

**ANNUAL REPORT
2021–2022**

**EMPOWERING EDUCATORS,
INSPIRING STUDENTS,
DEFINING THE FUTURE.**



MMSA

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We have WeatherBlur to thank for inspiring us to become beautifully curious about the world around us. We've been inspired to record our inquiry and share it with each other. These shared nature experiences have not only been good for our mind, but also our soul. It has deepened our appreciation and respect for all living organisms in nature. Science is no longer "a subject" to learn, it is real life where we are becoming vehicles for positive change within our local community.

**RACHEL WHITEHEAD
SARAH ABBOTT
BRIGETTE DUMONT**

Today you made me feel like a teacher again. These past two years have been tough and to be able today to think about how to be a better teacher and ways to improve my thinking is invaluable.

LYNN Middle-Level Teacher

MMSA supported me as we unpacked existing computer science resources then found ways to make them my own. As we shared what we were doing with others, I began to see that we are really onto something here—we are really defining the future of what STEM education could look like in rural classrooms!

ALICE LEE 2nd grade teacher,
Crecent Park School

A MESSAGE FROM THE EXECUTIVE DIRECTOR

Educators have TRULY been the heroes of the last few years.

They have met every challenge thrown their way as our understanding of the pandemic evolved over time. I won't sugarcoat it, these years have been extremely difficult on the education sector and educators specifically. Through all of the ups and downs, tears and fogged-up glasses, virtual classes, and figuring out how to make hybrid workshops flow - all of us here at MMSA have been supporting educators through every step of the maze that was and still is pandemic-era education.

MMSA is beyond grateful to the educators that continue to partner with us through thick and thin, and we are honored and proud to have not just consistently served educators but to have actually INCREASED our impact to serve more educators across Maine and the nation over this past year and throughout the pandemic.

Over this tumultuous period our staff has grown to meet the demand for STEM professional learning we heard from the field - and we were able to recruit top-tier talent from across the nation to our growing organization during a labor shortage.

This past year (2021-22) we celebrated the beginning of the scale-up of the ACRES project thanks to funding from the National Science Foundation, expanding our computer science education integration programming thanks to support from the Harold Alfond Foundation, and building new relationships with organizations and individuals to broaden the participation of women, new immigrants, and BIPOC youth in STEM education.

In this 22-23 school year MMSA is celebrating our 30th anniversary! Can you believe it—30 years of supporting educators in STEM education innovation? As we all emerge into this new world, and MMSA's next generation of programming, I can only imagine what MMSA and the educators we partner with will accomplish in the years ahead. Today we ask you to join this community of change-makers and offer your support to MMSA as we increase access to STEM learning for all so that today's youth can become informed voters, decision-makers, critical thinkers, and STEM literate societies we will need in the years ahead.

RUTH KERMISH-ALLEN, PHD
Executive Director



**see our
current
projects!**

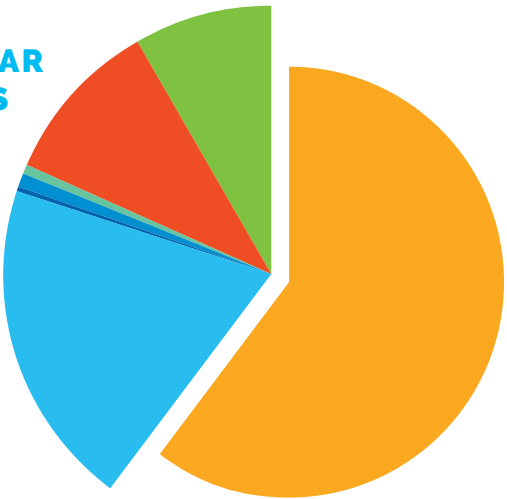
mmsa.org/our-work/current-projects



TOTAL FY22
BUDGET:
\$4,454,897

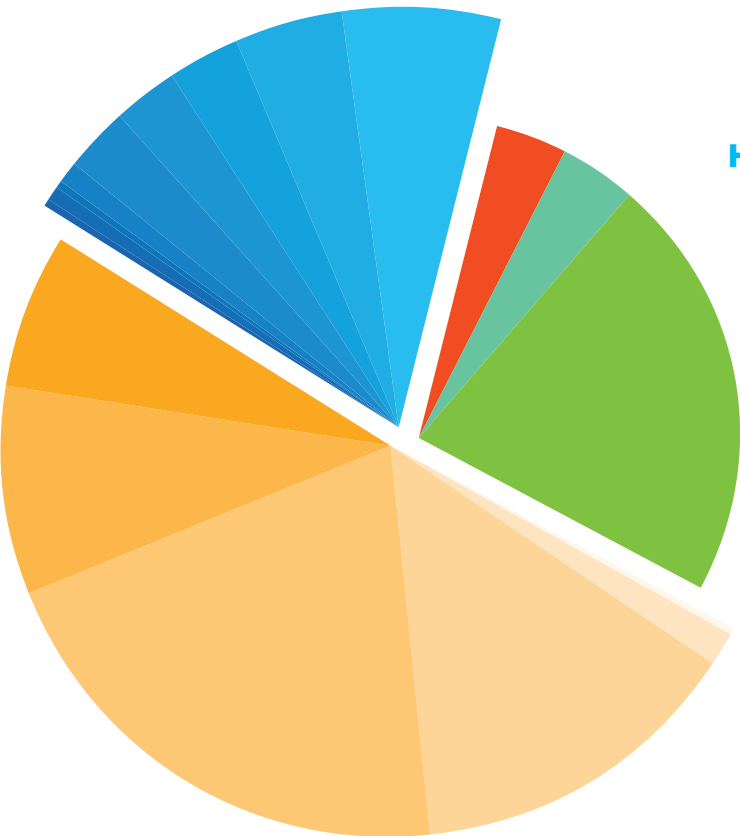
FISCAL YEAR
FUNDING SOURCES

- FEDERAL 60.5%
- NON-FEDERAL 19.6%
- INDIVIDUAL 0.4%
- MAINE DOE 0.7%
- OTHER 0.6%
- CORPORATE 10%
- EARNED 8.3%



HOW FUNDS ARE SPENT

GENERAL ADMIN	\$932,000	NON-FEDERAL GRANTS
CONTRACTED PROJECTS	\$168,000	
CONSULTING	\$148,000	
REACH	\$264,000	
TEACH ME OUTSIDE	\$185,000	
WORKFORCE READY	\$121,000	
PISCES	\$106,000	
MATH FOR MAINE	\$101,000	
NUMERACY IN NATURE	\$41,000	
MATH LITERACY PILOT	\$10,000	
RETHINKING SCIENCE ED	\$22,000	
COMMUNITY CONVERSATIONS	\$10,000	
NSFCS STEMPORTS	\$285,000	FEDERAL GRANTS
NSF WEATHERBLUR	\$369,000	
NSFHR PEBLES	\$883,000	
NSF ACRES	\$605,000	
NSF INCLUDES	\$52,000	
NSF AR GIRLS	\$11,000	



Thank you
to those who responded to our call
for sponsors for our capital campaign
to support setting up our new office
space: we are so grateful to you!



Elsie & William Viles Foundation

WE ARE GRATEFUL TO ALL OF
OUR ANNUAL FUND DONORS
AND WOULD LIKE TO GIVE
AN EXTRA THANKS TO THOSE
WHO GAVE \$1,000 AND MORE

- Anonymous

Susan & Richard Bates

The Brown Family Fund

David Coit

Jennifer Gagner
- Robert Kelley

Kevin London

Dianne Rekow

Burak Sezen

Kristin & Warren Valdmanis

INNOVATOR | \$5K-\$10K

CATALYST | \$1K-\$5K

Project Funders

Our work would not be possible without the grants that support our core projects in STEM education. From multi-million dollar grants over multiple years to smaller \$5,000 annual experimental projects that assist in building relationships with new partners - every \$ matters!



Elmina B. Sewall
FOUNDATION



Google Research



LEONARD C. & MILDRED F.
FERGUSON FOUNDATION



MARGARET E. BURNHAM
CHARITABLE TRUST

THE BETTERMENT FUND
CREATED BY THE WILL OF WILLIAM BINGHAM 2ND



STEM Competition Sponsors

Thank you to our corporate sponsors of the Maine State Science Fair, Middle School Science Fair, and Destination Imagination.



Colby



IEEE MAINE

BROADCOM
FOUNDATION

EMERALD
\$10,000+

RUBY
\$5,000+

TOURNALINE
\$2,500+

TANZANITE
\$1,000+

Our Projects

STEM Workforce Ready

WFR is creating a network of teacher leaders across Maine who are committed to increasing equitable access to computer science learning in rural PreK-8 classrooms.

“
TO BE ABLE TODAY TO
THINK ABOUT HOW TO
BE A BETTER TEACHER
AND WAYS TO IMPROVE
MY THINKING IS
INVALUABLE



mmsa.org/projects/stem-workforce-ready-2030/

LYNN HANNA
Middle-Level Teacher
Connors Emerson School, Bar Harbor

COMMUNITY CONVERSATIONS

Maine has a growing diverse, non-white population fueled in part by immigrants and refugees to Portland, Lewiston and other areas. Programming we create needs to focus on the strengths of this community and value diversity of thoughts. Funded by a grant from UNUM, we are collaborating with Cross Cultural Community services to host conversations with community partners in order to better understand the needs and assets of this population.

”
NEWLY RESETTLED STUDENTS CAN EQUAL INNOVATION - JUST TAP INTO THE WEALTH OF THE IMMIGRANT COMMUNITY

DEQA DHALAC
Mayor, South Portland

NEW PROJECT!

PLAY

SUPPORTING PLAY-BASED ENGAGEMENT WITH SCIENCE AND ENGINEERING PRACTICES IN EARLY LEARNING ENVIRONMENTS

NEW PROJECT!

In collaboration with Bowdoin College, this project will explore how preschoolers and kindergarteners can engage in science and engineering practices through play. Professional learning and peer coaching sessions will support early childhood educators to enhance and extend children's play-based learning.

”
WHEN PROVIDED WITH OPEN-ENDED MATERIALS AND AN ABUNDANCE OF TIME, CHILDREN DO THEIR MOST VALUABLE LEARNING THROUGH PLAY

JESSICA LEWIS
Owner, Director, and Teacher
Inch by Inch Preschool



mmsa.org/projects/play



This project is funded by the National Science Foundation, grant #2201674. Any opinions, findings, and conclusions or recommendations expressed in these materials are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.




WeatherBlur

WeatherBlur is a student-led, place-based, citizen science program that promotes scientific and environmental literacy by engaging students in close collaboration with scientific experts in field-based projects. This program links Computational Thinking with citizen science and civic engagement through student-led projects.

“THE STUDENT-DRIVEN INQUIRY NATURE OF WEATHERBLUR AND THE CONNECTION TO SCIENTISTS SHOWS STUDENTS THAT THEIR THINKING AND IDEAS ARE VALUABLE”

ABBY PLUMMER
Edna Drinkwater School

iwondersls.com







REACH

Reach provides an outlet for Maine youth who want to take deep dives into STEM. We give year-round support to educators and students who take part in our three competitions: Maine State Science Fair, Destination Imagination, and Maine Middle School Science & Engineering Fair.

“I REALLY AM A BIG SCIENCE NERD, AND I WANT TO GET THE MOST OUT OF MY HIGH SCHOOL EDUCATION. I ENJOY DELVING INTO SOMETHING DEEPLY, AND THE SCIENCE FAIR GIVES ME AN OPPORTUNITY TO DIVE INTO A SUBJECT INTENSELY”

EMMA MARKOWITZ
Student





STEMports

STEMports brings a unique educational experience to your fingertips using augmented reality. Created through an NSF grant and partnership with Field Day Lab, students can explore, observe, and discover their community through a whole new lens. From coastal wetlands to inland forests, STEM learning can be found wherever you take your phone.



**IF THIS IS A WAY TO GET KIDS
ENGAGED IN THE FOREST,
TO GET KIDS OUT LEARNING,
THEN I THINK THAT'S A WIN**

NOAH GLEASON-HART
Low Impact Forestry
Specialist at MOFGA

stemports.com



ACRES

ACRES is a nationally acclaimed virtual coaching program that builds knowledge and skills so afterschool educators, librarians, and anyone who works with youth in out-of-school settings can confidently facilitate Science, Technology, Engineering, and Math (STEM) experiences for youth. If educators invest their time, MMSA and the National Science Foundation will invest in them and cover the expenses of this professional development. The ACRES project has engaged educators from 44 states.



mmsa.org/projects/acres



**ACRES IS A WAY TO
IMPROVE YOUR STEM
PROGRAMMING BY
REALLY ALLOWING
THE STUDENTS TO BE
IMMERSED IN THEIR OWN
LEARNING AND TO MAKE
IT MORE INTERESTING
AND ACCESSIBLE**

MARY HURLEY
Mineola Memorial Library



CONSULTING SERVICES



MMSA provides consulting services that include professional learning, coaching, curriculum review and development, and program evaluation. We seek to understand and meet the needs of educators as we partner to more productively engage students in science, mathematics, and integrated STEM education through meaningful longer-term support. Our team has considerable practical experiences in formal, non-formal, and informal K-12 and postsecondary environments.

OUR MMSA CONSULTANT HAS REVITALIZED NOT ONLY OUR SCHOOL'S MATH PROGRAM, BUT OUR COLLECTIVE ENTHUSIASM FOR TEACHING MATH AND EMPOWERING STUDENTS TO THINK MATHEMATICALLY. I FEEL BOTH LISTENED TO AND PUSHED TO CHALLENGE INTERNALIZED IDEAS OF WHAT MATH SUCCESS FOR MY STUDENTS LOOKS LIKE

JUSTINE APPEL
Brooksville Elementary School



mmsa.org/professional-learning-opportunities

Teach ME Outside



Teach ME Outside (TMO) supports and works in partnership with Maine communities to ensure that all Maine youth have access to powerful, culturally relevant, hands-on, environmental learning opportunities. This collaborative project works toward achieving that goal by utilizing a strategic and data-informed process to develop supports for educators and to inform policy. TMO began by building on data from the 2019 Census of Community-Based Environmental Learning in Maine. This data led to investment and development of community-designed professional learning, culturally responsive evaluation support, network-building, advocacy, and increased outreach and communication across the state. TMO is led by a partnership between the Maine Mathematics and Science Alliance, Maine Environmental Education Association, and Nature Based Education Consortium.

HAVING THE CENSUS DATA FOR MAINE HAS BEEN SO POWERFUL IN HELPING US UNDERSTAND WHERE COMMUNITY-BASED ENVIRONMENTAL LEARNING IS HAPPENING AND WHERE WE NEED TO FOCUS MORE OF OUR ENERGY IN EXPANDING OPPORTUNITIES FOR YOUTH IN MAINE

OLIVIA GRISET
Executive Director, Maine Environmental Education Association

teachmeoutside.org



PeBLES2

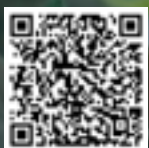


WE ARE WORKING IN THE SWEET-SPOT BETWEEN HIGH-QUALITY INSTRUCTIONAL MATERIALS, INNOVATIVE PROFESSIONAL LEARNING, AND INDIVIDUAL TEACHER KNOWLEDGE AND EXPERTISE. IN DOING SO, WE AIM TO ELEVATE TEACHER VOICES AND EXPERTISE AND AUTHENTICALLY ENGAGE STUDENTS IN MEANINGFUL SCIENCE SENSEMAKING

DR. KATE COOK WHITT
Principal Investigator

PeBLES2 is designing instructional materials and professional learning for elementary science to support teachers in making locally and culturally relevant adaptations to phenomena. Together with teachers, we are investigating how teachers use and grow with our designed materials over time.

mmsa.org/projects/pebles2



ELEVATING STUDENT VOICE AND CHOICE THROUGH MATHEMATICAL MODELING

**FUNDED BY UNUM
EQUITABLE PATHWAYS**

With funding from Unum Equitable Pathways, we are developing and piloting a course focused on supporting teachers in math modeling that's responsive to student voice and choice. Participating teachers engage in math modeling, connecting with industry professionals, and practicing facilitating math modeling tasks driven by students' interests and choices.

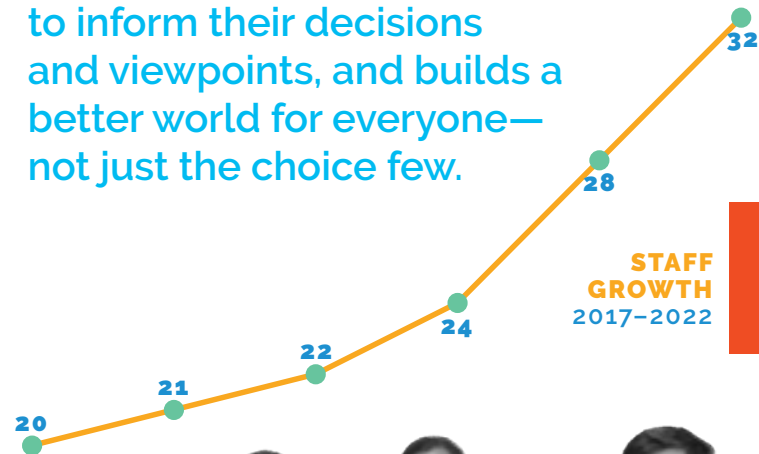
I LOVE THE OPPORTUNITY TO CONNECT WITH OTHER TEACHERS WHO ARE SO EQUALLY INVESTED IN MANAGING INEQUITY IN THE CLASSROOM AND EMBRACING “NON-TRADITIONAL” TEACHING!

PARTICIPANT
Anonymous

Organizational Growth and Looking Forward

We are committed to our mission and vision for a future where everyone in our society can solve problems collaboratively, uses evidence to inform their decisions and viewpoints, and builds a better world for everyone—not just the choice few.

FISCAL YEAR	OPERATING BUDGET
2017	\$2,668,232
2018	\$3,292,326
2019	\$2,844,104
2020	\$3,185,161
2021	\$3,386,831
2022	\$4,454,897



We are very proud of what we were able to accomplish during the 21-22 school year given the challenges the pandemic presented: We were able to increase our educator reach to over 1,000 nationally!

IF EACH OF THESE EDUCATORS WORKS WITH JUST 20 YOUTH THIS YEAR, WHICH IS A VERY LOW ESTIMATE, MMSA WILL HAVE IMPACTED THE LIVES OF 40,000 YOUTH IN JUST ONE YEAR!

727
formal k-12 educators

333
afterschool educators

1,060
educators nationally

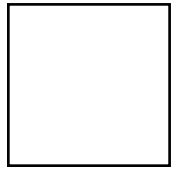
197
community members



MMSA SCHOOL AND COMMUNITY PARTNERS ACROSS THE STATE OF MAINE AND THE COUNTRY



18
states reached
2021-2022



**SUPPORTING EDUCATORS,
EMPOWERING STUDENTS,
DEFINING THE FUTURE.**