

Summer 2017



EUREKA!



# COURSE CATALOGUE

**Rookie Group 1** Staff Leader: Maryanisa Intern: Sabina

Dates:	July 11
Title:	Seeing the Forest For the Trees
Instructor:	Lena Fletcher
STEM	Environmental Conservation and Forestry
Location	Outside on Campus
Workshop Summary:	Scholars will explore the amazing forest on the UMass campus. Many of the native trees found in Massachusetts can be found in the campus forest. Scholars will walk to the campus forest near the Sylvan dorm area, learn to identify some of the native forest species, consider the ecology of trees and why some grow in some places, and not others, and make observations of the forest ecosystem. Connections will be made to the trees and forested areas in their communities.

Dates:	July 12
Title:	A look into the Past! Stars, Dinosaurs and local geology.
Instructor:	Fred Venne
STEM	Astronomy and Geology
Location	<u>Amherst College Planetarium</u> and <u>Amherst College Beneski Museum</u> Bassett Planetarium: Amherst College 11 Barrett Hill Dr. Bus drop off and pickup will be at Converse Hall by the main intersection in Amherst.
Workshop Summary:	Scholars will visit the Bassett Planetarium on Amherst College campus to learn about how stars move in the skies over Western Massachusetts, how the Earth's movement relates to the seasons, and what causes eclipses and phases of the moon. Then, scholars will move to the Beneski Museum and become dinosaur detectives, where they will learn how to figure out how tall and fast a dinosaur was, when it was alive, just by studying their fossilized footprints.

Dates:	July 13
Title:	Grow Your Math with MathSpring
Instructor:	Danielle Allessio and Beverly Woolf
STEM	Math and Computer Science
Location	On Campus
Workshop Summary:	MathSpring is an intelligent tutoring system for grades 5-10 that individualizes instruction. The system helps students solve math problems with animated hints and provides a learning companion to work with. This workshop will give students an opportunity to engage with math in a fun and interesting way while providing graduate researches insight on how to improve the math tutor.

July 14	Friday Field Trip to Look Park
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Dates:	July 17
Title:	Your Human Genome!
Instructor:	Courtney Babbitt
STEM	Biology
Location	On Campus
Workshop Summary:	Scholars will engage in hands-on DNA isolation, and will examine DAPI-stained swabs of their own genomes. Additionally, we will debate the question “what if someone asks to sequence your genome?” which is going to be a more and more critical question as these student become voters, parents, and patients.

Dates:	July 18
Title:	How Do You Build a Fish? Embryos, mutants and the extraordinary process of development.
Instructor:	Craig Albertson
STEM:	Biology
Location:	ISB 360
Workshop Summary:	During this workshop scholars will explore the question “how do embryos develop over time”? Scholars will use both regular and fluorescent microscope techniques to observe living fish embryos at different stages of development. They will use deductive reasoning to understand how development unfolds over time to produce living organisms. Then, they will explore what happens when embryos are exposed to environmental toxins and how those mutations could relate to human development!

Dates:	July 19 and 20
Title:	Can I really Take a College Class to Learn How to Climb Trees??
Instructor:	Brian Kane
STEM	Environmental Conservation and Math
Location	Outside on Campus
Workshop Summary:	This workshop will involve basic tree climbing skills, incorporating trigonometry, vectors, friction and other concepts from Newtonian mechanics. Scholars will get the chance to perform math and physics with their bodies as they practice climbing trees and calculating the process.

July 21	Friday Field Trip to Boston Science Museum
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Dates:	July 24
Title:	Time Travel 101: Digging Up the Past
Instructor:	Isaac Larsen
STEM	Geology
Location	Outside on Campus
Workshop Summary:	The workshop will be a geocaching-style tour of the geology around the UMass campus. Scholars will use maps to find stations located around campus, and at each station they will complete a short activity about the geologic feature located there and receive a clue for the final puzzle. After visiting all the stations, the scholars will have all the clues to complete the final puzzle. This activity will get scholars active outside, develop geospatial skills, promote environmental awareness, and teach them about both the local geology and some broad geologic concepts.

Dates:	July 25
Title:	Birds in Our Neighborhood
Instructor:	Susannah Lerman
STEM:	Environmental Conservation
Location:	Heritage Park in Holyoke
Workshop Summary:	Scholars will learn about some of the cool wildlife and ecology they can observe in their neighborhoods. They will assist with the transformation of Heritage Park into a living laboratory. This will include bird banding, using nets to safely catch birds around the park, and searching for the birds that were marked in previous years. Scholars will have an opportunity to handle live birds and observe how birds use different habitat features commonly found in our parks and backyards.

Dates:	July 26
Title:	Growing Edible Ecosystems: Permaculture Tour and Tasting
Instructor:	Xochiquetzal Salazar
STEM:	Permaculture
Location:	Outside at the Franklin Permaculture Garden
Workshop Summary:	Permaculture is an agricultural design science that models healthy, natural ecosystems in order to create resilient, man-made systems like communities, economies, and gardens. The UMass Permaculture Initiative is changing the way the campus interacts with its food and surroundings with the creation of on-campus permaculture gardens. In this workshop, scholars will explore one of the award-winning permaculture gardens on campus and learn about how we can draw upon nature in order to create edible ecosystems that are beneficial to the earth and to people. There will also be a chance for scholars to get their hands dirty and taste new things!

Dates:	July 27
Title:	Endangered Species in Our Water
Instructor:	Jen Lapis/ US Fish and Wildlife Service
STEM:	Environmental Conservation and Ecology
Location:	Fort River Wildlife Preserve: 69 Moodybridge Rd., Hadley, MA
Workshop Summary:	Scholars will tour the Fort River Birding and Nature Trail located at the Fort River Division of the Silvio O Conte National Fish and Wildlife Refuge. The tour will include discussion about the history and purpose of the refuge, as well as hands-on activities related to the ecosystem including exploring the macro-invertebrates and other animals that live in refuge waters and learning about animal adaptations with pelts and skulls.

July 28	Friday Eureka-thon Prep
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Dates:	July 31-August 3
Title:	Creative Computing with Scratch
Instructor:	Ben Marlin
STEM:	Computer Science
Location:	On Campus
Workshop Summary:	This workshop will introduce scholars to computer programming with Scratch using hands-on exercises and mini-projects focused on animation and games. The later sections of the workshop will focus on building Scratch applications that use external inputs from a variety of sensors including wireless activity sensors on smart phones.

August 4	Eureka-thon Grand Finale Celebration!
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Summer 2017



EUREKA!



# COURSE CATALOGUE

<b>Rookie Group 2</b> <b>Staff Leader: Wilmarie</b> <b>Intern: Maeve</b>
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Dates:	July 11
Title:	How do you build a fish? Embryos, mutants and the extraordinary process of development.
Instructor:	Craig Albertson
STEM:	Biology
Location:	ISB 360
Workshop Summary:	During this workshop scholars will explore the question “how do embryos develop over time”? Scholars will use both regular and fluorescent microscope techniques to observe living fish embryos at different stages of development! They will use deductive reasoning to understand how development unfolds over time to produce living organisms. Then, they will explore what happens when embryos are exposed to environmental toxins and how those mutations could relate to human development!

Dates:	July 12
Title:	Grow Your Math with MathSpring
Instructor:	Danielle Alessio and Beverly Woolf
STEM	Math and Computer Science
Location	On Campus
Workshop Summary:	MathSpring is an intelligent tutoring system for grades 5-10 that individualizes instruction. The system helps students solve math problems with animated hints and provides a learning companion to work with. This workshop will give students an opportunity to engage with math in a fun and interesting way while providing graduate researches insight on how to improve the math tutor.

Dates:	July 13
Title:	Don't Lose Your Privacy on the Internet
Instructor:	Amir Houmansadr
STEM	Computer Science
Location	On Campus
Workshop Summary:	We go on the Internet almost every day for different activities including social networking websites, emailing our friends, and even online shopping. Unfortunately, in many of these activities we compromise important private information about ourselves. In this workshop scholars will explore examples of how we expose ourselves online and some mechanisms to protecting private information on the Internet.

July 14	Friday Field Trip to Look Park
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Dates:	July 17 and 18
Title:	Can a Cow Charge Your Phone? Can a River Toast Your Bagel?
Instructor:	River Strong and Dwayne Breger
STEM	Renewable Energy

Location:	Day 1: BCT162 Day 2: Field Trip
Workshop Summary:	<p>Scholars will explore what energy is and the various places it comes from, its impacts, and how it relates directly to our lives. They will build then explore the concept of renewable energy by constructing a pizza box solar oven for cooking s'mores under the sun.</p> <p>On Day 2, Scholars will see renewable energy at work in our own community by visiting local clean energy installations: the Holyoke hydroelectric facility and Barstow's Longview Farm to see their anaerobic digester (and see baby cows and sample their ice cream!).</p>

Dates:	July 19
Title:	Birds in Our Neighborhood
Instructor:	Susannah Lerman
STEM:	Environmental Conservation
Location:	Heritage Park in Holyoke
Workshop Summary:	<p>Scholars will learn about some of the cool wildlife and ecology they can observe in their neighborhoods. They will assist with the transformation of Heritage Park into a living laboratory. This will include bird banding, using nets to safely catch birds around the park, and searching for the birds that were marked in previous years. Scholars will have an opportunity to handle live birds and observe how birds use different habitat features commonly found in our parks and backyards.</p>

Dates:	July 20 and 24 (Thursday and Monday)
Title:	Good Germs! Bugs that Help Plants Grow!
Instructor:	Dong Wang, Miriam Hernandez-Romero, Jedaidah Chilufya
STEM:	Plant Biology
Location:	BCT 162
Workshop Summary:	<p>Scholars will use observation, discussion and even games to learn how bacteria and plants help each other survive. During this two day workshop, scholars will dig up plants from the garden, and the find 'good bacteria' on their roots to grow on a Petri dish so they can observe, draw and take pictures of it under a microscope. Then, scholars will expand their understanding microscopic organisms to answer the question "how many living organisms are living in a drop of water?"</p>

Dates:	July 25
Title:	Growing Edible Ecosystems: Permaculture Tour and Tasting
Instructor:	Xochiquetzal Salazar
STEM:	Permaculture
Location:	Outside at the Franklin Permaculture Garden
Workshop Summary:	<p>Permaculture is an agricultural design science that models healthy, natural ecosystems in order to create resilient, man-made systems like communities, economies, and gardens. The UMass Permaculture Initiative is changing the way the campus interacts with its food and surroundings with the creation of on-campus permaculture gardens. As part of the Healthy and Sustainable Food System Initiative, UMass Permaculture serves as a hands-on teaching tool for students to learn about local, healthy food systems. In this workshop, scholars will explore one of our award-winning permaculture gardens and learn about how we can draw upon nature in order to create edible ecosystems that are beneficial to the earth and to people. There will also be a chance for participants to get their hands dirty and taste new things!</p>

Dates:	July 26
Title:	Time Travel 101: Digging Up the Past
Instructor:	Isaac Larsen
STEM	Geology
Location	Outside on Campus
Workshop Summary:	The workshop will be a geocaching-style tour of the geology around the UMass campus. Students will use maps to find stations located around campus, and at each station they will complete a short activity about the geologic feature located there and receive a clue for the final puzzle. After visiting all the stations, the students will have all the clues to complete the final puzzle. This activity will get kids active outside, develop geospatial skills, promote environmental awareness, and teach students about both the local geology and some broad geologic concepts.

Dates:	July 27
Title:	Melting Ice and Rising Seas: What Does the Future Have in Store For Us?
Instructor:	Isla Castanada
STEM	Geoscience and Climatology
Location	On Campus
Workshop Summary:	Through several hands-on demonstrations (many involving melting ice) we will illustrate what happens when ice melts and sea level rises. Scholars will make observations, take measurements, and graph data. Then, they will use Google Earth to observe melting glaciers today and discuss what the future holds and what climate changes they can expect to see in their lifetimes.

July 28	Friday Eureka-thon Prep
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Dates:	July 31
Title:	Endangered Species in Our Water
Instructor:	Jen Lapis/ US Fish and Wildlife Service
STEM	Environmental Conservation and Ecology
Location	Fort River Wildlife Preserve: 69 Moodybridge Rd., Hadley, MA
Workshop Summary:	Scholars will tour the Fort River Birding and Nature Trail located at the Fort River Division of the Silvio O Conte National Fish and Wildlife Refuge. The tour will include discussion about the history and purpose of the refuge, as well as hands-on activities related to the ecosystem including exploring the macro-invertebrates and other animals that live in refuge waters and learning about animal adaptations with pelts and skulls.

Dates:	August 1
Title:	Explore Fun Chemical Reactions: Making Soap and Fruity Scents!
Instructor:	Lara Alhariri
STEM	Chemistry
Location	On Campus
Workshop Summary:	Scholars will learn the big difference a chemical reaction can make in the properties of chemicals and how that knowledge can be used to change the way things smell! They will learn how and why combining chemicals can make vinegar smell like banana or aspirin smell like mint. Then, scholars will learn how to use chemistry to change common oils like canola, olive and coconut oil into soap. Discussions will involve how soap actually works, what are hydrophobic and hydrophilic interactions, and how ions in tap water can change how well soap works. The workshop will end with a fun demonstration of changing vegetables, flowers, and mint into a glass-like material that will shatter when dropped!

Dates:	August 2
Title:	The Real Reason For Brains!
Instructor:	Julia Choi
STEM	Kinesiology
Location	BCT 162
Workshop Summary:	Practice makes perfect - how does the brain adapt our movements to the constantly changing environment? Scholars will engage in fun challenges designed to confuse their brains including wearing prism goggles that shift their vision. These activities are designed to demonstrate that the brain uses "error" signals from each movement to make adjustments that help improve motor performance.

Dates:	August 3
Title:	Brains! Ooey, Goey and Utterly Amazing!
Instructor:	Beata Kaminska
STEM	Anatomy, Brain Science
Location	Holdsworth 308
Workshop Summary:	Scholars get to discover how cool brains are and how different parts of the brain work. Activities including observing brains of different animals in the lab and then picking up a scalpel and working in teams to dissect a sheep brain!

August 4	Eureka-thon Grand Finale Celebration!
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Summer 2017



# COURSE CATALOGUE

**Vets Group 1** Staff Leader: Mariana Intern: Mae

Dates:	July 11 and 12
Title:	Treasuring Hunting and Navigating with Geocache
Instructor:	Christine Hatch
STEM	Technology
Location	TBD
Workshop Summary:	Geocaching is a real-world, outdoor treasure hunting game using GPS-enabled devices. Scholars will navigate to a specific set of GPS coordinates and then attempt to find the geocache (container) hidden at that location.

Dates:	July 13
Title:	Plant Detectives! Solving the mystery of what makes plants sick
Instructor:	Michelle DaCosta, Kelly Allen, and Elisha Allan-Perkins
STEM	Plant Biology
Location	On Campus
Workshop Summary:	Plants are constantly under attack from the same types of organisms that make humans and animals sick, and they also endure stressful conditions from their environment. In this workshop, scholars will learn about the different ways plants can become sick. They will work as groups to diagnose a sick plant using a variety of laboratory techniques that plant pathologists ("plant doctors") use every day. Discussion will center around what researchers are working on to keep plants from becoming sick and the impacts that these problems have on society.

July 14	Friday Field Trip to Look Park
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Dates:	July 19
Title:	Too Fast, Too Furious: The Physics of Car Racing! (Field Trip to Bay Path Science Department)
Instructor:	Yadilette Rivera Colon
STEM	Physics
Location	Bay Path College- They will provide transportation from Girls Inc. and Lunch
Workshop Summary:	This workshop will allow scholars to easily design, build and race lightweight "gas"-powered vehicles. The gas source is air in a balloon! The scholars will develop their understanding of simple machines, motion, force, friction, energy transfer, mechanical energy and problem solving. Besides the hands-on workshop, scholars will have a campus tour and lunch will be provided.



Dates:	July 18
Title:	Making Everyday Things Smarter - Lego for Engineers and Computer Scientists
Instructor:	Sunghoon Lee
STEM	Computer Science
Location	On Campus
Workshop Summary:	Scholars will explore the idea that the Internet of Things (IoT) is all around us and how they use it every day in their lives. They will learn to turn on/off a strip of LED lights using their smartphone – which uses the programming and technology of real-world ‘smart-home’ lighting systems. During this workshop, scholars will be introduced to electronics, embedded systems, and mobile phone development to complete fun, beginner friendly challenges.

Dates:	July 19
Title:	Your Brain on Yoga: Silencing Anxiety from the Inside Out
Instructor:	Amber Vayo
STEM	Behavioral and Social Science
Location	BCT 162
Workshop Summary:	During the workshop scholars will learn about what anxiety is, how they experience it, and where it comes from. They will get a chance to try ‘trauma sensitive yoga’, a type of yoga that was developed by a neuropsychiatrist to help trauma patients. Yoga activities include creating their own poses and fun yoga games. Finally, scholars will discuss how STEM can be used in all kinds of ways to help people, even in something as "earthy-crunchy" as yoga.

Dates:	July 20
Title:	DIY Herbal Skin Care: Plants are Medicine!
Instructor:	Xochiquetzal Salazar, Megan Migliozi, Kayleigh Boucher, Brittany Florio
STEM	Plant Biology
Location	On Campus
Workshop Summary:	Scholars will explore the world of herbal medicine and the chemical reactions at play when they introduce herbs to various solvents, and our skin. In this hands-on workshop, scholars will create their own salves, lip balms, sugar scrubs, and salt scrubs using herbs grown in UMass' own Permaculture Gardens, while investigating the properties of each ingredient and how they work to heal our skin!

July 21	Friday Field Trip to Boston Museum of Science
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Dates:	July 24-27
Title:	Is There a Connection Between Breast Cancer and the Environment?
Instructor:	Dr. Joe Jerry, Dr. Sallie Schneider, Dr. Karen Dunphy, and Dr. Laura Vandenberg
STEM	Public Health, Environmental Science, Molecular Biology
Location	On Campus (ISB 364)
Workshop Summary:	Is there a connection between the environment and breast cancer? During this important, hands on and informative workshop, scholars will learn from this team of cancer researchers about the answer to this important question and more. Scholars will use microscopes to observe breast tissue samples and learn to recognize cancer cells at different stages of development. They will learn about what techniques researchers and scientists use to learn about and prevent cancer and how environmental toxins may affect human health.

Dates:	July 31- August 3
Title:	The Life of an Insect: Bee-ing Like a Bumblebee and How to Make an Insect Collection
Instructor:	Lynn Adler, George LoCascio, Luis Aguirre, and Julie Davis
STEM	Wildlife Biology, Bees
Location:	On Campus
Workshop Summary:	<p>During this four day course, scholars will delve into the lives and survival of bees! On the first day scholars will take a 'tour' into the mind of a bee and visit the campus gardens to explore the traits in flowering plants that attract bees including floral scents, colors and shapes.</p> <p>During day two, scholars will build on their knowledge of flower morphology and engage in a short experiment where they manipulate flowers to observe bee response to changes. Do bees visit plants with certain traits less, more or about the same?</p> <p>The third day is a more in depth exploration into the world of entomology. While bumblebees are cute, there are many more insects that are just as interesting. To learn about other insect species, scholars will catch and preserve wild butterflies, bees, spiders and other kinds of insects. They will be asked to make collections based on how similar the insects are.</p> <p>On the final day, Dr. Lynn Adler will wrap up the week of activities. She will demonstrate the basics of running a lab based on bumblebee research. Scholars will learn how bee colonies are reared, and have the chance to dissect bees and evaluate their health using microscopy.</p>

August 4	Eureka-thon Grand Finale Celebration!
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Summer 2017



# COURSE CATALOGUE

**Vets Group 2: Staff Leader: Breanna Intern: Rachel**

Dates:	July 10
Title:	Broken Brains: How Scientists Learn from Our Brains' Mistakes
Instructor:	Merika Wilson, David Ross, and Patrick Sadil
STEM	Psychological and Brain Sciences
Location	
Workshop Summary:	Everybody makes mistakes. We have all misremembered things and forgotten things. Sometimes we even see, hear, or feel things that aren't there - have you ever felt your phone vibrate even though it didn't? Psychologists study these mistakes to learn how the brain works. In this workshop, scholars will conduct a variety of experiments designed to trip-up your senses and mess with your memory. They will learn to think like a psychologist by using these mistakes to understand the brain. They will see what happens inside a person's brain when they do different tasks, and learn how injured brains have helped psychologists better understand healthy brains.

Dates:	July 11
Title:	Your Brain on Yoga: Silencing Anxiety from the Inside Out
Instructor:	Amber Vayo
STEM	Behavioral and Social Science
Location	BCT 162
Workshop Summary:	During the workshop scholars will learn about what anxiety is, how they experience it, and where it comes from. They will get a chance to try 'trauma sensitive yoga', a type of yoga that was developed by a neuropsychiatrist to help trauma patients. Yoga activities include creating their own poses and fun yoga games. Finally, scholars will discuss how STEM can be used in all kinds of ways to help people, even in something as "earthy-crunchy" as yoga.

Dates:	July 13
Title:	Making Everyday Things Smarter - Lego for Engineers and Computer Scientists
Instructor:	Sunghoon Lee
STEM	Computer Science
Location	On Campus
Workshop Summary:	The goal of this workshop is to introduce scholars to the world of Internet of Things (IoT). Scholars will learn, through a series of incremental learning processes, to turn on/off a strip of LED lights using their smartphone -- a real-world example of implementing smart-home light system. They will be introduced to electronics (LED lights), embedded system (Arduino), and mobile phone development (Blynk). All of these will be implemented using a graphical code, such that they don't have to write an actual code. The workshop will be designed to accommodate those scholars who do not have any prior experience in electronics or coding; they will work like building Lego blocks.

July 14	Friday Field Trip to Look Park
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Dates:	July 17
Title:	Complex Fluids and Soft Solids: Physics and Chemistry of Bread and Baking
Instructor:	Jenny Ross and Chef Simon
STEM	Chemistry
Location	Bake Shop
Workshop Summary:	Did you know that cooking is a science? Learn all about the chemistry behind baking, and how a well-run kitchen needs to function like a science lab. You will work together to bake loaves of bread with a dash of science magic.

Dates:	July 18
Title:	Plop! Fluid Dynamics and the Egg Drop
Instructor:	Jenny Ross
STEM	Physics and Chemistry
Location	
Workshop Summary:	Scholars will build on what they learned from the previous day in the Bake Shop as they explore fluids quantitatively during a discussion of diffusion, viscosity, non-Newtonian fluids, and reversibility of fluids. Activities include making "oobleck" and silly putty! As a finale, the oobleck will be used to perform an egg drop at variable heights and then the data collected from the experiment will be analyzed.

Dates:	July 19
Title:	Too Fast, Too Furious: The Physics of Car Racing! (Field Trip to Bay Path Science Department)
Instructor:	Yadilette Rivera Colon
STEM	Physics
Location	Bay Path College- They will provide transportation from Girls Inc. and Lunch
Workshop Summary:	This workshop will allow scholars to easily design, build and race lightweight "gas"-powered vehicles. The gas source is air in a balloon! The scholars will develop their understanding of simple machines, motion, force, friction, energy transfer, mechanical energy and problem solving. Besides the hands-on workshop, scholars will have a campus tour and lunch will be provided.

Dates:	July 20, and July 24-25
Title:	Look Into Your Brain Through Brain Scanning!
Instructor:	Youngbin Kwak
STEM	Psychological Brain Science
Location	On Campus- Kwak Lab Tobin Hall
Workshop Summary:	Scholars will become "budding neuroscientists" as they learn the basic concepts of human neuroscience including recent findings. During this workshop, scholars will participate in a research study using brain imaging techniques including functional MRI and EEG to collect information about the brain! Scholars will have the opportunity to go through the entire process of a human neuroscience research from data collection to analysis.

Dates:	July 26
Title:	Are You What You Eat?
Instructor:	Elizabeth Berton-Johnson
STEM	Public Health
Location	On Campus
Workshop Summary:	<p>This workshop introduces scholars to the science behind dietary recommendations reported by the media. Scholars will develop and conduct a short study to see if vitamin D intake is related to heart rate. They will read and discuss examples of dietary recommendations about Vitamin D intake from current teen magazines and conduct an experiment to test how these recommendations affect their own heart rates! This experiment will involve developing and taking a short questionnaire on how much vitamin D-rich food they eat, and measuring their own heart rates. Once the experiment is complete, they will use simple statistics to evaluate their data and decide if vitamin D intake is related to heart rate. This workshop will provide an opportunity to learn about nutrition and epidemiology research, how statistics can be used to answer important questions, and how science is conveyed to the public.</p>

Dates:	July 27
Title:	DIY Herbal Skin Care: Plants are Medicine!
Instructor:	Xochiquetzal Salazar, Megan Migliozi, Kayleigh Boucher, Brittany Florio
STEM	Plant Biology
Location	On Campus
Workshop Summary:	<p>Explore the world of herbal medicine and the chemical reactions at play when we introduce herbs to various solvents, and our skin. In this hands-on workshop, scholars will create their own salves, lip balms, sugar scrubs, and salt scrubs using herbs grown in UMass' own Permaculture Gardens, while investigating the properties of each ingredient and how they work to heal our skin!</p>

July 28	Friday Eureka-thon Prep
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Dates:	July 31-August 3
Title:	Is There a Connection Between Cancer and the Environment?
Instructor:	Dr. Joe Jerry, Dr. Sallie Schneider, Dr. Karen Dunphy, and Dr. Laura Vandenberg
STEM	Public Health, Environmental Science, Molecular Biology
Location	On Campus (ISB 364)
Workshop Summary:	<p>Is there a connection between the environment and breast cancer? During this important, hands on and informative workshop, scholars will learn from this team of cancer researchers about the answer to this important question and more. Scholars will use microscopes to observe breast tissue samples and learn to recognize cancer cells at different stages of development. They will learn about what techniques researchers and scientists use to doing to prevent cancer and how environmental toxins may affect human health.</p>

August 4	Eureka-thon Grand Finale Celebration!
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