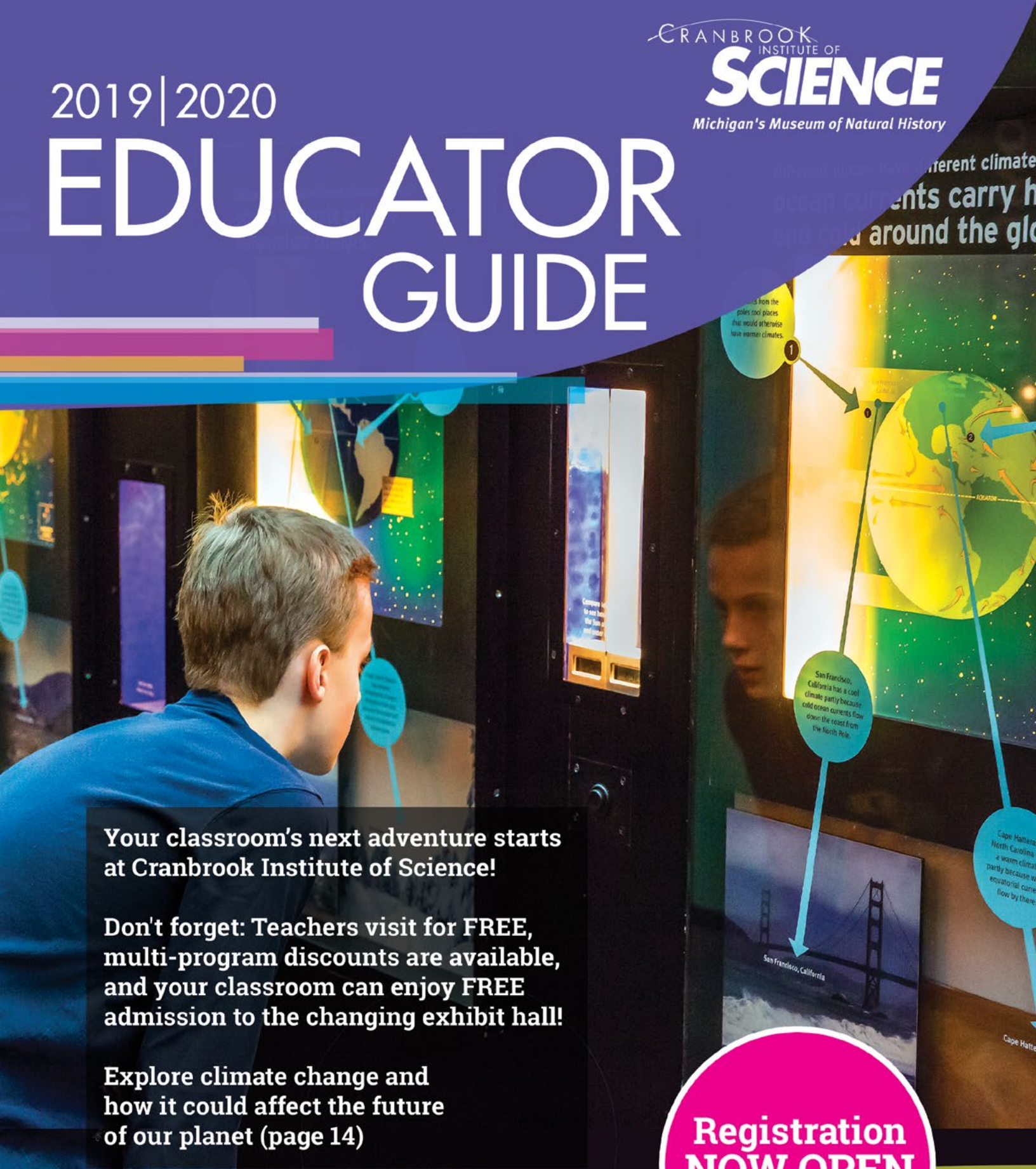
CRANBROOK INSTITUTE OF SCIENCE

Michigan's Museum of Natural History

2019|2020

EDUCATOR GUIDE



Your classroom's next adventure starts at Cranbrook Institute of Science!

Don't forget: Teachers visit for FREE, multi-program discounts are available, and your classroom can enjoy FREE admission to the changing exhibit hall!

Explore climate change and how it could affect the future of our planet (page 14)

Registration NOW OPEN

science.cranbrook.edu/educators

LET US **SPARK** YOUR STUDENTS' CURIOSITY

Plan your next field trip at Cranbrook Institute of Science. We can also come to you with our *Science on the GO!* or visit you, virtually, with *Science on the SCREEN!*

Why choose us?

We have more than 200,000 artifacts, real fossils and meteorites, active scientists, and we are educators, too. We deeply value your commitment to teaching young minds, and we want to join you on that journey.

Choose from more than 80 programs to enhance your curriculum. Options you'll read about here include chemistry, anthropology, earth science, astronomy, life science, physics, and engineering.

While you're on-site, you can also immerse your students in the full museum experience including our newest *Robot Revolution* exhibit, planetarium shows, and nationally acclaimed exhibits.

REGISTRATION NOW OPEN!

Field trips at the Institute of Science are available October 2, 2019 through June 5, 2020. *Science on the GO!*, *Science on the SCREEN!*, and the *Acheson Mobile Planetarium* are available year-round.

Register online science.cranbrook.edu/educators
or give us a call at 248.645.3210,
Monday – Friday, 8am – 4:30pm.

Our four easy steps on page 32 will guide you through registration and your visit.

Can't decide on your perfect program? We're happy to build an experience just for you. Have a vision for your group? Call us to register and we'll work with you to make it happen.

Whether in your class or at the Institute, programs are aligned with the Michigan K-12 Science Standards with an emphasis on your group's grade level.

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WELCOME TO CRANBROOK INSTITUTE OF SCIENCE

Cranbrook Institute of Science is a remarkable natural history museum that advances scientific literacy, nurtures curiosity, and encourages advocacy for our natural and cultural worlds. At the Institute, students discover the wonder of the natural world and develop a better understanding of how science impacts their daily lives.

Our educators are experts in their fields with knowledge of astronomy, geology, natural history, watershed education, climate change, archaeology, Native American studies, dinosaurs, paleontology, engineering, earth science, water-related topics, and so much more.

In this guide you'll find 80+ programs that will deepen your students' scientific understanding. We can't wait to see you!

"Educators have told us they love our field trips because children can experience a vast range of science related learning under one roof. We provide an authentic interaction with history and science and are happy to customize programming to meet classroom needs."

-Nancy Swords, deputy director, Cranbrook Institute of Science

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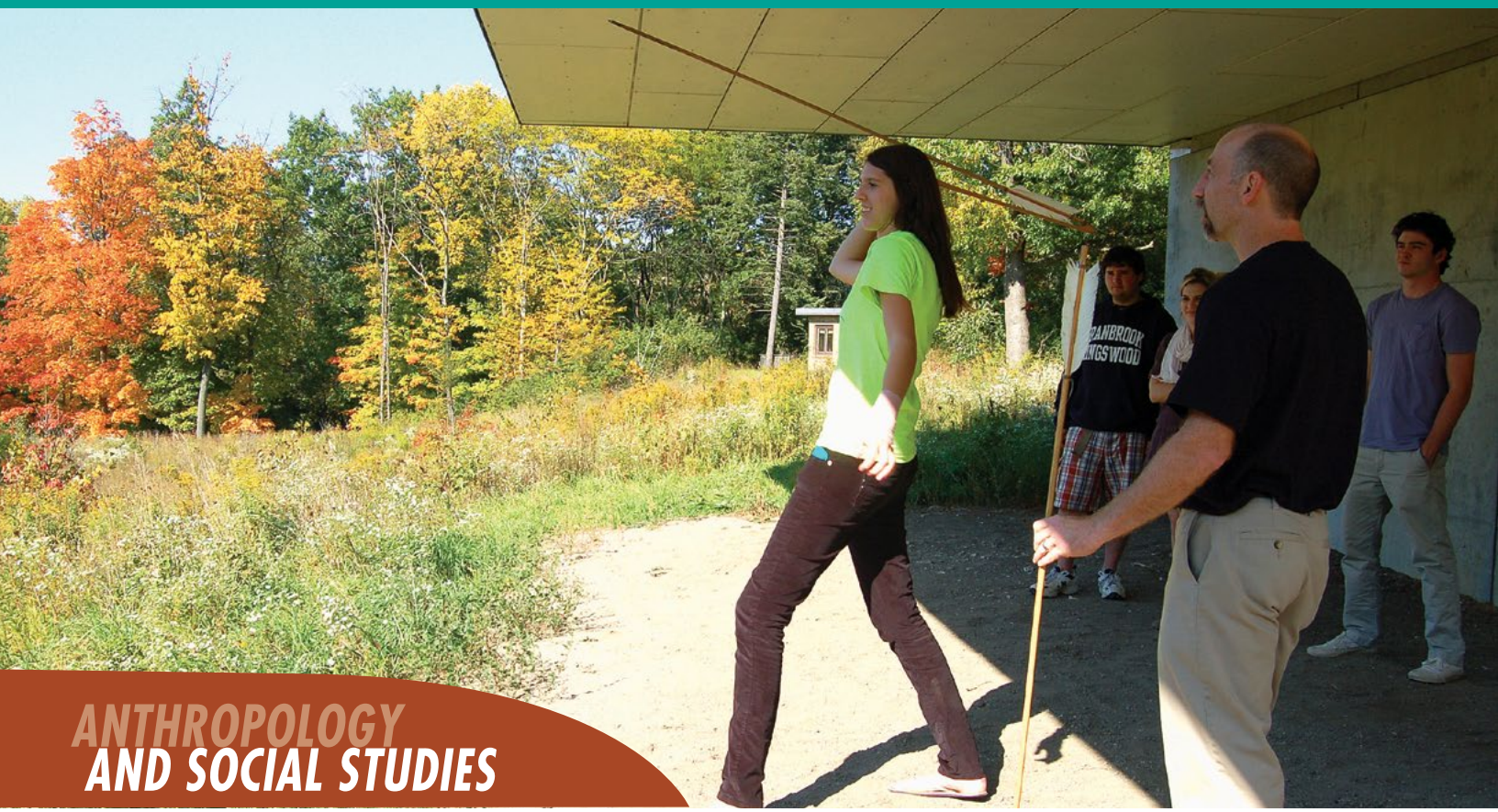
COME TO US!

FIELD TRIPS AT THE INSTITUTE



ANTHROPOLOGY AND SOCIAL STUDIES

ARCHAEOLOGY EXPEDITION

GRADES 3 4 5 6

Students will become archaeologists and excavate a simulated archaeological dig site to unearth artifacts. After mapping, recording, and interpreting their findings, they'll piece together what life was like for the earliest inhabitants of Michigan.

Offered Oct. 2 – Nov. 22, 2019 and April 8 – June 5, 2020. This program occurs outdoors; dress appropriately for the weather.

BODIES BOUNDING!

GRADES K 1 2

Ever wonder how a human skeleton compares to a cat or bird? The structure of a human body is a compilation of advanced intellect and diverse cultures, making us one of Earth's most unique creatures. Through physical play and observation of Institute animal collections, students will investigate the uniqueness of the human body compared to other species.

Expect modest, yet fun, physical activity for a portion of the program. Modifications for special needs will be made whenever possible.

FRONTIER MICHIGAN

GRADES K 1 2 3

Travel through time and have your students explore Michigan during the late 18th century when fur traders, Native Americans, farmers, shopkeepers, soldiers, tradesman, and servants mingled on city streets and rural pathways. The history of Michigan comes to life through hands-on materials with a focus on labor, community roles, and the influence of the Great Lakes.

FUR TRADE HISTORY ALIVE!

GRADES 3 4 5 8

Delve into the world of 18th century French fur traders and their Native American counterparts. This program takes place in an authentic Great Lakes wigwam and includes hands-on experiences with tools and fur pelts. Get a glimpse into Michigan's unique history through the indigenous peoples' customs and views on trade, land use, and diplomatic relationships.

This program occurs outdoors; dress appropriately for the weather.

HUMANITY IN MOTION

GRADES 5 6 7 8

Get your students up and moving while exploring the diversity of cultures around the world through dance, sports, martial arts, and other forms of human movement during different time periods. Students will find themselves square dancing, doing a yoga sun salutation, or playing a Mayan ball game!

Expect modest, yet fun, physical activity for a portion of the program. Modifications for special needs will be made whenever possible.

MONEY!

GRADES 3 4 5

Exercise your students' math skills to help them develop an understanding of the importance of fiscal responsibility, and how economics impacts their daily lives. Games and activities illuminate the role of scarcity that drives human activities to meet our wants and needs.

STARS OF THE PHARAOHS

GRADES 3 4 5 6 7 8 9 10 11 12+

Travel to ancient Egypt to see how astronomy was used to tell time and align huge buildings. Learn about the connection the ancient Egyptians felt with the stars and various astronomical phenomena. See some of the most spectacular temples and tombs of the ancient world.

This program takes place in the Acheson Planetarium.

THE PEOPLE OF THE THREE FIRES

GRADES 3 4 5 8

Enter the world of the Ottawa, Ojibway, and Potawatomi tribes, also known as *The People of the Three Fires.* Explore their language, sports, art, and cultural ideas (both past and present) through artifacts and interactive games.

ASTRONOMY & SPACE SCIENCE

All programs in astronomy and space science take place in the Acheson Planetarium.

COSMIC COLORS - AN ADVENTURE ALONG THE SPECTRUM

GRADES 7 8 9 10 11 12+

Journey with us across the entire electromagnetic spectrum. Discover the many reasons for color – why is the sky blue, why is Mars red? Take a tour within a plant leaf and journey inside the human eye. Investigate x-rays by voyaging to a monstrous black hole and then back at your doctor's office. You will even see the actual color of a dinosaur—based on recent evidence.

EVOLUTION OF THE STARS

GRADES 8 9 10 11 12+

Learn about the evolution of the stars, and the sun in particular, in this energetic, informative program. From the turbulent cauldron of their birth through the multitude of cataclysmic ways they can meet their end, discover the many untold secrets of the stars.

This is a partially live-narrated program.

NIGHT SKY OBJECTS AND BEYOND

GRADES 3 4 5 6 7 8 9 1 0 11 12+

Find the Big Dipper, North Star, planets, and constellations in the current sky. Observe the apparent motion of the sky and venture into interstellar space to explore our starry home—the Milky Way Galaxy—in stunning three-dimensions!

This partially live-narrated program is updated weekly to reflect the latest astronomical discoveries or topics of interest.

ONE WORLD, ONE SKY: BIG BIRD'S ADVENTURE

GRADES P K 1 2 3

Join Big Bird, Elmo, and Hu Hu Zhu on an exciting discovery of the sun, moon, and stars. Find the Big Dipper and the North Star. Take an imaginary trip that explores the differences between the moon and Earth. Join them back on Earth to celebrate the idea that even though they live in different countries, they still share the same sky.

REASON FOR THE SEASONS

GRADES 4 5 6 7 8 9 10 11 12+

Could the seasons and the ever-changing night sky be linked? Find out in this dynamic, live presentation demonstrating why the start of the seasons depends on your location on Earth, as well as Earth's position around the sun. Observe the sun's altitude and daily motion from various latitudes and discover why your favorite constellations aren't visible every night.

This is a partially live-narrated program.

SEASON CHANGES & MOON PHASES

GRADES 4 5 6 7 8 9 10 11 12+

Discover the reason for the seasons in this live presentation! Learn why the start of the seasons depends on your location on Earth, as well as Earth's position around the sun. Observe the sun's altitude, daily motion from various latitudes, visit Mars, discover the phases of the moon, and uncover the mysteries of both solar and lunar eclipses.

This is a live-narrated program.

SECRET OF THE CARDBOARD ROCKET

GRADES K 1 2 3 4

Join two young adventurers as they turn an old cardboard box into a rocket and blast off on an out-of-this-world adventure to the most amazing places in the solar system! On the journey, they'll visit the planets in our solar system and learn what makes each one unique.

This program is available in either a 30– or 40–minute format.

SOLAR SYSTEM EXPLORATION

GRADES 4 5 6 7 8 9 10 11 12+

Through this in-depth experience, explore the planets in our solar system, from their formation billions of years ago, to the current robotic missions sent to unlock their secrets. Learn about the latest discoveries of comets, moons, and icy bodies in the Kuiper Belt and beyond. See what the planets look like in the night sky and how they move along their orbits over time.

This is a live-narrated program.

STORIES IN THE STARS

GRADES 5 6 7 8 9 10 11 12+

Travel to the Isle of Crete where the legends of Zeus, Hercules, Orion, Perseus, Medusa, and many others come to life. The Ancient Greeks and Romans may not have understood the nature of the stars, but they certainly had vivid imaginations as they created their mythological legends and stories while looking at them.

This is a live-narrated program.

YOUNG STARGAZERS SKY JOURNEY

GRADES P K 1

Together, let's make the sky turn dark and sprinkle it with stars. During this program, your students will embark on a mesmerizing and educational journey through space, watching the moon change phases, telling stories by playing with connect-the-dot stars, and traveling to the eight planets in our solar system – and even Pluto!

This is a live-narrated program.

PLANETARIUM ENTERTAINMENT

All programs in entertainment take place in the Acheson Planetarium.

CHRISTMAS LIGHTS!

GRADES K 1 2 3 4 5 6 7 8 9 10 11 12+

Immerse yourself in the holiday spirit with dazzling digital effects choreographed to classic wintry tunes and Christmas music, including: *"Wizards in Winter," "Jingle Bell Rock," "Merry Little Christmas," "Rudolph the Red-nosed Reindeer," "White Christmas," "Winter Wonderland,"* and more.

Offered Nov. 1 – Dec. 20, 2019.

LET IT SNOW

GRADES P K 1 2 3 4 5 6 7 8 9 10 11 12+

An energetic, fun, and entertaining adventure for all ages, *Let It Snow* features festive classics from Frank Sinatra, Chuck Berry, Burl Ives, and Brenda Lee. Students will be mesmerized by a stunning, multi-media finale by the Trans-Siberian Orchestra.

Offered Nov. 1 – Dec. 20, 2019.

MYSTERY OF THE CHRISTMAS STAR

GRADES 3 4 5 6 7 8 9 10 11 12+

Journey to Bethlehem as we examine the possible scientific explanation for the Star the Magi followed to find baby Jesus. Using recorded sightings of significant astronomical occurrences during related historical events, we'll investigate possible dates for the birth of Jesus, which have been investigated by historians for centuries.

Offered Nov. 1 – Dec. 20, 2019.

SPACEPARK360

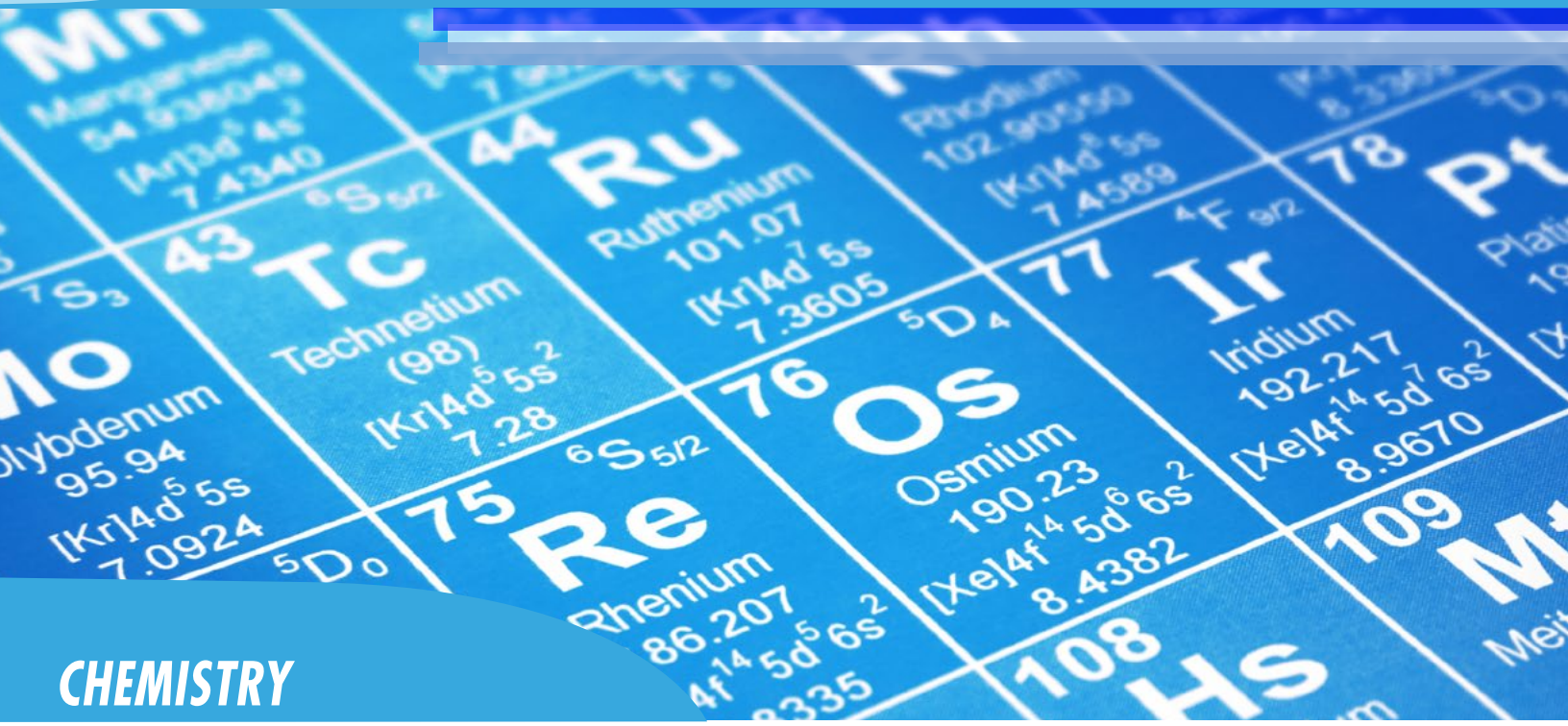
GRADES K 1 2 3 4 5 6 7 8 9 10 11 12+

Dip toward molten pools on Io, one of Jupiter's moons, dodge flying particles in the rings of Uranus, do a loop-the-loop through the canyons of Mars, and more on nine different "rides." Set to popular music by White Zombies, U2, Stealers Wheel, Lenny Kravitz, and others, *SpacePark360* is an immersive, all-ages experience.

SPACEPARK360: LUCID DREAMING EDITION

GRADES K 1 2 3 4 5 6 7 8 9 10 11 12+

Experience the same great visuals as *SpacePark360,* but this time set to the infectious music of A Burning Century, an Atlanta-based alternative-rock-electronica band that combines soaring melodies with hard-hitting rhythms.



CHEMISTRY

CHEMICAL REACTIONS (LEGO® Bricks Program)

GRADES 6 7 8

Introduce your students to molecules, atoms, chemical notation, and chemical compounds using LEGO® Bricks! Use this program as an introduction to chemistry, as an enrichment for students with a basic understanding, or as an end-of-unit experience. Students will perform chemical reactions, collect data, and manipulate LEGO® Bricks to model the reactions.

This 90-minute program has an additional $4/person fee.

EARTH SCIENCE

CONTINENTAL DRIFT TO PLATE TECTONICS

GRADES 5 6 7 8 9 10 11 12+

Explore and evaluate Alfred Wegener's evidence for continental drift and the existence of the supercontinent using rocks, fossils, and casts from Antarctica, Africa, and Australia. See how new technology and exploration of the deep oceans provided further evidence for the theory of plate tectonics, including earthquakes, volcanoes, mountains, rift valleys, rocks, and minerals – even events that occurred right here in Michigan more than a billion years ago!

DINOSAURS

GRADES 3 4 5 6 7 8 9 10 11 12+

Explore aspects of the behavior, biology, ecology, and evolution of dinosaurs from fossil bones and eggs, casts, complete skeletons, and large skulls. Evaluate evidence related to dinosaur extinction theories and the relationship between dinosaurs, birds, and other reptiles based on current evidence.

DINOSAURS AT DUSK

GRADES 3 4 5 6 7 8 9 10 11 12+

Take to the skies and discover the origins of flight with a father and his teenage daughter who share a fascination for all things that fly. Navigate with them across continents, meet the ancestors of modern-day birds (the feathered dinosaurs), and experience the cataclysmic "last day" of the dinosaurs.

This program takes place in the Acheson Planetarium.

DINOSAUR TALE

GRADES P K 1 2

Travel back in time to visit the land of the dinosaurs. Students gain hands-on experience with genuine coprolites, bones and teeth, and casts of claws, spikes, skulls, and more. Use tools to simulate a fossil dig and learn the skills of a paleontologist.

EARTH'S CHANGING CLIMATE – NEW!

GRADES 3 4 5 6 7 8 9 10 11 12+

Students will examine how clouds and gases in our atmosphere affect climate, and how wind and ocean currents modify climate on a global scale. We'll discover how ice cores tell us what the climate was like hundreds of thousands of years ago, see how global temperatures have changed in the last 125 years, and what the future may hold if current trends continue. Together, we'll explore what may be causing climate change and how it could affect the future of our planet.

This live-narrated program takes place in the Acheson Planetarium.

EARTH SYSTEM HISTORY

GRADES 6 7 8 9 10 11 12+

Evaluate evidence from key rocks and fossils from Michigan, and around the world, to understand how components of the Earth's system co-evolved through time; with emphasis on the evolution of the atmosphere, magnetic field, early life, plate tectonics, climate, and history of select mass extinctions.

ICE AGE MICHIGAN AND THE BIG MELTDOWN

GRADES 4 5 6 7 8 9 10 11 12+

Learn how Michigan came to be by exploring the ice age through the direct study of local surface rocks, landforms, and sediments found in southeast Michigan. Students will learn about the transition to our warm climate period through fossil plants, extinct megafauna (mammoths, mastodons, and giant beavers), and other specimens from Cranbrook's collections.

This program takes place in the Institute's exploreLAB.

JOURNEY TO THE CENTER OF THE EARTH

GRADES 1 2 3 4 5 6 7 8 9 10 11 12+

Take an incredible, customized 4,000-mile journey from the site of your school to the center of the Earth. Explore sediments and handle rocks, minerals, gems, and fossils that one would encounter along the way. Become geologists and interpret geologic evidence, and what it reveals about Earth's history and natural resources in your community.

ORIGIN OF THE GREAT LAKES

GRADES 4 5 6 7 8 9 10 11 12+

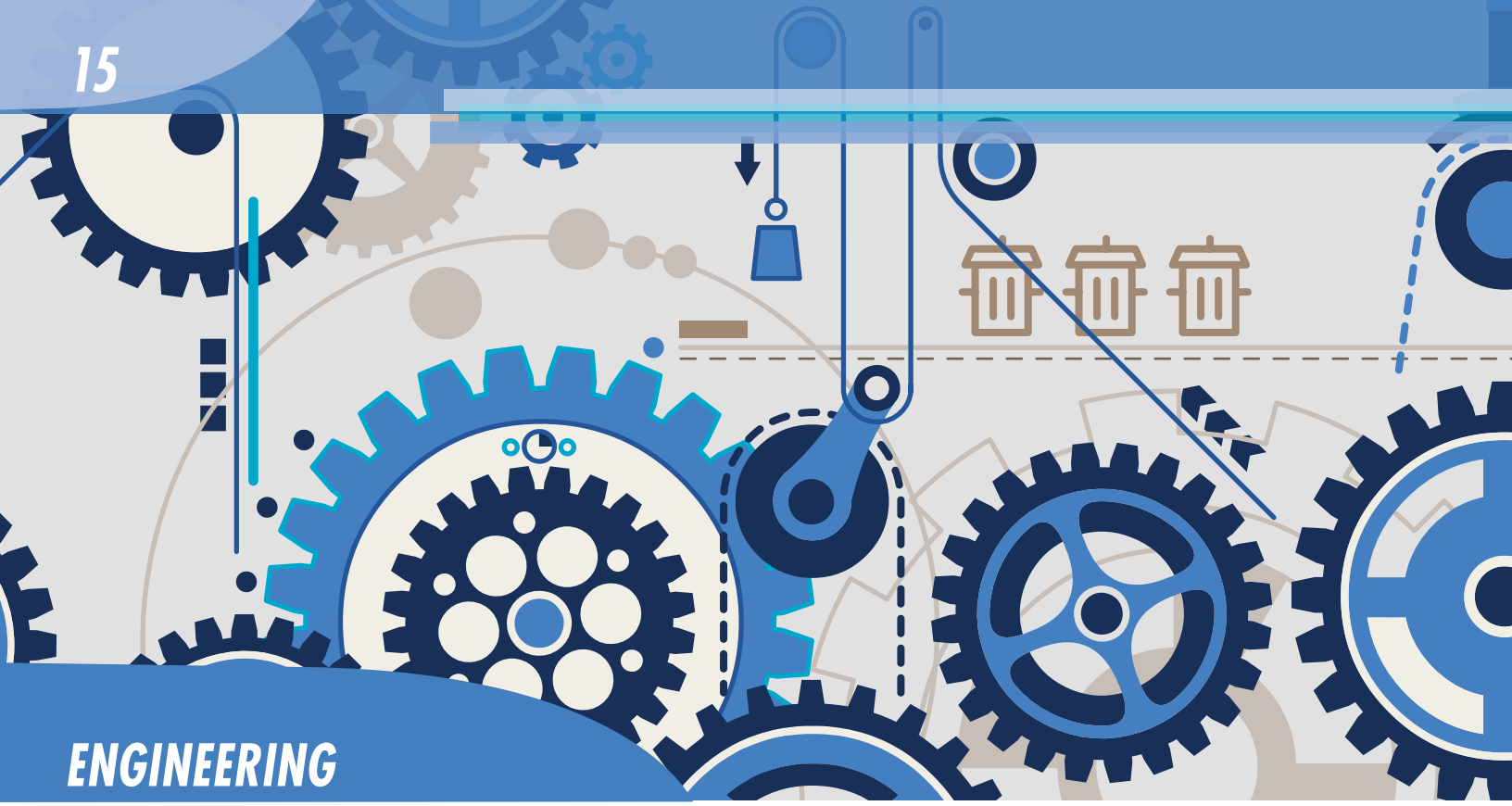
Use rocks, fossils, and geologic maps to discover how ancient continental rift valleys, shallow tropical seas, folded rock layers, and great flowing ice sheets combined to produce the naturally interconnected Great Lakes basins. From this session, students will understand the importance of our unique freshwater lakes and the potential problems posed by invasive species, diversion, and pollution.

SAVAGE SEAS

GRADES 4 5 6 7 8 9 10 11 12+

Investigate the evidence for prehistoric tropical seas in southern Michigan through the study of specimens of underlying sedimentary bedrock and the paleoecology of local fossils. Together, we'll evaluate explanations for a mass extinction in the sea and its link to the origin of related natural resources in the local bedrock.

This program takes place in the Institute's exploreLAB.



ENGINEERING

APPROACHES TO PROBLEM SOLVING

GRADES 4 5 6 7 8

Explore the world of extraordinary personas with real-world problems. Students will use empathy and their imaginations to solve challenges before designing and building prototypes of their solutions. This session will challenge them to use design thinking processes to develop skills as a designer, inventor, maker, architect, engineer, and more.

This 90-minute program has an additional $4/person fee.

FROM DREAM TO DISCOVERY: INSIDE NASA ENGINEERING

GRADES 3 4 5 6 7 8 9 10 11 12+

Experience the challenges of the next generation of space exploration in this immersive program. By using exciting, real-life projects like NASA's James Webb Space Telescope and the New Horizons mission to Pluto, the show highlights the extreme nature of spacecraft engineering and the life cycle of a space mission—from design and construction to the rigors of testing, launch, and operations. Blast off and take the voyage with us! This program also contains an interactive segment that allows participants to assist in the design of a virtual space mission.

From Dream to Discovery is made possible by the generous support of the Baiardi Family Foundation. This program takes place in the Acheson Planetarium.

FROM LEVERS TO LIFT OFF

GRADES 5 6 7 8 9 10 11 12+

Students will embark on a journey of discovery and investigation to help them better understand how humanity achieved incredible engineering feats using imagination and know-how. This education-focused program explores many of humanity's engineering accomplishments throughout recorded history. It explains each STEM focus area through real-world applications – from development of the simple lever and the catastrophic power of medieval siege engines to space flight.

From Levers to Lift off is made possible by the generous support of the Baiardi Family Foundation. This program takes place in the Acheson Planetarium and other demonstration areas, and is a four-hour program with an additional $5/person materials fee.

PEGBOARD CHALLENGE

GRADES 5 6 7 8

Learn about one of NASA's greatest problem-solving moments when engineers fit a "square peg into a round hole" and saved the Apollo 13 crew. Test problem-solving skills by assembling a track to guide a ball around obstacles and across a board using a limited set of tools.

This program emphasizes engineering skills and out-of-the-box thinking.

LIFE SCIENCE AND ECOSYSTEMS

ANIMAL DIVERSITY

GRADES 4 5 6 7 8 9 10

With more than eight million animal species on Earth, students explore the relative abundance of these dynamic creatures. They'll sort and classify animals to discover Earth's least appreciated (and most diverse) organisms using examples from the Institute's collections.

DECODING DNA

GRADES 6 7 8 9 10 11 12+

Decoding DNA allows students to manipulate physical models of DNA by building 3-D codons. Learn how codons group together to create a gene and how the resulting genome makes organisms unique.

ECOSYSTEM EXPLORATION

GRADES P K 1 2 3 4 5

Explore forest, field, and pond ecosystems across Cranbrook's 319-acre campus. With an Institute educator, walk the Institute's trails and consider how different areas meet the needs of the organisms living here. See how living things have adapted to their habitat and observe how each organism is uniquely suited to survive, grow, and reproduce.

Offered Oct. 2 – Nov. 22, 2019 and April 8 – June 5, 2020. This program occurs outdoors; dress appropriately for the weather.

MICHIGAN ECOSYSTEMS

GRADES 4 5 6 7 8

Collaborate in teams to design a food web in different ecosystems and investigate Michigan's ecological diversity. Explore the interrelationships between biotic and abiotic factors and how energy flows through food webs to sustain life.

NATURAL SELECTION

GRADES 6 7 8 9 10 11 12+

Join the young Charles Darwin on his adventurous voyage of exploration. Witness the thrill of scientific discovery by seeing the world through Darwin's eyes, make observations of the most beautiful natural scenery, and let the pieces of the scientific puzzle fall into place. Darwin himself reveals the simple and most beautiful mechanism that explains the evolution of all life on Earth: Natural selection.

This program takes place in the Acheson Planetarium.

PHOTOSYNTHESIS (LEGO® Bricks Program)

GRADES 6 7 8

Experience a photosynthesis reaction by using LEGO® Bricks to model both the reactants and products. Construct various molecules important to plants and discover that most of a plant's mass comes from air and water rather than from the soil.

UNDERSTANDING AIR (LEGO® Bricks program)

GRADES 6 7 8

Construct physical models of air using LEGO® Bricks and then "combust" them to produce carbon dioxide and air pollutants. As a group, we'll discuss the impact this may have on air quality and the environment, and where we go from here.

WEBS, WINGS, AND CRAWLING THINGS

GRADES P K 1 2 3 4 5 6

Get up close and personal investigating the world of insects, arachnids, and myriapods in this interactive, live arthropod program. Engage in age-appropriate explorations of adaptations, life cycles, heredity, habitats, and more.

YOU, ME, AND THE BLUE PLANET

GRADES 4 5 6 7 8 9 10 11 12+

Did you know that our actions impact the quality of water in the lakes, rivers, and streams in our communities and the Great Lakes? Habitat loss, invasive species, and pollution have resulted in dramatic changes in the population of native species in the Great Lakes. Investigate zebra mussels, Phragmites, microbeads, and more, and discuss how we can work together to protect and restore the Great Lakes.

PHYSICAL SCIENCE

BEGINNING WEATHER – NEW!

GRADES K 1 2 3

Study in detail the three major components of daily weather: Heat energy primarily from the sun, water movement through its cycle, and air movement and pressure. Live demonstrations illustrate and clarify science concepts. Then become a meteorologist by combining current atmospheric data into a real weather forecast.

ELECTRICITY AND MAGNETISM

GRADES 2 3 4 5 6 7 8

In this energetic program, examine the properties of magnets and how they interact with common materials and each other. Investigate the discovery of electricity and its connection with atoms. Create a human magnet and human circuit, perform a hair-raising experiment, and generate lightning to observe how electricity and magnetism interact with matter.

FORCES AND MOTION

GRADES K 1 2 3 4 5 6

Student volunteers and hands-on demonstrations make this a "moving" experience. Investigate matter and the qualities scientists use to classify it as a solid, liquid, or gas. Understand how to make work easier by applying pushes and pulls on simple machines like levers, pulleys, and inclined planes.

LIGHT AND SOUND

GRADES 1 2 3 4 5 6 7 8

This interactive session will focus on the physics of waves as we explore and describe the properties of light and sound. Discover how these forms of energy are created, measured, and controlled. Using percussion tubes, spectrum tubes, and more, we'll reveal the fascinating facts about these everyday phenomena.

MATTER AND ENERGY

GRADES 1 2 3 4 5 6 7 8

Learn how scientists classify common materials through an emphasis on water, then explore "weird" substances that blur the boundaries between states of matter. Apply light, heat, electricity, and other forms of energy to matter and behold the results. Finish with a BANG when we change chemical potential energy into kinetic energy!

PHYSICS OF FLING!

GRADES 2 3 4 5 6 7 8 9 10 11 12+

Demonstrate the power of physics using the Institute's three-ton trebuchet, capable of launching a large pumpkin the length of a football field or more. This tool demonstrates the principle of conservation of energy, the mathematical nature of projectile motion, and the basic laws of kinematics in engaging and inspiring ways.

This program is offered in three ways:

1. Two hours at your school
2. Two hours at the Institute of Science
3. One hour at your school and one hour at the Institute (on separate days)

Each program includes a classroom component that involves the use of a model trebuchet and the hands-on use of the full-scale trebuchet. This program requires even terrain and approximately 75-yards of down-range distance. Some classroom components for lower grades are not transportable and require a museum visit. See pages 33 and 34 for pricing information.

Please contact our Reservations Office at 248.645.3210 to book this program.

WAVES AND ENERGY

GRADES 6 7 8

Working in pairs, gain a better understanding for where our energy comes from and how it travels to Earth. Manipulate a pendulum to model a wave, discussing various phenomena related to waves and energy.

WEATHER

GRADES 4 5 6 7 8

See how solar energy drives our climate and discover the circumstances that influence our daily weather. Become a meteorologist by using current Internet data to create a forecast. Explore violent weather, learn how to protect yourself during storms, and watch lightning strike before your very eyes!

WHAT CAUSES OBJECTS TO MOVE?

GRADES P K 1 2 3

Utilize this inquiry-based experience to explore the concept of motion. As students study cause and effect relationships, they'll practice scientific processes by asking questions, observing, designing solutions, exploring materials, and communicating their ideas to each other, all while learning what causes objects to move.

OVERNIGHT SCHOOL FIELD TRIPS

Ever wonder if the dinosaurs come to life at night? Find out with an overnight field trip!

Overnights include:

- Three mini science workshops, led by our science experts
- Auditorium program
- Visit to the *Acheson Planetarium*
- Museum exploration
- Bring your overnight gear and sleep among the exhibits

Overnights are available any day of the week. Contact our Reservations Office at 248.645.3210 to check date availability and cost.

HOMESCHOOL PROGRAMS

Visit Cranbrook Institute of Science and enhance your homeschool curriculum. From hundreds of specimens and artifacts on display, to engaging programming, any homeschool classroom comes alive with a visit to the Institute.

Contact our Reservations Office to hear how you or your group can register for a field trip at 248.645.3210.

TEACHER WORKSHOPS

Invest in your own love of science! Add a spark to your curriculum through the Institute's teacher workshops. Institute scientists and educators offer expertly crafted programming to enhance classroom curriculum. Use this time to become empowered with ideas and activities to enhance both student experiences and your career.

THE FUNDAMENTALS OF INQUIRY

Explore the role of inquiry to create powerful student experiences in science education, including best science practices, guiding learners in developing questions, and facilitating student-driven investigations at any age. Available as a half-day or day-long session.

DESIGN THINKING

Explore the design thinking process as a tool you can utilize in your classroom to encourage students' problem-solving capabilities. This process emphasizes empathy in problem-solving and creating a personal experience to enhance student learning.

Call us at 248.645.3035 to discuss a custom session for your group.

WE'LL COME TO YOU!

SCIENCE ON THE GO!

Can't come to the Institute of Science? No problem – let us bring science education right into your classroom with Science on the GO! Our outreach programs are offered year-round - making it a great option for summer programming!

Our educators will share their excitement for science with investigative materials, interactive programming, and fun props that will promise to engage students at your school.

SMALL GROUP PROGRAMS

Small group programs are designed for up to 30 students. Choose from a variety of topics, including anthropology, astronomy, earth science, fluid earth, physics, and life science.

CHEMICAL REACTIONS (LEGO® Bricks Program)

GRADES 6 7 8

Introduce your students to molecules, atoms, chemical notation, and chemical compounds using LEGO® Bricks! Use this program as an introduction to chemistry, as an enrichment for students with a basic understanding, or as an end-of-unit experience. Students will perform chemical reactions, collect data, and manipulate LEGO® Bricks to model the reactions.

This 90-minute program has an additional $4/person fee.

CONTINENTAL DRIFT TO PLATE TECTONICS

GRADES 5 6 7 8

Explore and evaluate Alfred Wegener's evidence for continental drift and the existence of the supercontinent using rocks, fossils, and casts from Antarctica, Africa, and Australia. See how new technology and exploration of the deep oceans provided further evidence for the theory of plate tectonics, including earthquakes, volcanoes, mountains, rift valleys, rocks, and minerals—even events that occurred in Michigan more than a billion years ago!

DINOSAURS

GRADES P K 1 2 3

Hold a 65 million-year-old dinosaur fossil, learn how dinosaurs adapted to their surroundings, and dig for fossils like a paleontologist in this program designed especially for young students. Dig boxes will be brought into classrooms.

DECODING DNA

GRADES 6 7 8 9 10 11 12+

Decoding DNA allows students to manipulate physical models of DNA by building 3-D codons. Learn how codons group together to create a gene and how the resulting genome makes organisms unique.

ELECTRICITY

GRADES 3 4 5 6 7 8

Examine the nature of electricity by modeling electron flow, building circuits, and exploring generators. Investigate the many ways that electricity impacts our lives and how different forms of energy are converted into electrical energy.

HOW WE USE WATER

GRADES 2 3 4 5 6 7 8

This hands-on adventure will take students through the water cycle from the Earth's surface to the atmosphere and back again. Demonstrations and hands-on activities highlight the most significant freshwater ecosystem on Earth, the Great Lakes, and how we can conserve this precious resource.

I LIVE IN A WATERSHED

GRADES 5 6 7 8

Learn about your local watershed and how we can protect it from pollution. Working in groups, students will create model communities to better understand how land use impacts the water quality of local rivers and streams, and ultimately affects the Great Lakes.

IT'S A SMALL WORLD!

GRADES P K 1 2 3

Use models, microscopes, and live samples to explore the similarities and differences between insects and arachnids. Develop an understanding of the importance of the small, living world around us.

MICHIGAN ECOSYSTEMS

GRADES 4 5 6 7 8

Collaborate in teams to design a food web in different ecosystems and investigate Michigan's ecological diversity. Explore the interrelationships between biotic and abiotic factors and how energy flows through food webs to sustain life.

MONEY!

GRADES 3 4 5

Exercise your students' math skills to help them develop an understanding of the importance of fiscal responsibility, and how economics impacts their daily lives. Games and activities illuminate the role of scarcity that drives human activities to meet our wants and needs.

THE PEOPLE OF THE THREE FIRES

GRADES 3 4 5 6 7 8 9 10 11 12+

Enter the world of the Ottawa, Ojibway, and Potawatomi tribes, also known as The People of the Three Fires. Explore their language, sports, art, and cultural ideas (both past and present) through artifacts and interactive games.

PHOTOSYNTHESIS (LEGO® Bricks Program)

GRADES 6 7 8

Experience a photosynthesis reaction by using LEGO® Bricks to model both the reactants and products. Construct various molecules important to plants and discover that most of a plant's mass comes from air and water rather than from the soil.

ROCKS, MINERALS & FOSSILS

GRADES 3 4 5 6 7 8

Using Cranbrook's world-class collection, students will learn about the formation and classification of rocks and minerals and explore fossil evidence confirming Michigan was once covered by an ocean.

WAVES AND ENERGY

GRADES 6 7 8

Working in pairs, gain a better understanding for where our energy comes from and how it travels to Earth. Manipulate a pendulum to model a wave, discussing various phenomena related to waves and energy.

WHAT CAUSES OBJECTS TO MOVE?

GRADES P K 1 2 3

Utilize this inquiry-based experience to explore the concept of motion. As students study cause and effect relationships, they'll practice scientific processes by asking questions, observing, designing solutions, exploring materials, and communicating their ideas to each other, all while learning what causes objects to move.

LARGE GROUP PROGRAMS

Large group programs are designed for groups of up to 150 students providing an up-close look at physical sciences.

FORCE AND MOTION

GRADES K 1 2 3 4 5 6 7 8

Examine the how and why of motion. Explore the effects of balanced and unbalanced forces and Newton's laws of motion. The program utilizes Van de Graaff generator, Newton's cradle, hovercraft, and motion carts to demonstrate the forces and motion in the world around us.

MATTER AND ENERGY

GRADES 2 3 4 5 6 7 8

Learn how scientists classify common materials through an emphasis on water, then explore "weird" substances that blur the boundaries between states of matter. Apply light, heat, electricity, and other forms of energy to matter and behold the results. Finish with a BANG when we change chemical potential energy into kinetic energy!

SIMPLE MACHINES

GRADES K 1 2 3 4 5

Explore the world of simple machines with our larger-than-life examples of an inclined plane, wedge, screw, lever, wheel and axle, and pulley. Learn how simple machines help us perform work with ease.

SPECIAL PROGRAMS

Bring your school community together to share in an engaging, energetic, and educational hands-on experience! Cranbrook Institute of Science can meet the variety of needs and interests in your school, your classroom, and your community. Our *Science on the GO!* programs are STEAM-focused and are ideal for school events, extracurricular clubs, after school groups, homeschool programs, and community and neighborhood events.

CUSTOM SCIENCE FESTIVALS

GRADES P K 1 2 3 4 5 6 7 8+

Personalize your Cranbrook Institute of Science experience by letting us customize an event just for your school and expand your students learning in STEAM. Festivals can occur during or after school, and students and teachers can rotate through the programs as a class or in smaller groups. Stations can run from 10- to 30-minutes.

FAMILY SCIENCE NIGHTS

GRADES P K 1 2 3 4 5 6 7 8+

Students and parents can investigate the scientific world together in an engaging after school event. Bring families into your school to cultivate an interest in science and extend your students' STEAM learning through our hands-on science stations. Events typically last two hours and require at least 14 volunteers. Customize your Family Science Night by selecting stations from more than 40 engaging options. Once you book a Family Science Night, we'll send you a list of stations you can select from.

PROFESSIONAL LEARNING OPPORTUNITIES

Invest in your own love of science! Add a spark to your curriculum through the Institute's teacher workshops. Institute scientists and educators offer expertly crafted programming to enhance classroom curriculum. Use this time to become empowered with ideas and activities to enhance both student experiences and your career.

THE FUNDAMENTALS OF INQUIRY

Explore the role of inquiry to create powerful student experiences in science education, including best science practices, guiding learners in developing questions, and facilitating student-driven investigations at any age.

Available as a half-day or day-long session.

DESIGN THINKING

Explore the design thinking process as a tool you can utilize in your classroom to encourage students' problem-solving capabilities. This process emphasizes empathy in problem-solving and creating a personal experience to enhance student learning.

SCIENCE ON THE SCREEN!

Through video conferencing technology, we can bring high-quality science programs right into the classroom.

VIRTUAL FIELD TRIPS

Using the latest high-definition videoconferencing technology, Cranbrook Institute of Science brings programs directly to your classroom. Distance learning enables students to connect with our scientists and become active participants in the learning experience.

Programs address national standards and are NGSS-aligned. Each 45-minute program includes teacher resource information, a session outline, and any required activity kits.

You may use a computer connection or other video conferencing equipment in your school or district to participate in *Science on the SCREEN!* virtual field trips.

ASK THE EXPERT – EXPLORING CAREERS IN THE MUSEUM

GRADES 2 3 4 5 6 7 8 9 10 11 12+

Give your students the opportunity to meet a real scientist and discover what it's like being a paleontologist, anthropologist, astronomer, or other museum professional. Every program is unique, as each expert uses multi-media programs, artifacts, and their own personal experiences and research to bring their life's work to your classroom.

NATIVE AMERICA

GRADES 3 4 5 6 7 8 9 10 11 12+

Explore the history and culture of the tribes/nations of your state using artifacts drawn from the Institute's collections, historical photographs, and documents. This program is tailored to each group's interests based upon grade level and educator requirements.

THE PEOPLE OF THE THREE FIRES

GRADES 3 4 5 6 7 8 9 10 11 12+

Enter the world of the Ottawa, Ojibway, and Potawatomi tribes, also known as The People of the Three Fires. Explore their language, sports, art, and cultural ideas (both past and present) through artifacts and interactive games.

THE ICE AGE AND YOUR SCHOOL: HOW COOL WERE YOU?

GRADES 4 5 6 7 8 9 10 11 12+

Based on your geographic location, students will explore the ice age and investigate the evidence of the local landscape and prehistoric biota to place your school and community in a global context. Evaluate theories for past and present changes in global climate with a geologist who has explored the Antarctic ice sheet, including the South Pole.

ACHESON MOBILE PLANETARIUM

GRADES K 1 2 3 4 5 6 7 8 9 10 11 12+

Enter our portable, digital planetarium and journey through the night sky discovering distant stars, planets, constellations, and more. Most of the planetarium programs offered at the Institute are available, except for Spacepark360 and SpacePark360: Lucid Dreaming Edition.

Please refer to pages 9 – 11 for a complete list of programs.

The Acheson Mobile Planetarium can seat 50-60 individuals comfortably, requires 14' ceilings, and a footprint of approximately 25' x 25'. For larger groups, we suggest planning a minimum of 15-minutes for both entering and exiting.

Travel Costs (by county):

Macomb, Oakland, Wayne: ---------- $60

Genesee, Lapeer, Livingston, Washtenaw: ---------- $85

Ingham, Monroe, St. Clair, Saginaw, Sanilac, Shiawassee, Tuscola: ---------- $110

Bay, Clinton, Eaton, Jackson, Lenawee: ---------- $135

Calhoun, Gratiot, Hillsdale, Huron, Ionia, Midland: ---------- $150

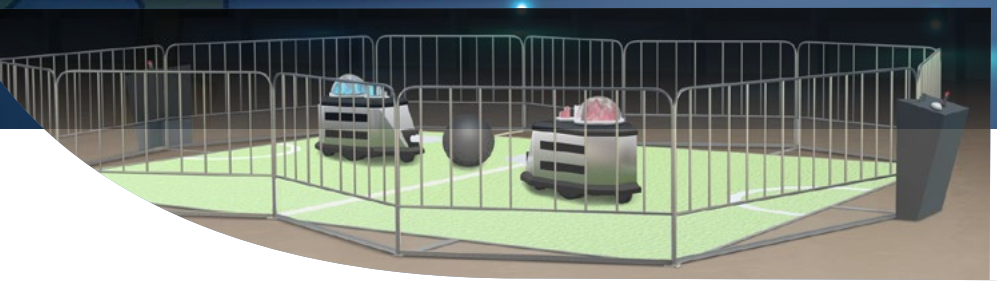
Arenac, Barry, Branch, Clare, Isabella, Kalamazoo, Kent: ---------- $185

For counties not listed, please call 248.645.3210 for pricing.

First Show: ---------- $450
Additional Shows: ---------- $250 each

The *Acheson Mobile Planetarium* is offered year-round.

EXPLORE FURTHER



ROBOT REVOLUTION

CHANGING EXHIBITS

Build a trip to our changing exhibit hall into your field trip experience.

ROBOT REVOLUTION

Available through July 3, 2020

During your time at the Institute we encourage you to visit our newest exhibit, *Robot Revolution*, a world-class, hands-on exhibition with authentic technological marvels, audio and video components, research prototypes, and graphic panels. Students will have the opportunity to use and interact with real technological devices, most of which have not been done before in a traveling exhibition, and participate in activities encompassing the fantastic reality of robotic technology as it applies to space, ocean and planetary exploration, industrial applications, service to humanity, the disabled, and the movie industry. Your classroom will be challenged to test their skills in earth applications and more, with the goal of walking away inspired to be the next generation of innovators, providing useful scientific examples of electronics, robotics, and engineering technologies relevant to STEAM education initiatives. Additionally, the exhibition features robotic elements based on world renowned work for NASA, esteemed universities, research and development, and robotics innovations. Each component of the exhibit is designed to captivate audiences with an expanse of wondrous environments and themes, and the elements of technology are fully visible to increase the educational merits. The activities are adaptable to all ages and skill levels, and are as visually stunning as they are educationally relevant.

Robot Revolution is presented by PNC Bank, with contributing support from DENSO International America.

PNC BANK | DENSO Crafting the Core

PERMANENT GALLERIES

Cranbrook Institute of Science is home to permanent galleries that will educate students on anthropology, astronomy, ecosystems, earth science, fluid earth, life science, and physical science. During your field trip, don't forget to include a stop to one, or more, of our galleries.

ACHESON LIGHT LAB

An ingeniously subtle science lesson, this space is designed to encourage curiosity. Constructed of textured concrete block and seven different kinds of glass, the Light Lab rises nearly 40 feet and will shower students with patterned light and color as the sun's rays pass through the glass. The principles of reflection, refraction, absorption, transmission, diffraction, and diffusion are illustrated.

ASTRONOMY GALLERY

The Astronomy Gallery includes ViewSpace, an internet-fed, self-updating, permanent exhibit from the Space Telescope Science Institute, home of NASA's Hubble Space Telescope and its successor, the James Webb Space Telescope. Rocks from space highlights meteorites collected from around the world. Accompanying the meteorite display is an exhibit devoted to tools of Astronomy, including sundials, astrolabes, and solar system models take from the Institute's collection. The gallery also includes a mechanical model of our solar system known as the Copernican Orrery.

EVERY ROCK HAS A STORY

Learn about materials that make up the Earth and processes that have shaped the globe over time. Was Michigan once located in the tropics? Will California crumble into the Pacific Ocean? The Earth is constantly changing right under our feet and the astonishing results include earthquakes, volcanoes, granite, diamonds, and more. Whether it's a tiny crystal or massive mountain, rocks and minerals reveal Earth's history, offering clues into its future.

FLINT ANTHROPOLOGY GALLERY

Highlighting more than 100 Native American objects from the Institute's collections, the exhibit features video clips and a soundtrack narrative telling the story of the native people of the Great Lakes region and illustrates the impact new influences had on their way of life.

ICE AGES COME AND GO

Through climatic variations Michigan has been buried under ice time and time again. Explore through hands-on interactives and visual diagrams issues like seasons, heat distribution, and how heat travels across the globe. Learn how Michigan's landscape was carved by the movement of glaciers and how the Sun causes climate change on Earth. Hands-on bonus: Touch a huge rock with grooves carved by glaciers!

ICE AGE SURVIVORS

Ice Age Survivors showcases large animals or megafauna (animals weighing more than 100 pounds) that survived the last pulse of the Late Quaternary extinctions in North America that occurred between 11,500 and 10,000 years ago. This event had a profound influence on the character of the modern fauna in North America and throughout the world.

LIFE CHANGES OVER TIME

Come face to face with a full-sized cast of *Tyrannosaurus rex* and examine natural selection and evolution by exploring the question, "Are birds the descendants of dinosaurs?" Discover what dinosaur features are shared with common birds and how ancient birds have many dinosaur-like features.

MASTODONS DID NOT SURVIVE

This exhibit examines extinction through the example of the mastodon, which used to be plentiful in Michigan during the last ice age. Learn about animals that went extinct by the close of the last ice age and discover how human hunting may have contributed to the extinction of some North American mammals.

MINERAL STUDY GALLERY

Who doesn't like shiny objects? Cranbrook founder George Booth started this mineral collection in 1926 with only a few hundred specimens. Since then, it has grown to more than 11,000 sparkling treasures, with approximately 1,800 currently on display, including 300 minerals from Michigan, such as gypsum, copper, and halite.

MOTION GALLERY

Interact with physics through hands-on experiments that demonstrate the most basic, yet profound concepts of matter in motion. The gallery encourages imagination and finesse as students play with physics, illustrating how matter, including you, travels, balances, and spins.

READING OBJECTS

Every object, a pair of shoes, a necklace, a flag, holds different meanings for different people telling a story. *Reading Objects* invites students to explore their own methods for decoding cultural items, discovering what you can about them, and uncovering the secrets they hold.

THE STORY OF US

The Story of Us showcases the very best of the Institute's nationally-regarded anthropology collection and offers an immersion experience unprecedented at Cranbrook. Visitors will experience the exhibition with the help of a virtual holographic-like personal guide and use individual touch-screen interfaces to learn more about objects that interest them.

WATER IS LIKE NOTHING ELSE

Dive in to explore water and why it's so important to life. Students will get to see and touch a cast of the floor of a now extinct 500,000-year-old sea. Make it rain, hail, sleet, or snow by adjusting moisture levels in the air and temperatures on the ground. Our interactive, *Our Great Lakes Watershed* exhibit examines how precious the world's freshwater supply is and what we can do to help protect it.

WOODLANDS DEN

Step back in time for a beautiful, unplugged experience. One of the oldest exhibits at the Institute, and retained as originally created, these dioramas of Michigan plant associations capture both a reminder of the Institute's past and a glimpse of habitats increasingly threatened throughout the state.

SHOPPING AND LUNCH

SCIENCE SHOP

Don't' forget to schedule a visit to the Science Shop! The Institute's Science Shop provides a wonderful opportunity to enhance the learning experience with a personal artifact that reinforces scientific concepts and provides a positive memory of the visit.

Teachers and chaperones receive a 10% discount off their purchases at the Science Shop.

No time to shop? Call ahead and pick up your order up during your visit! You can place your order by calling 248.645.3207.

Hint! Go online, science.cranbrook.edu/store, to see specific products available and prices.

LUNCH AT THE INSTITUTE OF SCIENCE

BRING YOUR LUNCH

- Lunchrooms are available on a pre-scheduled basis.
- Each child should bring a container identified with the student's name.
- Food and beverages, including gum, are not permitted in the museum.
- We require that all lunches be peanut-, nut-, and nut butter-free.

ORDER LUNCH FROM OUR REFLECTIONS CAFÉ

The Institute offers lunch catering for students. Lunches must be pre-ordered at least two weeks in advance for delivery to the school's designated lunchroom area at the time of the visit.

- View menu at science.cranbrook.edueducators#menu.
- $5.75 per person.
- Orders require a 50% non-refundable deposit at the time of order.
- Remainder of payment is due the day of visit.
- Additionally, a la carte items are available for an extra charge: Chips, cookies, and bottled water; call for group pricing of these items.
- Reflections Café accepts cash, credit cards (Visa and MasterCard), and checks (payable to Chartwells).
- Specify at time of ordering if anything extra will be purchased.

PLACE LUNCH ORDERS AND MAKE PAYMENTS THROUGH THE CAFÉ DIRECTLY AT 248.645.3201

Special requests? Food allergies? Ask us! We can accommodate most requests and regularly offer special dietary menus. Cranbrook Institute of Science does not allow peanuts, tree nuts, or nut butter in the museum. We request that your students please refrain from bringing these items made with these ingredients. We appreciate your cooperation and apologize for any inconvenience.

GET THE BALL ROLLING

(OBJECTS IN MOTION TEND TO STAY IN MOTION!)

STEPS TO REGISTER

Plan your experience with Cranbrook Institute of Science through the prompts below.

Register online at science.cranbrook.edu/educators/registration or call us at 248.645.3210 Monday – Friday, 8am – 4:30pm.

(50% deposit due at the time of online registration and within 2 weeks of registration by phone)

STEP ONE:

Learn about our 80+ programs. Read through the 2019-2020 Educator Guide and find the right experience for your class.

STEP TWO:

Answer these questions prior to registering...

- Do you want a field trip at the Institute? Or should we come to you?
- What time of year are you looking for? (Sooner than three weeks from now? Call us!)
- How many students, teachers, and chaperones will attend?
- Will you bring lunch or preorder from our Reflections Café? View the menu on our website and call 248.645.3201 to preorder.
- Should we schedule time for students to visit our Science Shop?
- Does anyone in your group have special needs?
- Will you be coming by bus or car?
- Do we have permission to take photos of your students enjoying the Institute?

STEP THREE:

Register!

Online at science.cranbrook.edu/educators/registration or at 248.645.3210.

(50% deposit due at the time of online registration and within 2 weeks of registration by phone).

STEP FOUR:

Have fun at the Institute of Science or with our educators at your school!

PRICING & PAYMENT

Prices include admission, permanent and changing exhibits, parking, and program-related scavenger hunts for chaperone use during museum visit.

PER STUDENT

1 PROGRAM ---------- **$12**
2 PROGRAMS ---------- **$15**
3 PROGRAMS ---------- **$17**
4 PROGRAMS ---------- **$19**

ADDITIONAL FEES PER PERSON

ADDITIONAL CHAPERONES/ADULTS ---------- **+$10**
(Pre-K and K groups are allowed one free chaperone for every three students; 1st-12th grade groups are allowed one free chaperone for every five students; additional chaperones/adults are $10/person)

APPROACHES TO PROBLEM SOLVING *(90-minute program)* --------- **+$4**

CHEMICAL REACTIONS LEGO® BRICKS PROGRAM
(90-minute program) ---------- **+$4**

FROM LEVERS TO LIFT OFF ---------- **+$5**

PHYSICS OF FLING! *(MAX 30 STUDENTS PER PROGRAM)*

IF PROGRAM FACILITATED AT CRANBROOK ---------- **$400**
IF PROGRAM FACILITATED AT YOUR SCHOOL ---------- **$550**
IF PROGRAM SPLIT BETWEEN BOTH VENUES ---------- **$450**

SCIENCE ON THE GO!

SMALL GROUPS *(MAX 30 STUDENTS PER PROGRAM)* ---------- **$275**
FOR EACH ADDITIONAL PROGRAM ---------- **$200**
LARGE GROUPS *(MAX 150 STUDENTS PER PROGRAM)* ---------- **$350**
FOR EACH ADDITIONAL PROGRAM ---------- **$200**
CALL FOR MULTI-PROGRAM PRICING AT 248.645.3210.

ACHESON MOBILE PLANETARIUM

FIRST SHOW ---------- **$450**
ADDITIONAL SHOWS ---------- **$250 each**
SEE PAGE 34 FOR TRAVEL FEES OR CALL 248.645.3210.

FAMILY SCIENCE NIGHT

(MAX 300 PARTICIPANTS PER PROGRAM) ---------- **$675***
**BASED ON STATION SELECTIONS, ADDITIONAL MATERIAL FEES MAY APPLY.*

PRICING & PAYMENT

CALL FOR MULTI-PROGRAM AND CUSTOM PROGRAM PRICING AT 248.645.3210 | TRAVEL FEES APPLY:

Travel Costs (by county):

Macomb, Oakland, Wayne: ---------- $60
Genesee, Lapeer, Livingston, Washtenaw: ---------- $85
Ingham, Monroe, St. Clair, Saginaw, Sanilac, Shiawassee, Tuscola: ---------- $110
Bay, Clinton, Eaton, Jackson, Lenawee: ---------- $135
Calhoun, Gratiot, Hillsdale, Huron, Ionia, Midland: ---------- $150
Arenac, Barry, Branch, Clare, Isabella, Kalamazoo, Kent: ---------- $185
All other counties – please call 248.645.3210.

All travel costs apply to the Acheson Mobile Planetarium, Family Science Nights, Science on the GO! programs, and Physics of Fling.

SCIENCE ON THE SCREEN!

PRICE PER PROGRAM *(MAX 30 STUDENTS PER PROGRAM)* ---------- $175

AT TIME OF REGISTRATION:

A NON-REFUNDABLE 50% deposit is required when submitting your registration online and must be received within two weeks if registering by phone. Balance is due no later than day of visit.

- Field trips require a minimum of 20 paying guests to qualify for group rates.
- Cranbrook Institute of Science membership discounts and admission do not apply to field trips.

CANCELLATIONS

MADE MORE THAN 30 CALENDAR DAYS BEFORE DATE OF VISIT:

- Reschedule with no additional fees.
- Your 50% non-refundable deposit will be credited towards a future field trip occurring before June 5, 2020.
- Remaining pre-payment greater than 50% will be refunded.

MADE LESS THAN 30 CALENDAR DAYS BEFORE DATE OF VISIT:

- Your 50% deposit is forfeited.
- Any remaining will be credited to a future field trip occurring before June 5, 2020.

EDUCATIONAL PROGRAMS PROUDLY SPONSORED IN PART BY:

Acheson Family Foundation
Ally Financial
Asplundh Tree Expert Company
Barton Malow
Bosch Community Fund
Butzel Long
City Renovation and Trim
Comcast – Heartland Region
Consumers Energy Foundation
Deborah L. Cooper
DENSO International America, Inc.
Doeren Mayhew
DeRoy Testamentary Foundation
DTE Electric Company and DTE Energy Foundation
Flagstar Bank
Forevermark Diamonds
The Fred A. and Barbara M. Erb Family Foundation
General Motors Corporation
Dan and Jennifer Gilbert
Linda H. Gillum
Gonzalez Production Systems
Great Lakes Water Authority
Greenstone's Fine Jewelers
IBEW Local 17
Ideal Group
Chris and Kelle Ilitch
ITC Holdings Corporation
Jeff Jewell
Kappen Tree Service
The Karen & Drew Peslar Foundation
Kiewit Power Constructors
The Kresge Foundation
Oakland University
Bruce and Kimberly Peterson Family Fund
LeCom Inc.
Marty Lagina
Mary G. Stange Charitable Trust
MASCO Corporation Foundation
The Mast Family
Michigan Humanities Council
Charles Stewart Mott Foundation
Oakland County Water Resources Commissioner's Office
PNC Foundation
Pure Oakland Water
Quanta Services
Laurie Sall and Associates
SEMCOG, the Southeast Michigan Council of Governments
Roy Smith Company
Stamper Facility Management
David C. Stone
The Townsend Corporation
Justin and Jodi Trivax
Trudeau Wealth Management
Frank Wheatlake
Robert Wilson and Sandy Smith

science.cranbrook.edu