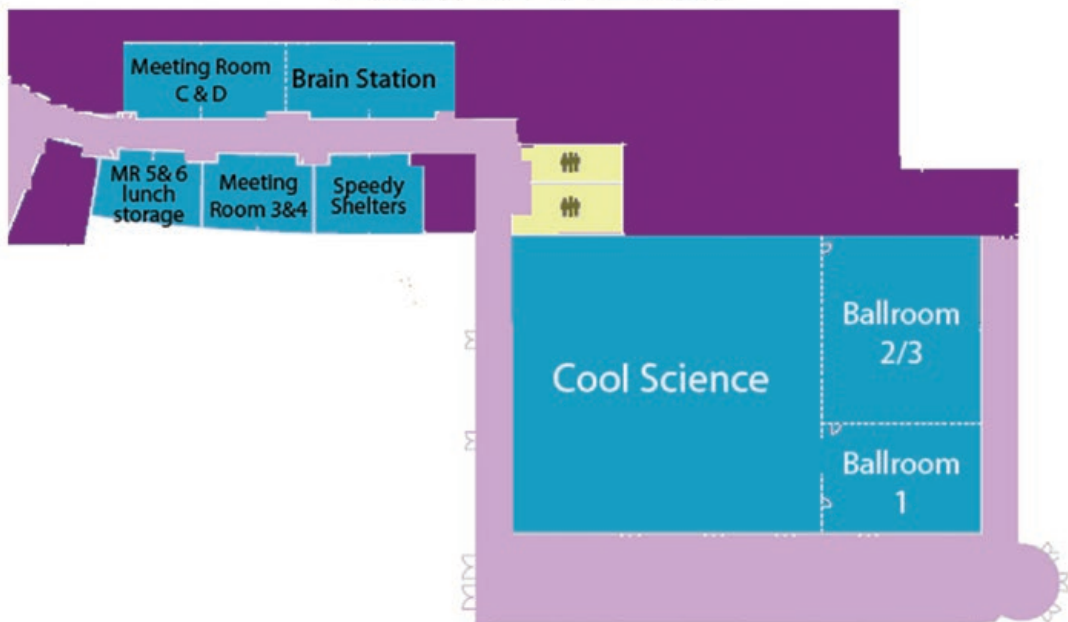
Summer camps, after school Discovery Clubs, weekday preschool programs, weekend family science programs, aquaculture programs, Nano Days, and more!

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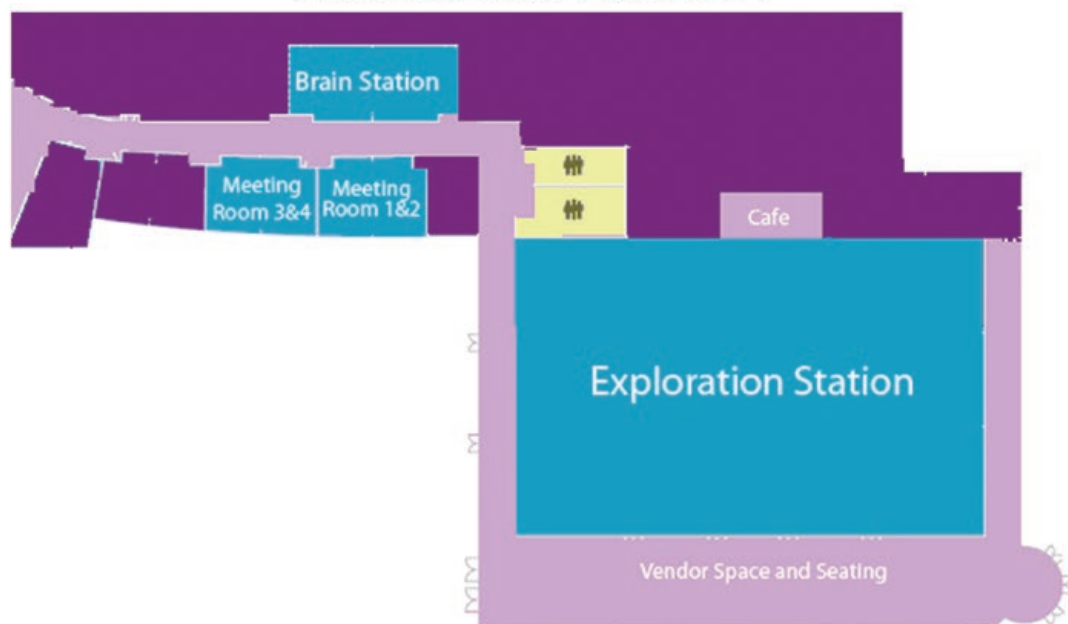
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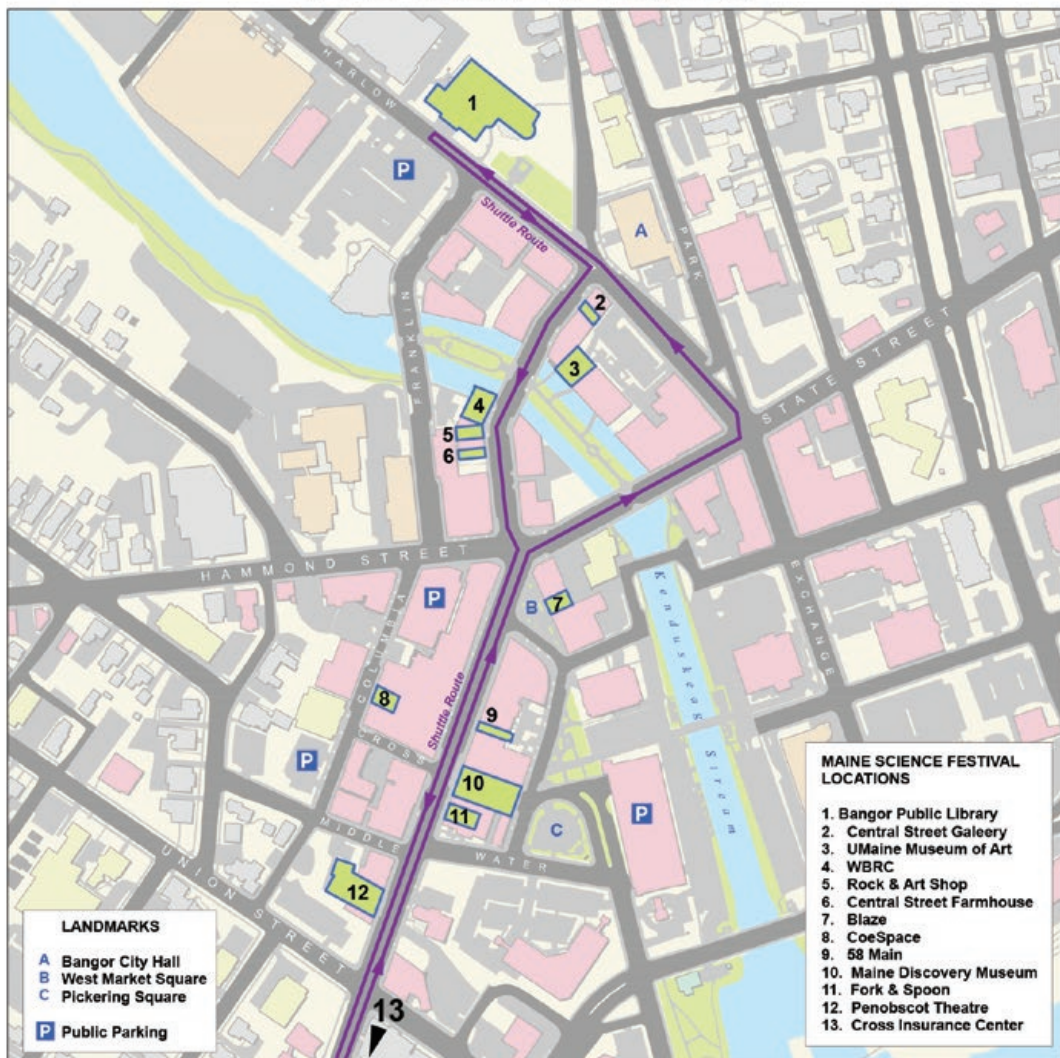
CROSS INSURANCE CENTER FRIDAY LAYOUT



CROSS INSURANCE CENTER SATURDAY LAYOUT



FESTIVAL VENUES



LANDMARKS

- A Bangor City Hall
- B West Market Square
- C Pickering Square
- P Public Parking

MAINE SCIENCE FESTIVAL LOCATIONS

1. Bangor Public Library
2. Central Street Gallery
3. UMaine Museum of Art
4. WBRC
5. Rock & Art Shop
6. Central Street Farmhouse
7. Blaze
8. CoeSpace
9. 58 Main
10. Maine Discovery Museum
11. Fork & Spoon
12. Penobscot Theatre
13. Cross Insurance Center

Bangor Public Library - 145 Harlow Street

Central Gallery - 89 Central Street

UMaine Museum of Art - 40 Harlow Street

WBRC - 44 Central Street

Rock & Art Shop - 36 Central Street

Central Street Farmhouse - 30 Central Street

Blaze - 18 Broad Street

Coespace - 48 Columbia Street

Maine Discovery Museum - 74 Main Street

Fork & Spoon - 76 Main Street

Penobscot Theatre - 131 Main Street

Cross Insurance Center - 515 Main Street

Hampden Academy Performing Arts Center

Weatherbee Drive, Hamodden, ME

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4-H
58 Main
Axiom Education & Training Center
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Bangor Region Chamber of Commerce
Bangor Symphony Orchestra
Bangor Y
Bigelow Laboratory for Ocean Sciences
Bioscience Association of Maine
Blaze
The Briar Patch
Central Street Farmhouse
Challenger Learning Center of Maine
Children's Museum & Theatre of Maine
Darling's
Downeast Institute for Applied Marine
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Emera Astronomy Center
Emera Maine
Fork & Spoon
Girl Scouts of Maine
Gulf of Maine Research Institute
Habitat for Humanity of Greater Bangor
Hacktivate
Hampden Academy
Hurricane Island
Husson University
The Jackson Laboratory
Kennebec River Biosciences
Launchpad
Mad Science Maine
Maine Campus Compact
Maine Department of Education,
Learning Through Technology Team
Maine Discovery Museum
Maine Education Association
Maine EPSCoR
Maine FabLab
The Maine Game
Maine Lakes Society
Maine Maritime Academy
Maine Math & Science Alliance
Maine Medical Center Research Institute
Maine Robotics
Maine School of Science and Math
Maine Sea Grant
Maine State Science Fair
Maine Writing Project
MDI Biological Laboratory
Mount Washington Observatory (NH)
Penobscot Theatre Company
Portland Public Library
Portland Science Center
Project Login
The Rock & Art Shop
Saco River Dyehouse
Schoodic Institute at Acadia National Park
Senator George J. Mitchell Center for
Sustainability Solutions
The Telephone Museum
University of Maine
University of Maine Advanced Structures
and Composites Center
University of Maine College of Engineering
University of Maine College of
Liberal Arts & Sciences
University of Maine Cooperative Extension
University of Maine Foster Innovation Center
University of Maine Museum of Art
University of Maine RISE Center
University of Maine VEMI Lab
University of Maine WiSe-Net Lab
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