

# ARTS & SCIENCES

from the museum of arts & sciences, in association with the smithsonian institution  
summer 2022

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# ARTS & SCIENCES

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Edison Triumph Phonograph, ca. 1890



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IN MAY, THE MUSEUM OF ARTS & SCIENCES WAS PRESENTED WITH 2022 VISITORS' CHOICE AWARDS FOR BEST MUSEUM & GALLERY AND BEST ARTS, CULTURE & HERITAGE EVENT. (FROM LEFT TO RIGHT) MOAS DIRECTOR OF MARKETING & PR, JENELLE CODIANNE, CVB EXECUTIVE DIRECTOR, LORI CAMBELL BAKER, MOAS INTERIM EXECUTIVE DIRECTOR, MARIA HANE



MARIA HANE

It has been a joy and an honor to serve as the interim executive director of the Museum of Arts & Sciences (MOAS) over the last six months. The Museum is prepared to welcome its next generation of leadership, and I'm excited about the opportunities ahead.

One of the highlights of my tenure is witnessing how much Daytona Beach and its surrounding communities support and embrace MOAS as an integral part of their lifestyle as a social and educational resource. For example, the Museum's Summer Learning Institute is at capacity for the third year in a row according to Zach Zacharias, Senior Curator of Education and History. It's a similar outcome for the sold-out quarterly Wine Tastings and other social events. I encourage you to mark your calendars for the next Wine Tasting in July or our Succulents & Sangria social in August to enjoy an evening

of drinks and good conversation with friends at the Cici and Hyatt Brown Museum of Art. While you are there, check out the newest gallery installation of Florida art celebrating the most southern point of the continental U.S. – Key West.

The Museum also serves as an anchor destination for the more than 10 million visitors who come to the area annually. In May, MOAS was recognized as a "beloved attraction" by area visitors winning the inaugural 2022 Visitors' Choice Award from the Daytona Beach Convention and Visitors Bureau in the category of Museums & Galleries.

I want to thank the Museum's supporters, Board of Trustees, volunteers, and especially the outstanding staff members who have welcomed me so quickly into the MOAS family. I will enjoy watching the growth and evolution of a new vision under the care and leadership of a permanent Executive Director this year, and look forward to a continued friendship.



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**Arts & Sciences** is published quarterly by the Museum of Arts & Sciences, 352 S. Nova Road, Daytona Beach, Florida 32114, telephone 386.255.0285, website www.moas.org. Income from contributors helps offset a portion of the expense involved in the production of this publication.

**ADVERTISING INQUIRIES**

All inquiries regarding advertising should be directed to the MOAS Marketing and Public Relations Department at 386.255.0285, ext. 320.

**ABOUT THE MUSEUM OF ARTS AND SCIENCES**

The Museum of Arts and Sciences is a not-for-profit educational institution, chartered by the State of Florida in 1962 and accredited by the American Alliance of Museums. Museum collections and research include Cuban and Florida art, American fine and decorative arts, European fine and decorative arts, pre-Columbian and African artifacts, Pleistocene fossils, Florida history and regional natural history. Permanent and changing exhibitions, lectures, and classes highlight educational programs. The Museum houses changing arts and sciences exhibition galleries, permanent collection galleries, a gallery of American art, paintings, decorative arts and furniture, the Charles and Linda Williams Children's Museum, the Cici and Hyatt Brown Museum of Art, the Cuban Fine and Folk Art Museum, the Lowell and Nancy Lohman Family Planetarium, library, the Frischer Sculpture Garden, maintains nature trails in a 90-acre preserve in adjacent Tusawilla Park, and operates Gamble Place in Port Orange.

The Museum of Arts and Sciences is recognized by the State of Florida as a cultural institution and receives major funding from the State of Florida, Department of State, Division of Cultural Affairs and the Florida Council on Arts and Culture.

Major Museum programs and activities for members, school children and the general public are also supported by grants from the County of Volusia, the Guild of the Museum of Arts & Sciences, Elfum Community Fund, and over 30 Major Sponsors from the community.

**MUSEUM HOURS:**  
10 a.m. - 5 p.m. Monday through Saturday  
11 a.m. - 5 p.m. Sunday

The Museum of Arts and Sciences is committed to the Americans with Disabilities Act by making our facility and programs accessible to all people. If you have any special requirements, suggestions, or recommendations, please contact our representative, Executive Director, Andrew Sandall, at 386.255.0285. If you prefer, you may contact the Cultural Council of Volusia County representative at 386.257.6000, or the Division of Cultural Affairs, The Capitol, Tallahassee 850.487.2980, or TT 850.488.5779.

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# VOLUNTEER *of the Quarter*



## KATHIE DEMARINIS

Kathie and her family moved to Port Orange from the Philadelphia area shortly before COVID struck in October 2019. She has three daughters: Emily graduating from ASU next year, and Lindsey and Katie (also a volunteer) who are starting USF and FSU, respectively, this summer.

Before moving to the Daytona Beach area, Kathie decided to set herself up with some volunteer opportunities so she could meet people more quickly. She discovered MOAS and signed up just weeks after moving to Port Orange. Kathie is so happy that she chose to join the volunteer team with such a wonderful group of people. She volunteers mostly with special events including night sky viewings at Gamble Place, wine tasting events, film festivals and comedy nights, to name a few. Kathie feels she is always learning something new whenever she volunteers her time at MOAS.

# INTERN *Spotlights*



## KATIE WEDDERSTRAND

Katie is interning in the Education Department for the summer term. Through her internship she assists with the group tours, the Summer Learning Institute, and helping with the exhibit *Tech Savvy: Home Technology from the 1890s to the 1900s*.

Approaching her Senior year at Stetson University, Katie is a Social Science major with concentrations in History and Anthropology with a minor in Art History. Having an interest in all things fossilized or prehistoric ever since she started gathering up shells on the beach or watching Jurassic Park with her family, Katie hopes to use what she's learned at Stetson and apply it in both museum and field work. As of right now, Katie is conducting research as part of a Summer 2022 SURE Grant she received from Stetson on her topic, "The Bone Wars as a Study of Paleontological Growth in Western America," where she's looking into the impact of the Bone Wars, a fossil feud led by two millionaire fossil hunters, and what that could say about the direction and goal of paleontological growth during that time. After she graduates, Katie hopes to take a year off to explore and appreciate Florida's geological and paleontological sites and maybe go fossil hunting in the Peace River!



## LINDSEY CONWAY

Lindsey is currently a student enjoying an internship at MOAS. Through the internship she is assisting with research for upcoming exhibits, learning the process of curating an exhibit, and the importance of collection management. Lindsey attends

High Point University in High Point, North Carolina, where she is pursuing a double major with a BS in Psychology and a BA in Art History with a minor in Religious Studies. She was born and grew up in Port Orange, Florida, so MOAS has always been a spot where she visited nearly annually with her family and through school field trips. Outside of her majors, Lindsey is currently in the progress of publishing independent research in the Art History field and wishes to pursue a career intertwining psychology and art. Lindsey is incredibly excited to work as an intern in the Curatorial Department and she hopes her work here will in turn generate positivity at the Museum!



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Vermont Survival, etching by Luigi Lucioni (1900-1988).  
Gift of Sam and Mary Louise Marzullo.

# Luigi Lucioni MASTER AMERICAN ETCHER

A series of six etchings by Luigi Lucioni comprise one of the highlights of the Museum's current exhibition *The Bitten Line: Etchings from the Collection* on view in the Karshan Center for Graphic Arts. Long under-represented in the canon of American early 20th century art, Lucioni has been receiving renewed attention by art historians in recent years and new publications and exhibitions are being devoted to his paintings and etchings.

An Italian American immigrant who came to the United States in 1910 at the age of ten, he was a precocious talent who was destined to be an artist. His father had been a metalsmith in the Northern Italian town of Malnate and brought this skill and European tradition to Union City, New Jersey when he brought his young family to America. At the age of fifteen, Luigi was accepted into Cooper Union's art program on the strength of his draftsmanship and at nineteen,

into the National Academy of Design. This was soon followed by a Tiffany Foundation scholarship which allowed him to apprentice under painters such as John Sloan, Kenneth Hayes Miller, Gifford Beal, and Childe Hassam. The latter would prove to be a highly-influential mentor for the young artist, particularly when it came to landscape imagery such as in the etchings in this exhibition.

In the years between the two World Wars, Lucioni returned to Europe every other year from 1925 to 1929 and then again in 1937. He visited museums and collections on the continent as well as in England and the influence of his artistic forebears from the Italian Renaissance is strongly apparent in his mature works. In fact, he was quoted as stating after these many European trips that "seeing the works of Raphael, Botticelli, and Piranesi, I was done for the rest of my life."<sup>1</sup>

<sup>1</sup> Joelen Mulvaney, "Luigi Lucioni, "A View from Barre," 1991. Barre Museum/Aldrich Public Library, unpaginated.

This debt to the Italian Renaissance masters is most apparent in Lucioni's highly polished and exquisite paintings. But it is evident, also, in his etchings where we see his mastery of the early Italian preference for working every bit of the plate surface to create his image and achieve contrast and depth through patterning and texture. This was in direct opposition to the practice adopted by many of his American Impressionist predecessors, and his early mentors, of leaving large areas of the printing plate empty to create contrast in the manner of Japanese printmakers who so heavily influenced European and American artists in the late 19th century. The Japanese "less is more" aesthetic relying only on essential lines and colors in their woodblocks to create the essence of a scene poetically rather than literally, swept throughout the Western art world from c. 1860 on and would change the established idea of how to structure a rendered scene on canvas or paper forever. (Fine examples of this are represented in *The Bitten Line* exhibition in works by Manet, Renoir, and Whistler.) While Lucioni did occasionally produce what could be described as an Impressionistic landscape, he mostly stayed away from this style and seemed almost adamantly opposed to the *Japoniste* habit of leaving large blank areas on the canvas or printed paper.

In subject matter, Lucioni is firmly within the American Regionalist style of painting and printmaking. This is the movement that took hold in the years between World War I and II and was a reaction against the prevailing European

Abstractionist movement. The three main artists associated with American Regionalism are Grant Wood, Thomas Hart Benton, and John Steuart Curry. This triumvirate sponsored a style that was representational as opposed to Abstract and focused on imagery

from the country's heartland as examples of a more purely American brand of art. All three are famous for their sprawling views of fields and farms throughout the Midwest and, while he focused his output on rural Vermont landscapes, Lucioni is allied with



Peace in the Valley, etching by Luigi Lucioni (1900-1988).  
Gift of Sam and Mary Louise Marzullo.



The Three Graces, etching by Luigi Lucioni (1900-1988).  
Gift of Sam and Mary Louise Marzullo.

these artists in the spirit and tone of his works as they celebrated the great American countryside.

Vermont had been a destination for Lucioni early on as he had a cousin who he visited in Barre from 1917 on.<sup>2</sup> However, it wasn't until the early 1930s when his main collector and patroness, Electra Havemeyer Webb, invited him to her country house at Shelburne Farms that the artist decided to make Vermont home and Webb converted a building on her property into a studio for him. He later purchased a home in Manchester in 1939 and considered Vermont home from that point on, stating that this countryside "was like seeing the mountainsides of my birthplace."<sup>3</sup>

In addition to the distant mountain views that reminded him of Italy, Lucioni had a fascination with birch trees. Ubiquitous in the northern American states, birches were not only picturesque and lovely to paint, but they also immediately resonated with Lucioni's contemporaries as Robert Frost's famous "Birches" poem from 1915, an ode to the timeless nature of these trees, had circulated widely after publication in *Atlantic Monthly*.<sup>4</sup> In his famous "The Three Graces" etching, which was done after an oil painting, he also combined another layer of meaning by referencing the Three Graces from Greek myth. These were three daughters of Zeus who personified charm, grace, and beauty, and they are most often shown holding hands with one of the figures with her back to the viewer suggesting that they are dancing in a circle. They became a much-copied theme in Roman and later art and were especially

<sup>2</sup> Kirchoff, *Modern Light*, p. 23.

popular in the Renaissance. So, in adopting this title for this image, Lucioni again referenced his heritage and homeland.

With the patronage of Electra Havemeyer Webb from one of New York's most renowned art-collecting families and his early critical success in Manhattan in the 1920s, Luigi Lucioni was on a trajectory to become one of America's art luminaries. As skilled as he was in the genre of landscape painting, he was equally adept – some would say even more so – in the genres of still life and portraiture. He did not like to think of himself as a portrait painter and is quoted in a late interview in 1971 as saying that he didn't like doing portraits and questioned if he was even any good at it.<sup>5</sup> And yet he created some of the most stunning Depression-era portraits of his friends and colleagues that are currently in notable museum and private collections in the

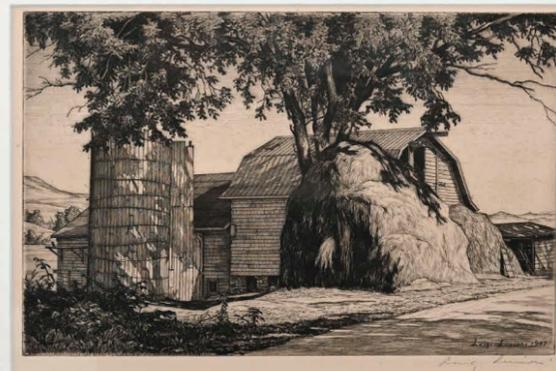
<sup>4</sup> Ibid. p. 36  
<sup>5</sup> Ibid, p. 84

Northeast. Many of these reveal, yet again, his study of Italian Renaissance painting styles and techniques.

From the 1930s on through the prime of his painting career, however, Lucioni preferred the farms, fields, and long-view mountainous vistas of rural Vermont and rendered these in numerous large scenes in oil on canvas or smaller etched versions. Both mediums show his unique style in covering every bit of these surfaces in brilliant, polished brushed or etched strokes relying on contrasting tones, textures, and rhythms to create life and animation to otherwise static scenes. In the best tradition of the Italian Renaissance, Luigi Lucioni excelled in oils and prints on paper. And the lasting legacy of his work is a testament to a great moment in American art as well.

A major source for this article was Luigi Lucioni: *Modern Light*, edited by Katie Sood Kirchoff, Rizzoli/Electa in association with the Shelburne Museum, Vermont, 2022.

The Big Haystack, etching by Luigi Lucioni (1900-1988). Gift of Sam and Mary Louise Marzullo.



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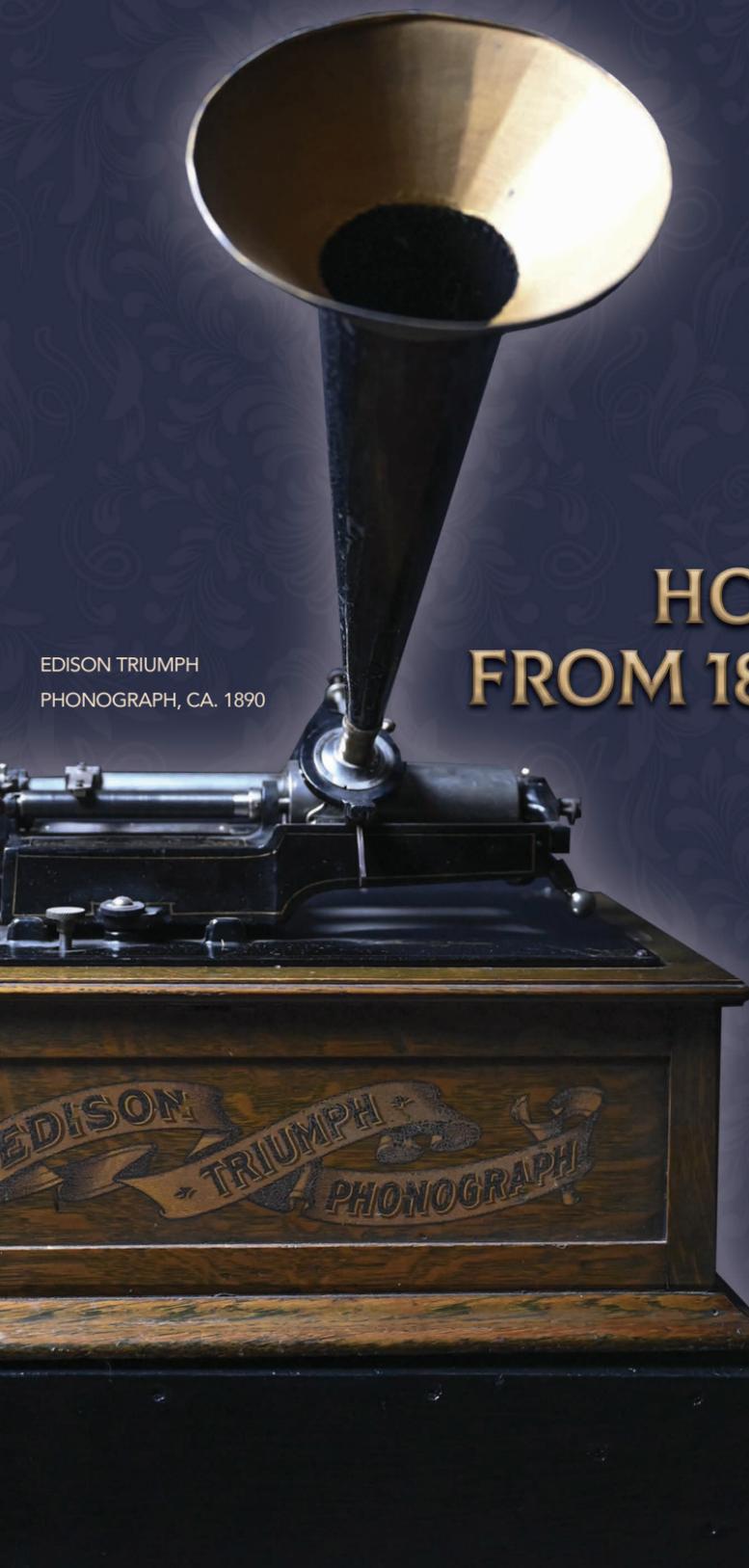
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EDISON TRIUMPH  
PHONOGRAPH, CA. 1890

# TECH SAVVY: HOME TECHNOLOGY FROM 1890s TO THE 1990s

This summer, experience the power of nostalgia through the upcoming exhibit titled, *Tech Savvy: Home Technology from the 1890s to the 1990s*. Nostalgia is an emotion related to a past place or time, mainly one that has positive associations. This family-oriented history exhibit moves through home-entertainment technology such as gramophones, tube radios, transistor radios, telephones, typewriters, and early computers. Many of these artifacts will jog memories of events in your life, and lead to interesting discussions between different generations.

The intent of the exhibit is to showcase technologies that changed with each generation, and how we remember them compared to today. Your mind will race with thoughts of, "I remember that," or "I had one of those." Research has shown that nostalgia is strongly associated with optimism and resiliency. Nostalgia not only warms the heart, but it might also warm the body. Researchers have discovered that people in cold rooms are more likely to indulge in nostalgia because reminiscing actually raises body temperature. When people are nostalgic, it almost always involves other people. As social creatures, nostalgia helps remind us of our connections to others and staves off loneliness.

## THE GRAMOPHONE

In 1877, Thomas Edison invented the first recorded music device which he called the phonograph. It used a primitive wax or tin cylinder and could only be played one time. The phonograph sound was of very poor quality. Improving on Edison's design, Alexander Graham Bell invented the first graphophone, which worked by using wax coated cardboard cylinders and a cutting stylus that moved from side to side in a zigzag groove around the record. Although the sound quality was much improved compared to the phonograph, each cylinder had to be recorded separately. This prevented mass production of the same recording and limited its functional use.

The first gramophone was invented by Emile Berliner in 1887. He was a German immigrant who settled in Washington D.C. It was his patent that gave us the first flat disc record that could be played repeatedly, was easy to store, was more durable, and could be mass-produced from a single master recording. Unlike the turntables and record players now, the first gramophone had only four basic parts - a small needle, the groove, the diaphragm, and the horn. The gramophone's recording medium made it possible to play records, which initially spun at 90 revolutions per minute. For the rotation of the discs, the apparatus was entirely mechanical. When it came to the reproduction of sound, it was equipped with a crank intended to tense the mainspring in only a few turns, an operation previously carried out by a key. By 1894, Berliner had created the United States Gramophone Company, which recorded and manufactured hundreds



KODAK BROWNIE CAMERAS, CA. 1950

of records each year. The gramophone continued to be a strong presence in the recording industry and throughout households worldwide until the beginning of World War II.

Before the invention of recorded music, most people had to experience music live. Usually, they listened to popular hymns and songs sung by a family member. That all changed with the invention of mass-produced recordings which gave access to professional musicians and vocalists and led to a celebrity culture. Recorded jazz music rose greatly in popularity in the early 1900s as a result of the new record machines. After the gramophone was invented in 1887, it became a highly sought technology for the rest of the 1890s. Commercial versions of the gramophone were a hit with the public, who were thrilled at the expanding repertoire of popular music and classical celebrity performers available on mass-produced discs.

## BROWNIE CAMERAS

The start of the 20th century marked the beginning of popular personal photography. Previously, commercial photography studios were the only ones producing prints, as the barrier to

entry was high; the materials needed were large, expensive, and required experience. The glass plate negatives and large format cameras were better suited for studio use than photography on the fly. This inaccessibility changed due to the business savvy of George Eastman and his Eastman Kodak Company.

American entrepreneur George Eastman created the first camera that used a single roll of paper (and then celluloid) film, called "The Kodak" in 1888. The Kodak cost only \$25 and came with the catchy slogan, "You press the button...we do the rest." The Eastman Kodak Company became one of the largest companies in America, with Eastman himself becoming one of the richest men in the world.

Eastman wanted a camera in every household. To make that happen he turned to Frank Brownell, whose company produced the cameras. Brownell's triumph came in 1900. The Brownie camera met Eastman's price requirement and performed well. The Brownie camera was an immediate sensation due to its simple-to-use design and inexpensive price of \$1. Every individual, irrespective of age, gender, or race, could afford to be a



AM TRANSISTOR RADIOS, CA. 1960



photographer. The name “Brownie” was picked for the cameras, as the major advertising campaign was primarily targeted at kids. The magical “Brownie” characters from Canadian artist and writer Palmer Cox’s popular series of children’s books (called “The Brownies”) were the mascots for the cameras. Each Brownie came with a 54-page booklet offering picture taking tips and inviting the buyer to become a free member of the Brownie Camera Club. Eastman also made sure that parents knew the camera would be fun for them, too. As one headline proclaimed, it was a camera “you and your dad can enjoy together.”

Box Brownies continued to be produced through the 1950s, however other materials were used in new versions of the camera. Most important was the synthetic plastic Bakelite. Patented in 1909, an early Kodak Bakelite camera called the “Baby Brownie” was released in 1934. Like the box Brownie, the mechanism of the shutter, lens, and film advance was very simple. An iconic mid-century model is the Brownie Hawkeye Flash which could be coupled with an electric flash. The Bakelite body and mechanisms functioned much like the Baby Brownie and the box Brownies. With only one aperture, one shutter speed, and bulb mode, the Brownie Hawkeye could not focus closer than about five feet.

Eastman made everyone a photographer. The use of inexpensive materials in the Brownie camera’s construction allowed the company to keep the camera’s cost within the limits of the consumer’s pocketbooks. More than 150,000 Brownies were shipped in the first year of production alone.

The Brownie launched a family of nearly two hundred camera models and related accessories and made Kodak a household name.

## RADIOS

There are many tube and transistor radios that will be on display in the exhibit. The invention of the radio is a result of the tinkering of Guglielmo Marconi. While on a vacation, he read earlier papers on electric signaling without wires. He began to understand this emerging science and began to build on the discoveries of Hertz and Tesla. At first, Marconi used a transmitter to ring a bell in a receiver in his attic laboratory. He then moved his experiments out-of-doors on the family estate near Bologna, Italy, to communicate over a further distance. By the end of 1895, Marconi created a device that could wirelessly transmit communications over 1.5 miles. He was awarded a patent for the radio with a British patent No. 12,039, called Improvements in Transmitting Electrical Impulses and Signals and in Apparatus There-for.

## MINIATURIZATION OF ELECTRONICS AND THE INTEGRATED CIRCUIT

Many of the useful electronics that are often taken for granted and commonly found throughout modern homes today, and the last half of the 20th century, can trace their technological roots back to the invention of the integrated circuit (IC), also known as the microchip or microelectronic

circuit. As the name suggests, these are circuits that integrate very tiny components such as resistors, capacitors, diodes, and transistors – that number in the hundreds, to even billions – all on a silicon substrate no bigger than a fingernail. This technological breakthrough allowed for circuitry to be extremely small, lightweight, and consume much less power, all while helping to perform complex tasks within a multitude of electronics.

The essential ingredient of an IC is the silicon substrate, or chip, that all the tiny components are attached to or embedded within. Silicon is a semiconductor – a material that has electrical properties between a conductor and insulator – that provides unique versatility when utilized in ICs. When silicon is treated with certain elements, in a process known as doping, you can change its conductivity. And when these silicon wafers of varying conductivity are sandwiched side-by-side, they can act as junctions between the various components that are all microscopically connected.

The advent of the IC was only made possible by the invention of the transistor in the late 1940s, which vastly improved ways of amplifying and switching electrical signals in electronics and helped to replace the much larger, power-hungry vacuum tubes of the era that performed a similar function. This paved the way for the miniaturization of electrical components and led to the eventual invention of the IC in the late 1950s, independently by Jack Kilby of Texas Instruments and Robert Noyce of Fairchild Semiconductor Corporation.

Kilby went on to earn a Nobel Prize in Physics in 2000 for this breakthrough (Noyce died before this was awarded) and Noyce later helped found the Intel Corporation.

As ICs became more advanced and capable of holding billions of components within them, they eventually led to the microprocessor found in home computers. The ability of a microprocessor to make billions of calculations per second is due to the constantly increasing number of electronic components found inside ICs and has allowed for many different devices in homes such as calculators, watches, laptops, mobile phones, TVs, appliances, and even toys.

## THE COMPUTER

The computer encompasses what is probably the most immediate example of how technology can change everyday life. This is probably because the computer itself seems to represent a solid, direct example of how drastically innovation can change things. Take the leap from the punch card supercomputer systems that IBM built in the 1950s, which relied on tubes and took up a whole room, to the first transistorized computer (the IBM 7030 Stretch) which was dramatically smaller and far less prone to vacuum tube breakage. In the 1960s, NASA used 16 kilobyte computers to get the astronauts to the moon compared to the computing power of today’s electronic machines.

In *Tech Savvy* we want to celebrate the introduction of home computing machines, such as the IBM Personal Computer, the Commodore PET and the Apple II. They have directly



GAF ST/105 SUPER 8 VIDEO CAMERA



1971 VINTAGE THROWBACK PATRIOTIC PHONE

changed the very core of how people live, including how they conduct business, go to school, shop, and communicate. It is on those early days that we wanted to focus, when the computer was a hobbyist pursuit, simple systems with little in the way of graphical power or memory could be bought from your local electronics store and plugged right in your TV (this is even before PC monitors were commonplace). On these early machines, some of the most successful names in modern computing learned as kids the language of computers: writing code in "BASIC" and playing "8Bit" games all on their television. The *Tech Savvy* exhibit will host a variety of these retro machines, including an early commodore computer from 1980.

## EARLY VIDEO GAMES

If you ask the average person what the first video game was, they might confidently answer 1972's Pong, but they would be wrong by a few decades. Shortly after World War II, physicists Thomas T. Goldsmith Jr. and Estle Ray Mann were inspired by radar missile displays to create "[a device] using eight vacuum tubes to simulate a missile firing at a target... and containing knobs to adjust the curve and speed of the missile."

Goldsmith and Mann filed a patent in early 1947 for their "Cathode-ray tube amusement device." The prototype was meant primarily as a technology demonstration and was never produced by DuMont Laboratories, where Goldsmith Jr. and Mann worked. Additionally, while the device

used an electronic display, it did not run on a computing device, so some contend that it may not qualify as a true "video game." Similar arguments can be made for Bertie the Brain, a 13-foot-tall tic-tac-toe computer built by Josef Kates for the 1950 Canadian National Exhibition, in this case, due to the light bulbs used in lieu of a true display screen.

Perhaps the first indisputably true "video game" was Tennis for Two, created in 1958 by American physicist William Higginbotham. On display at Brookhaven National Laboratory's annual public exhibition, it consisted of an oscilloscope used to simulate the path of a ball on a tennis court, viewed from the side, and two simple, aluminum controllers to move the ball back and forth. Created and designed purely for amusement, as opposed

to the technology demonstration iterations that came before, the game was an instant hit. Higginbotham claimed that "the high schoolers liked it best, you couldn't pull them away from it." Unfortunately, the game was short lived, as it was disassembled after the 1959 exhibition, and its components were used for other purposes.

In the following years, the success of Tennis for Two, along with advances in hardware, computer programming languages, and ARPANET (the foundation for what later became the internet), allowed for video games to be widely created and distributed. Moving from transistor-based technology to microprocessor-based technology brought games like Pong, Space Invaders, and Asteroids into arcades or home consoles. This large-scale, easy access to improvements eventually led to a glut of watered-down, poor-quality games, resulting in the video game crash of 1983.

## THE TRANSISTOR

The transistor is one of history's greatest inventions, completely revolutionizing the way human beings live, work, and interact with the world. Prior to its invention in 1948 computing devices utilized "vacuum tubes" to complete the amplification of electrical voltages necessary for an input to be translated into something else, such as sound for radio devices. While vacuum tubes were widely used, they were not without problems. The fragile glass shrouding the "tubes" would often shatter and the tubes had a much weaker current when used in larger electronic devices.

Enter the transistor – the state-of-the-art electrical amplification device. Transistors not only cut down on the bulk from vacuum tubes, but they improved on their predecessor's design with much higher amplification using the metal Germanium.

By the 1950s, producers realized that Germanium was difficult to mine and purify, which led to experimenting with silicone as a more affordable substitute. Gradually improvements were made to the original transistor design, with the usage of single crystal silicon chips in place of costly Germanium being the most innovative change. These new silicon transistors would continually be improved upon through the late 1950s, and as of 2020, the "metal oxide semiconductor field effect transistor" (MOSFET) is still the dominant type of transistor. The MOSFET transistor's main advantage over all other iterations is that it does not consume any electrical current unless it is switching quantum state (i.e. from "1" to "0," or vice versa).

Early portable computers needed these new silicon transistors to make them more compact, easier to transport, and more aesthetically pleasing. The most famous example of early transistor usage was in the portable transistor radio. Created by Texas Instruments, the Regency TR-1 was the world's first consumer transistor radio, released in a very limited run. Early transistors were largely unstable and could only be used in very low power devices. Over time these downfalls would be iterated upon, and better commercial transistors would be available. While it was Texas Instruments that made the first transistor radio examples, Sony

revolutionized the market with their release of the TR-63 in 1957. Sony mass-marketed them and sold over seven million units by the mid-1960s. This success of Sony's design led to the rise of many other tech companies creating their own designs such as Toshiba, and the Sharp Corporation, but it also led to the final demise of the humble vacuum tube. By the end of the 1950s and into the 1960s, transistors had become so common in everyday life that many began to take them for granted. With the dawn of the MOSFET transistor being coupled with the Fairchild Semiconductor in 1967, the first silicon-gate MOS integrated circuit changed the way humankind would compute forever.

*Tech Savvy* is a great family exhibit. Bring your children and friends and take a look at how changing technology has affected your own life. Tell your kids, "I had that except it was blue not red," or, "I remember that rotary dial phone, and I always wanted to see how fast I could call my friend's number." Ask them what they remember and how they think technology will change in the future. This is the power of nostalgia- connecting generations by recalling memories of past times and looking forward to the future.

**"TECH SAVVY:  
HOME TECHNOLOGY  
FROM THE 1890s  
TO THE 1990s"  
WILL BE ON DISPLAY  
FROM JULY 23, 2022  
THROUGH  
DECEMBER 4, 2022**

ROTARY PHONE, CA. 1940



# SUMMER EXHIBITS



## BEYOND THE PLATE: MURALS AND OTHER CERAMICS FROM THE KENDALL ART CENTER

OPEN THROUGH JULY 17, 2022  
FORD GALLERY

A selection of ceramic murals and other works by some of Miami's best known Cuban artists working today, including a monumental chess set made of fired and glazed clay by the artist Ivonne Ferrer. *Image Credit: Yvonne Ferrer, Humanity's Gambit, fired and glazed ceramic.*



## THE BITTEN LINE: ETCHINGS FROM THE COLLECTION

OPEN THROUGH JULY 17, 2022  
KARSHAN CENTER OF GRAPHIC ART

The Museum of Arts & Sciences has fine examples of the art of etching from the Renaissance to the present era including artists such as Rembrandt, Hogarth, Degas, Renoir and many others. These works will be brought together in a celebration of this cherished print medium, valued through the ages for the ability to bring forth rich contrast with its intense black ink impressions. *Image Credit: United States, Frank N. Wilcox (1887-1964), Fisherman of Percé, 1928; etching; donated by Mr. & Mrs. Prasse Bittel in memory of Leona E. Prasse; 92.05.008*



NEW WORLD SCHOOL OF THE ARTS

## ART AS ALCHEMY: AN EXHIBITION FROM MIAMI'S NEW WORLD SCHOOL OF THE ARTS

OPENING JULY 23, 2022  
THROUGH OCTOBER 16, 2022  
KARSHAN CENTER OF GRAPHIC ART

*Art as Alchemy* centers around an intervention by artists from New World School of the Arts, a Miami-based conservatory school, with five works from the museum's permanent collection. Selected from more than 30,000 objects at MOAS including ancient fossils, African art, European painting and decorative arts, they represent the broad spectrum of the museum's collections and allowed artists the opportunity to choose from the variety of cultures and media to create their own works and exhibit them next to the Museum's in the gallery. *This exhibition was organized by Wanda K. Texon, Sebastian Duncan-Portuondo and O. Gustavo Plascencia from New World School of the Arts, Miami.*



## TECH SAVVY: HOME TECHNOLOGY FROM 1890S TO THE 1990S

OPENING JULY 23, 2022  
THROUGH DECEMBER 4, 2022  
FORD GALLERY

Over the years, technology has revolutionized our world and daily lives. The Tech Savvy exhibit focuses on the staggering change in home technology from roughly the last 100-year span. From the invention of recorded sound with early gramophones, computers, transistor radios, cameras, and typewriters to the earliest iPod, this exhibit showcases the science and history of these life changing technologies with a heavy focus on the transition from an analog to a digital society. *Image Credit: Edison Triumph Phonograph, ca. 1890*



## A RIVER RUNS THROUGH IT: HUDSON RIVER SCHOOL AND OTHER LANDSCAPES FROM THE COLLECTION

OPEN THROUGH JULY 31, 2022  
GARY R. LIBBY ENTRY COURT

19th and early 20th century scenes of waterways from around the country, including fine examples of Hudson River School painting as well as traditions of American landscape painting from other areas in the United States. *Image Credit: Charleston, South Carolina, United States' Charles Fraser (1782-1860), On The Ashley River, South Carolina, 1840; oil on canvas; Gift of Kenneth Worcester Dow and Mary Mohan Dow; 89.16.020*



## KABLAM! POP ART/OP ART FROM THE COLLECTION

OPEN THROUGH JULY 31, 2022  
ROOT HALL

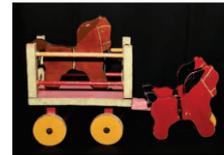
MOAS has some of the major names in mid-twentieth century Pop Art and Optical Art, including Warhol, Rauschenberg, Rosenquist, Robert Indiana and Richard Anuszkiewicz. This exhibition brings together these colorful, energetic works in homage to a groundbreaking period in 20th century art when great advances were made regarding what was considered worthy of depiction in fine art. *Image credit: John Matos (American, b. 1961); Kablam, 1999; serigraph; Gift of Martin Karlin; 2003.04.005*



## EPIPHANY! VISIONS OF ART | BEAUX ARTS OF CENTRAL FLORIDA ANNUAL EXHIBITION

OPENING AUGUST 6, 2022  
THROUGH NOVEMBER 27, 2022  
GARY R. LIBBY ENTRY COURT  
AND ROOT HALL

This is the 60th Jubilee Anniversary for Beaux Arts of Central Florida and the fifth year MOAS has hosted the annual show of this group which is comprised of 50 professional artists, working in all mediums who place a strong emphasis on experimental creative approaches brought to quality design conception and techniques. *Image Credit: Johanna Riddle, A Fragile Web, mixed media*



## CHILD'S PLAY: HISTORICAL TOYS AND GAMES FROM THE COLLECTION

OPEN THROUGH AUGUST 28, 2022  
BOUCHELLE CHANGING GALLERY

MOAS has many unique and whimsical toys and games from centuries past in its collection. This exhibition will bring together examples from Europe and America and look at the unique aspects of these treasured items that brought joy to children many decades ago. *Image Credit: Early 20th century, Toy Horse Cart with Horses; painted wood; The Root Family Museum; 99.24.2132*



## MINOR MASTERPIECES: PORCELAIN PAINTED SCENES FROM THE COLLECTION

OPENING SEPTEMBER 3, 2022  
THROUGH DECEMBER 4, 2022  
BOUCHELLE CHANGING GALLERY

The porcelain decorative arts at MOAS are from some of the finest traditions the world over. And the paintings on them are remarkable works for art in-and-of themselves. This exhibition highlights these miniature scenes, some of which were painted by highly-regarded painters, and discusses this mostly forgotten technique that was once considered essential for the well-dressed table. *Image Credit: Vienna, Austria. Royal Vienna C. Herr, Royal Vienna Pitcher, c. 1800. Porcelain. Gift of Susan de Forest Day. 76.01.054.04*

# CURRENTLY ON DISPLAY AT THE CICI AND HYATT BROWN MUSEUM OF ART



**VOLUSIA COUNTY**  
Scenes from Volusia County and the importance of art schools and art venues in the development of culture within the county. *Featured painting: South Beach Street, Daytona, James Ralph Wilcox, Volusia County*



**FLORIDA WEATHER**  
FRANCE FAMILY GALLERY  
Experience a myriad of Florida weather in just one day. The Florida Weather gallery offers a look at Florida weather as represented by art. *Featured painting: Naomi Duckman (Furth); Storm on Seven Mile Bridge, Florida Keys, 1935*



**THE SEMINOLE AND THE EVERGLADES**  
FRANCE FAMILY GALLERY  
The Everglades is a region of tropical wetlands that occupies the southern portion of Florida. Water leaving the vast, shallow Lake Okeechobee in the wet season forms a slow-moving river 60 miles wide and over 100 miles long. Human habitation in the southern portion of the Florida peninsula dates from 15,000 years ago. The region was dominated by the native Calusa and Tequesta tribes. After European colonization, both tribes declined. The Seminole nation emerged out of groups of Native Americans, mostly Creek, from what are now the northern Muscogee peoples. Artists from the early 19th century on have found the visual characteristics of the people and the land compelling subjects for artworks. *Featured painting: James F. Hutchinson; Seminole Man, 1992*



**KEY WEST: SOUTHERNMOST USA**  
A. WORLEY BROWN & FAMILY GALLERY  
SENA H. & THOMAS ZANE GALLERY  
Key West is an island located at the end of the Florida Keys, a chain of small, coral islands off the southern tip of Florida. It is the southern most point of the continental United States. The works in this exhibition demonstrate the variety of media that has been employed by artist to capture the events and scenes throughout Key West. *Featured painting: Dock Scene, ca. 1980, William Nelson, oil on canvas*

# SUMMER PROGRAMS

## MUSEUM NOTICE:

Please note that any of these events are subject to change or cancellation.

Please check the event calendar at MOAS.org for the latest updates on these upcoming events.

## ONGOING EVENTS

### Wednesday, Yoga in the Gallery

**Wednesday, 5:30pm-6:30pm**

Take a break from your busy day and enjoy weekly Yoga in the Gallery at the Cici and Hyatt Brown Museum of Art. Meet in the lobby to join registered yoga instructor, Ashley Brooks of Holistic Movements, for an hour-long session that will provide you with an opportunity to practice a series of gentle yoga poses. Class is open to all experience levels. Please bring a mat, towel, and water. Space is limited and registration is required. RSVP to the Museum at 386-255-0285. \$5.00 for members, \$10.00 for non-members.

## JULY

### Friday, July 8

**6:30pm-8:30pm**

#### Bonkerz Comedy Night

Join us in the Root Family Auditorium for a fun night with Bonkerz Comedy Club featuring comedian, Mark Evans, star of his own Dry Bar Comedy Special, with Lori Evans. Atlanta native, Mark Evans, has spent his entire life in the south. His “Southern...not stupid” tour has been taking clubs by storm all across the country. Mark brings a perfect blend of humor and sarcasm which points out the lighter side of the dumb things we see and hear every day. His fresh approach not only leaves them laughing in the aisles but hopefully a little bit wiser! Doors open at 6:00pm. Show is recommended for ages 18 and older. Seating is limited. Advanced RSVP's are encouraged by calling the 386-255-0285 or online at MOAS.org. \$10.00 for members, \$12.00 for non-members.

### Saturday, July 9

**7:00pm-10:00pm**

#### Second Saturday Laser Rock Concerts

7:00pm ElectroPop  
8:00pm Laser Zeppelin  
9:00pm Laser Metallica  
Seating is limited. Advanced purchase of tickets is recommended by calling the Museum at 386-255-0285. \$5.00 for one show, \$7.00 for two shows, \$9.00 for three shows.

### Thursday, July 14

**11:00am-12:00pm**

#### MEMBER-ONLY Coffee with a Curator:

##### Key West: Southernmost USA

Join Senior Curator of Education and History, Zach Zacharias at the Cici and Hyatt Brown Museum of Art for a look at the new exhibit titled *Key West: Southernmost USA*. Learn about the history, artists, and landmarks that make Key West one of the great cities of Florida. Register online at MOAS.org or by calling the Museum at 386-255-0285. Free for members. Must be a MOAS member to attend.

### Thursday, July 14

**5:00pm-6:30pm**

#### Key West: Southernmost USA

##### Exhibition Opening

Join us at the Cici and Hyatt Brown Museum of Art for the official opening of the *Key West: Southernmost USA* exhibition. Explore the southernmost point of the continental United States with a tour and enjoy a cash bar. Please RSVP in advance by calling the Museum at 386-255-0285. Free for members, \$5.00 for non-members.

### Friday, July 15

**3:00pm-4:00pm**

#### History Talk | The Fury of the Northmen:

##### An Introduction to the History of the Vikings

Join Senior Curator of Education and History, Zach Zacharias in the Root Family Auditorium at MOAS to discover the tremendous impact Vikings had on the history and culture of Western civilization. The Vikings were an unprecedented expansion of Scandinavian peoples moving into the wider medieval world. As traders and raiders, explorers, and colonists, they ranged from eastern North America to the Asian steppe, from Dublin to Carolingians. Learn about the Viking warships and how they dominated the seas for over 300 years. Free for members or with paid museum admission.

### Friday, July 15

**7:00pm-9:45pm**

#### Movie Night in the Lohman Planetarium:

##### Spider-Man: No Way Home

We are kicking off “Superhero Summer” in the Lohman Planetarium with your friendly neighborhood Spider-Man. After his secret identity is revealed to the world, Peter Parker enlists the magical help of Dr. Stephen Strange. When the spell goes wrong, the multiverse is broken open and visitors from alternate realities begin entering Spider-Man's universe. This film will be displayed in 16:9 aspect ratio on the Planetarium dome in stunning 4K Ultra high definition. Popcorn and snacks will be available at the concession stand. Please arrive at least 15 minutes before the event start time. Advanced purchase of tickets is recommended by calling 386-255-0285. \$10.00 for members, \$12.00 for non-members.

### Saturday, July 16

**2:00pm-5:00pm**

#### James Webb Space Telescope First Images

Join us in the Lohman Planetarium for a monumental day in astronomy as we celebrate the first images from the James Webb Space Telescope. Selected by NASA as one of the host facilities around the United States, we will first explore the JWST and how it will revolutionize our understanding of the Universe, view the first images it has taken of the farthest reaches of space, and then watch the live stream of an expert NASA panel discuss the results. Free for members or with paid museum admission. Entry for presentations is included with admission and is on a first-come, first-served basis. Seating

in the Planetarium is limited. Overflow seating for the Panel Discussion will be available in the Root Family Auditorium.

#### Schedule:

2:00pm - Unfolding the Universe with JWST, with MOAS Curator of Astronomy, Seth Mayo

3:30pm - NASA Expert Panel Discussion of First Images

### Thursday, July 21

**2:00pm-3:30pm**

#### Florida Vistas Book Club: *The Moor's Account*

Join us for our next Florida history book club meeting at the Cici and Hyatt Brown Museum of Art where we will be discussing the book, *The Moor's Account* by Laila Lalami. For more information on this book, please visit MOAS.org. RSVP to attend online at MOAS.org or by calling the Museum at 386-255-0285. Free for members, \$5.00 for future members.

### Thursday, July 21

**5:30pm-7:30pm**

#### Wine Tasting: Summertime | Red, White & Rosé

Join us at the Cici and Hyatt Brown Museum of Art for our wine tasting series with S.R. Perrott. Spend the evening among friends while you sip up knowledge on swirling, tasting, and describing wine while learning about different pairings of light appetizers from Ravish Catering. This month's program will be featuring wines that are refreshing for summertime! This event is for ages 21 and over. Seating is limited and advanced registration is required. Call the Museum at 386-255-0285 or visit MOAS.org. No refunds will be given after July 15. \$35.00 for members, \$45.00 for non-members.

### Saturday, July 23

**6:30pm-8:30pm**

#### Night of Jazz at the Museum

##### The Cody McCafferty Quartet Presents:

##### The Evolution of Swing

Join us at MOAS for a concert showcasing America's greatest original musical art form. Come along with the Cody McCafferty Quartet in the Root Family Auditorium for a guided program filled with sounds and discovery. Tune into a night exploring the history of how the swing rhythm shaped and defined everything that came after it. We hope to see you for a night of live music that cannot be missed! Seating is limited and advanced registration is required by visiting MOAS.org or by calling 386-255-0285. \$15.00 for members, \$20.00 for non-members.

### Saturday, July 23

**7:00pm-10:00pm**

#### Summer Saturday Laser Rock Concert

7:00pm Laser Vinyl  
8:00pm Rush 2112  
9:00pm Pink Floyd – The Wall  
Seating is limited. Advanced purchase of tickets is recommended by calling the Museum at 386-255-0285. \$5.00 for one show, \$7.00 for two shows, \$9.00 for three shows.

### Monday, July 25

**5:00pm-7:00pm**

#### MOAS After Hours:

##### In Partnership with The Locals Mix

Join us at the Museum of Arts & Sciences for exclusive after-hours access to all galleries, happy hour drink specials by Fun Coast Bartending, and live music by Joey Speroni and DJ Jukebox Bully, in partnership with The Locals Mix. Join the professor and students from Miami's New World School of the Arts for a discussion of their exhibition *Art as Alchemy* in the Karshan Center for Graphic Art. New World School of the Arts, a Miami-based conservatory school, organized this exhibition as part of a special project within its 2022 Visual Arts Curriculum. The project involved artists responding to works from the Museum's permanent collection including ancient fossils, African art, European paintings, and decorative arts to create their own works in a transformative process similar to the ancient concept of “alchemy,” or a chemical reaction transforming matter. In addition, we will have the Dancing Empanada and Wicked Good Mini Donuts food trucks featured for this event. Free for members, \$5.00 for non-members.

### Saturday, July 30

**10:00am-3:00pm**

#### Summer Florida History-Con

By popular demand we are now having two Florida History-Con events each year, featuring a winter and summer edition! Escape the heat and join us at the Museum of Arts & Sciences for a great lineup of Florida history presenters. Free for members or with paid museum admission.

#### Schedule:

##### 10:00am: Richard Sala: Streamline

##### Architecture and Hotel

Join Historic Preservation Architect, Richard Sala, to analyze and examine one of Florida's more popular styles of architecture and its features. A product of the end of Daytona's boom and bust era the Streamline Moderne is an international sub-style of Art Deco with aerodynamic lines and forms that were adapted to ships, trains, airplanes, buildings, and automobiles. Also discussed will be the popular local beach hotel by the same name, The Streamline Hotel! This beautiful example of the architectural style and namesake has lots of history to share as we race down memory lane with a special guest from the hotel.

##### 11:00am: Dr. James Clark: Hidden History

Join historian, Dr. James Clark as he takes you on a fast-paced journey through 500 years of Florida history. The emphasis is on things in our state's history that most people don't know. It's a richly illustrated tour based on Clark's book, *Hidden History of Florida*. Where else can you hear about President Chester A. Arthur, Al Capone, Burt Reynolds, and Ray Charles in a single talk? Jim Clark is a senior lecturer in the University of Central Florida's History Department. He holds a doctorate in Florida history from the University of Florida and is the author of nine books on Florida history and the editor of a three-volume anthology of Florida literature.

### 12:00pm: Joseph Vetter: The Story of Daytona's City Island and Historic Beach Street

“The game of ball is glorious,” wrote Walt Whitman in the 1870s, inspired by the patriotic qualities of the national pastime post-Civil War. In 1914, City Island provided the ideal location to “Take Me Out to the Ballgame.” From the “Stan the Man” Musial to Jackie Robinson, Jeter to Baez, the “island” has been a beacon of baseball history ever since. This entertaining program will also include a history of historic Beach Street featuring stories of a casino, the 1920s Real McCoy, the 1943 WAAC's and the Allman Brothers in 1965. Come celebrate the history of City Island as it revitalizes downtown once again!

### 1:00pm: Dr. Steve Noll: Manatees and Florida Culture

The Manatee has become an iconic beloved figure in Florida. This talk details the long and convoluted love affair Floridians have with this strange and interesting sea creature. It also examines the present state of manatees as they struggle for survival in times of pollution, algae blooms, and increasing boat traffic.

### 2:00pm: James Butler: Memory, Myth, Identify: The Contextualization of St. Augustine's Confederate Monument

In the aftermath of the 2017 “Unite the Right” rally in Charlottesville, cities throughout the South debated the meaning and relevance of Confederate monuments that occupied prominent public spaces. St. Augustine was no exception, and city leaders formed a committee to contextualize a structure dedicated to the memory of those “who gave their lives in the service of the Confederate States.” Due to his expertise in Southern Cultural and Civil Rights history, Dr. Butler was selected as one of the seven committee members. His presentation tells the story of the Contextualization Committee's formation, findings, and recommendations. Most importantly, his experience demonstrates how nostalgia, memory, and identity pervade public discourse concerning uncomfortable historical truths and raise important questions concerning the responsibilities professional academics have in such instances.

## AUGUST

### Tuesday, August 2

**12:00pm-1:30pm**

#### Lunch and Learn: Key West: Southernmost USA

Join Senior Curator of Education and History, Zach Zacharias with special guest, master landscape artist, Arnold Desmarais for a look at the new exhibit at the Cici and Hyatt Brown Museum of Art, *Key West: Southernmost USA*. Beautiful Key West is one of the state's oldest and most historic cities. Naturally, artists fell in love with the beautiful remote island city paintings of its sunsets, landscapes, and culture. Call the Museum at 386-255-0285 to RSVP and to place your lunch order. Space is limited and advanced RSVP and paid lunch are required. Member Admission: Lecture is free plus \$10.00 boxed lunch. Non-Member Admission: Lecture is \$5.00 plus \$10.00 boxed lunch.

### Thursday, August 11

**11:00am-12:00pm**

#### VIRTUAL MEMBER-ONLY Coffee with a Curator | First Images from the James Webb Space Telescope

Grab your coffee and join Curator of Astronomy, Seth Mayo virtually on ZOOM as he discusses the exciting first images from the James Webb Space Telescope (JWST) that were recently released. Seth will share his thoughts on the importance of these images and explain how they shape our understanding of the universe through this powerful observatory. He will also explore what's ahead for JWST and the new insights it will potentially provide to astronomers for years to come. Register online at MOAS.org or by calling the Museum at 386-255-0285. Free for members. Must be a MOAS member to attend.

### Saturday, August 13

**3:00pm-4:00pm**

#### Afternoon with Florida History:

##### Florida's Famous Shipwrecks

Join Senior Curator of Education and History, Zach Zacharias in the Root Family Auditorium to discover the many famous shipwrecks that made the pages of Florida history. Thousands of ships of all kinds have sunk off Florida's immense coastline over the centuries. From the 15 – wreck of the Atocha to the capsizing the Prince Vladamir in Biscayne Bay these shipwrecks had an impact on Florida's history. Free for members or with paid museum admission.

### Saturday, August 13

**7:00pm-10:00pm**

#### Second Saturday Laser Rock Concert

7:00pm Laser Retro  
8:00pm Laser Beatles  
9:00pm Laser Queen  
Seating is limited. Advanced purchase of tickets is recommended by calling the Museum at 386-255-0285. \$5.00 for one show, \$7.00 for two shows, \$9.00 for three shows.

### Tuesday, August 16

**5:30pm-7:00pm**

#### Succulents & Sangria:

##### Planter Boxes with LaniPots

Join us at the Cici and Hyatt Brown Museum of Art for a creative and interactive class with LaniPots as you create a customized planter box with succulents for your home! Admission includes all supplies and greenery to create a beautiful planter box to bring home with you and a complimentary Sangria! Seating is limited, advanced tickets are required. Visit MOAS.org or call 386-255-0285 to reserve your spot today. This event is for ages 21 and older. No refunds after August 9. \$45.00 for members, \$50.00 for non-members.

**Wednesday, August 17**

**6:00pm-7:00pm**  
**VIRTUAL LECTURE: Ask Our Curator of Astronomy**

Join MOAS Curator of Astronomy, Seth Mayo, virtually on ZOOM for this audience-guided show that can take you anywhere in the universe that you would like to go! Come with your questions, curiosities, and interests, as we navigate freely through powerful astronomical software. We cannot wait to explore the universe with you! Register online at MOAS.org or by calling the Museum at 386-255-0285. Free for members, \$7.00 for future members.

**Thursday, August 18**

**2:00pm-3:30pm**  
**Florida Vistas Book Club: *The Creek***

Join us for our next Florida history book club meeting at the Cici and Hyatt Brown Museum of Art where we will be discussing the book, *The Creek* by J.T. Glisson. For more information on this book, please visit MOAS.org. RSVP to attend online at MOAS.org or by calling the Museum at 386-255-0285. Free for members, \$5.00 for future members.

**Friday, August 19**

**12:00pm-1:30pm**  
**Lunch and Learn | *Tech Savvy: Home Technology from 1890-1990***

Humans have a love of nostalgia. It makes us feel good and according to research is good mentally for us. It also makes the future seem more promising and fills our life with meaning. Join Senior Curator of Education and History along with guest curators at the Museum of Arts & Sciences for lunch and a tour of this new and exciting history exhibit. From gramophones to the early iPod and everything in between there will be lots of memories and stories to tell. Call the Museum at 386-255-0285 to RSVP and to place your lunch order. Space is limited and advanced RSVP and paid lunch are required. Member Admission: Lecture is free plus \$10.00 boxed lunch. Non-Member Admission: Lecture is \$5.00 plus \$10.00 boxed lunch.

**Friday, August 19**

**7:00pm-10:00pm**  
**Movie Night in the Lohman Planetarium: *The Batman***

“Superhero Summer” continues with The Batman. A young Bruce Wayne, still learning what it takes to be a hero, must call upon his detective skills to uncover corruption at the highest levels of Gotham, while also tracking down The Riddler, a mysterious serial killer who is terrorizing the city. This film will be displayed in 16:9 aspect ratio on the Planetarium dome in stunning 4K Ultra high definition. Popcorn and snacks will be available at the concession stand. Please arrive at least 15 minutes before the event start time. Advanced purchase of tickets is recommended by calling 386-255-0285. \$10.00 for members, \$12.00 for non-members.

**Saturday, August 20**

**1:00pm-4:00pm**  
**Artist Landscape Demonstration with Arnold Desmarais (Day 1)**

"Imitation is not just the sincerest form of flattery - it's the sincerest form of learning." - George Bernard Shaw, playwright. Come join master landscape artist, Arnold Desmarais as he recreates "Mount Mansfield, New Hampshire," 1866 by Edward Darch Lewis, part of the permanent collection of MOAS and on display in the Dow Gallery of American Art. A unique three-day event will afford the viewer the opportunity to see the entire creative process from raw canvas to a finished work, as well as to ask questions as Arnold demonstrates the creative process of oil painting. Free to members or with paid museum admission.

**Wednesday, August 24**

**1:00pm-4:00pm**  
**Artist Landscape Demonstration with Arnold Desmarais (Day 2)**

"Imitation is not just the sincerest form of flattery - it's the sincerest form of learning." - George Bernard Shaw, playwright. Come join master landscape artist, Arnold Desmarais as he recreates "Mount Mansfield, New Hampshire," 1866 by Edward Darch Lewis, part of the permanent collection of MOAS and on display in the Dow Gallery of American Art. A unique three-day event will afford the viewer the opportunity to see the entire creative process from raw canvas to a finished work, as well as to ask questions as Arnold demonstrates the creative process of oil painting. Free to members or with paid museum admission.

**Saturday, August 27**

**1:00pm-4:00pm**  
**Artist Landscape Demonstration with Arnold Desmarais (Day 3)**

"Imitation is not just the sincerest form of flattery - it's the sincerest form of learning." - George Bernard Shaw, playwright. Come join master landscape artist, Arnold Desmarais as he recreates "Mount Mansfield, New Hampshire," 1866 by Edward Darch Lewis, part of the permanent collection of MOAS and on display in the Dow Gallery of American Art. A unique three-day event will afford the viewer the opportunity to see the entire creative process from raw canvas to a finished work, as well as to ask questions as Arnold demonstrates the creative process of oil painting. Free to members or with paid museum admission.

**Monday, August 29**

**5:00pm-7:00pm**  
**MOAS After Hours: In Partnership with The Locals Mix**

Join us at the Museum of Arts & Sciences for exclusive after-hours access to all galleries, happy hour drink specials with Fun Coast Bartending, and live music by Alexis O and DJ Jukebox Bully, in partnership with The Locals Mix. Join Peggy Banks, the Curator of this year's Beaux Arts of Central Florida exhibition which is titled *Epiphany! Visions of Art*, for a discussion of the themes and works displayed in this exhibition. This is the 60th Jubilee Anniversary for Beaux Arts of Central Florida and the fifth year MOAS has hosted the annual show of this group which is comprised of 50 professional artists, working in all mediums, who place a strong emphasis on experimental creative approaches brought to quality design conception and techniques. Free for members, \$5.00 for non-members.

**Tuesday, August 30**

**3:00pm-4:00pm**  
**Talk and Walk: Symbolism in the Museum**

Join MOAS lead gallery specialist, Marion Whelton and take a trip through the Museum's galleries to explore while locating and learning how symbolic images and indirect suggestions in the Museum's paintings, decorative objects, and furniture from different cultures were created to express emotions, state of mind, and mystical ideas. On the walk, you will encounter bats, dragons, shill faces, ghouls, flowers, birds, and abstract conceptions. Free for members or with paid museum admission.

SEPTEMBER

**Thursday, September 8**

**11:00am-12:00pm**  
**MEMBER-ONLY Coffee with a Curator: Minor Masterpieces: Porcelain Painted Scenes from the Collection**

Join Ruth Grim, Chief Curator/Gary R. Libby Curator of Art in the Bouchelle Changing Gallery for a talk on the exhibition *Minor Masterpieces: Porcelain Painted Scenes from the Collection* on view through December 4. The art of painting on porcelain dates back centuries and is believed to have originated in China. However, European porcelain from the 17th and the 19th centuries is famous for the beautifully rendered miniature painted scenes and decorations that were applied to the serving wares and other objects purchased by the wealthy. These porcelain painters were often considered fine artists in their own right. Examples from Austria, France, England, and America will be examined as will the choices of subject matter in these small paintings. Register online at MOAS.org or by calling the Museum at 386-255-0285. Free for members. Must be a MOAS member to attend.

**Saturday, September 10**

**7:00pm-10:00pm**  
**Second Saturday Laser Rock Concert**

7:00pm Laser Spirit  
 8:00pm Laser Zeppelin  
 9:00pm Pink Floyd – The Dark Side of the Moon  
 Seating is limited. Advanced purchase of tickets is recommended by calling the Museum at 386-255-0285. \$5.00 for one show, \$7.00 for two shows, \$9.00 for three shows.

**Tuesday, September 13**

**12:00pm-1:30pm**  
**Lunch and Learn: Curator's Choice**

Discover Florida's wondrous art history with Senior Curator of Education and History, Zach Zacharias, and master landscape artist, Arnold Desmarais at the Cici and Hyatt Brown Museum of Art. Many of the best landscape artists came to Florida on extended vacations painting landmarks, sunsets, exotic rivers, and its people. Call the Museum at 386-255-0285 to RSVP and to place your lunch order. Space is limited and advanced RSVP and paid lunch are required. Member Admission: Lecture is free plus \$10.00 boxed lunch. Non-Member Admission: Lecture is \$5.00 plus \$10.00 boxed lunch.

**Thursday, September 15**

**2:00pm-3:30pm**  
**Florida Vistas Book Club: *The Altamonte Hotel***

Join us for our next Florida history book club meeting at the Cici and Hyatt Brown Museum of Art where we will be discussing the book, *The Altamonte Hotel* by Marjorie Pollard. We will be joined by the author herself, Marjorie Pollard, for a special talk about her book during this month's meeting. For more information on this book, please visit MOAS.org. RSVP to attend online at MOAS.org or by calling the Museum at 386-255-0285. Free for members, \$5.00 for future members.

**Thursday, September 15**

**5:30pm-7:00pm**  
**Cake & Cocktails with Baker Street**

Join us at the Cici and Hyatt Brown Museum of Art for a unique, creative event for everyone, no skill required! Just be prepared to have fun! You will be instructed by professional cake decorator, Chef Geen Jordan of Baker Street Custom Cakes. Geen has been a certified cake artist for almost 30 years, going professional in 2016 with the launch of her business “Baker Street” custom cakes. Your Cake & Cocktails class will include your personal pre-baked cake, turntable, tools, cake box, and an assortment of decorations, and buttercream to allow your inner cake artist to shine. You will also enjoy music, a chance to win a prize, and one complimentary cocktail. Admission is limited and advanced RSVP is required by visiting MOAS.org or by calling 386-255-0285. This event is for 21 and older. No refunds after September 8. \$50.00 for members, \$55.00 for future members.

**Friday, September 16**

**3:00pm-4:00pm**  
**Afternoon with Florida History: Unusual Tales of the Everglades**

Join Senior Curator of Education and History, Zach Zacharias in the Root Family Auditorium to listen to the unusual stories from life in the Everglades during the last 150 years. This talk includes information on the building of the Tamiami Trail, invention of the airboat, the 122-year-old hermit of Panther Key, the Cities of Flamingo and Chokoloskee, and Al Capone's Florida hideout. Free for members or with paid museum admission.

**Saturday, September 17**

**2:00pm-3:00pm**  
**Behind the Scenes: 25 Years from an Expert on TV's Antiques Roadshow**

Kathleen Guzman has been an art appraiser and auctioneer for over 40 years, but her fondest memories have been as a founding and continuous expert on the PBS series, Antiques Roadshow. Join her in the Root Family Auditorium for an insider view and some of the most memorable backstage stories from America's favorite show. Free to members or with paid museum admission.

**Friday, September 23**

**6:00pm-10:00pm**  
**Passport Gala | The Jazz Age: Black and Tans**

Please welcome back our annual Passport Gala Fundraiser at the Museum of Arts & Sciences! Enjoy an evening filled with prohibition era cocktails, a progressive dinner around the Museum, and live auction items! Finish the evening with an exclusive performance by the Smithsonian Jazz Masterworks Orchestra presenting The Jazz Age: Black and Tans, inspired by the speakeasy era, when a new kind of venue emerged that opened the doors for Black musicians and audiences, as well as other people of color. These venues were dubbed “black-and-tan clubs” and created a uniquely integrated musical phenomenon. Call the Museum today at 386-255-0285 to purchase admission or visit MOAS.org. \$100 per person. Table sponsorships available.

**Saturday, September 24**

**3:00pm-5:00pm**  
**Smithsonian Jazz Masterworks Orchestra Matinee Concert | The Jazz Age: Black and Tans**

For more than half of the 20th century. Legal and social segregation shaped many aspects of life for Americans – including where they heard jazz. But in the speakeasy era, a new kind of venue emerged that opened the doors for Black musicians and audiences, as well as other people of color. Dubbed “black-and-tan clubs,” these nightspots began to attract white patrons as well, creating a uniquely integrated musical phenomenon. Join the Smithsonian Jazz Masterworks Orchestra in the Root Family Auditorium for an afternoon of jazz inspired by the black-and-tan clubs of the speakeasy era. Please reserve admission in advance by calling the Museum at 386-255-0285, in person, or by visiting MOAS.org. \$20.00 for members, \$35.00 for non-members.

**Saturday, September 24**

**7:00pm-9:00pm**  
**Smithsonian Jazz Masterworks Orchestra Evening Concert | The Jazz Age: Black and Tans**

For more than half of the 20th century. Legal and social segregation shaped many aspects of life for Americans – including where they heard jazz. But in the speakeasy era, a new kind of venue emerged that opened the doors for Black musicians and audiences, as well as other people of color. Dubbed “black-and-tan clubs,” these nightspots began to attract white patrons as well, creating a uniquely integrated musical phenomenon. Join the Smithsonian Jazz Masterworks Orchestra in the Root Family Auditorium for an evening of jazz inspired by the black-and-tan clubs of the speakeasy era. Please reserve admission in advance by calling the Museum at 386-255-0285, in person, or by visiting MOAS.org. \$20.00 for members, \$35.00 for non-members.

**Monday, September 26**

**5:00pm-7:00pm**  
**MOAS After Hours: In Partnership with The Locals Mix**

Join us at the Museum of Arts & Sciences for exclusive after-hours access to all galleries, happy hour drink specials with Fun Coast Bartending, and live music by Caitlin Chicca and DJ Jukebox Bully, in partnership with The Locals Mix. Guests can enjoy a talk on the new *Tech Savvy* exhibit with Senior Curator of Education and History, Zach Zacharias. The *Tech Savvy* exhibit focuses on the staggering change in home technology from roughly the last 100-year span. Free for members, \$5.00 for future members.

**Friday, September 30**

**3:00pm-4:00pm**  
**Talk and Walk: *Tech Savvy***

Nostalgia brings warm feelings and a sense of belonging. It also brings people together and jogs memories of the past. The *Tech Savvy* exhibit will give you feelings of longing for yesterday. Join Senior Curator of Education and History, Zach Zacharias for a tour of this unique and one-of-a-kind exhibit. Learn about the history of gramophones, transistor radios, early computers, and more. Free for members or with paid museum admission.

**Friday, September 30**

**7:00pm-9:30pm**  
**Movie Night in the Lohman Planetarium: ???**

The final “Superhero Summer” movie is so new that we are contractually not even allowed to advertise it yet! Check our website and social media in late July for details! All we can say for now is call your doctor, because this strange movie may drive you mad! This film will be displayed in 16:9 aspect ratio on the Planetarium dome in stunning 4K Ultra high definition. Popcorn and snacks will be available at the concession stand. Please arrive at least 15 minutes before the event start time. Advanced purchase of tickets is recommended by calling 386-255-0285. \$10.00 for members, \$12.00 for non-members.

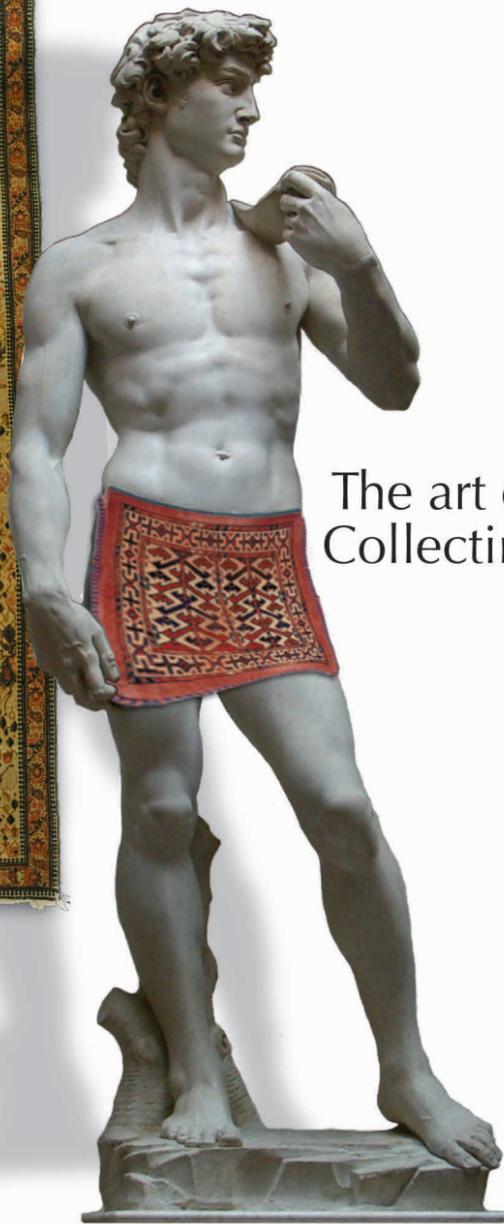
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Rare Zil-e-Sultan,  
Iran c. 1860



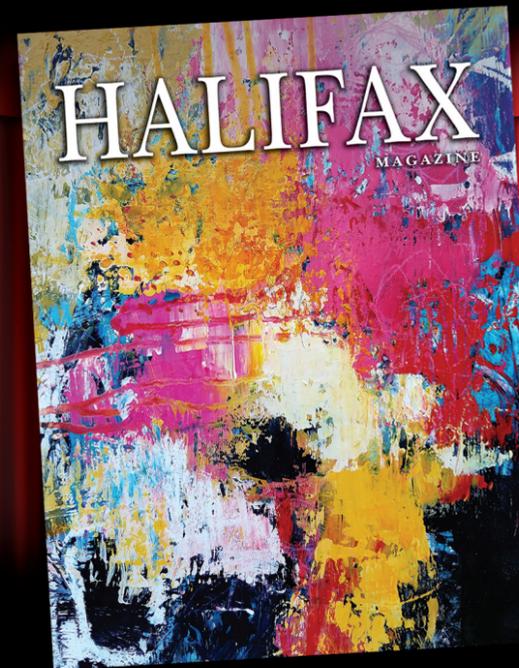
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## Prepping for Fall 2022

The MOAS Guild has already been very busy this year and is looking forward to summer. This past spring, we hosted two luncheons that were well attended. I want to thank all our members and their guests who attended the Annual Garden Party Luncheon back in April. As you can see from our pictures it was a beautiful and enjoyable day for everyone. Thank you to Karrie Houlton and her wonderful team who made this luncheon a huge success. Please check out our sponsors who helped us in so many ways. I hope that you will plan to join us next April.

Every year one of our biggest and most profitable fundraising events takes place in the fall. Our 12th Annual Children's Museum Golf Classic will be held on Friday, October 7 at Cypress Head Golf Club in Port Orange. Registration is \$125 per person or

\$500 per foursome. As in the past, the tournament will be a 4-player scramble. We have made a few new changes to help you enjoy the game more while benefiting our Children's Museum. You can register for this event online at [www.cypressheadgolf.com/MOAS](http://www.cypressheadgolf.com/MOAS) or contacting our new chairman, Susan Zahniser at 206-453-8056. Sponsorships are now available. If you can help us please call me at 386-871-8177. We look forward to seeing you on the course this fall.

Mark your calendars for our 60th Annual Halifax Art Festival on November 5th and 6th. This event is held on Beach Street in downtown Daytona Beach. We will have a "new face" this year as this area has undergone many beautiful changes. Our Halifax Art Festival has been awarded by the Daytona Beach Convention and Visitor Bureau as the 2022 Visitors' Choice winner for Best

Arts, Culture, Heritage event as voted by visitors to the Daytona Beach area. This is just one of the many awards our festival has achieved. If you would like to help and support our festival by being a Patron, sponsor, or volunteer please let me or Andrea Pair know how you would like to help. All help and support are greatly appreciated.

Our members will not be meeting in the summer months, but please join us on September 13th at 10 am at the Cici and Hyatt Brown Museum of Art. September is our "Membership Month" so please pay your \$40 dues in order to be included in our directory for 2023.

Please take time for your family and friends and enjoy our beautiful area. As always call me with any questions or concerns.

**Diane Rogers, President**  
386-871-8177

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Send to: Halifax Art Festival Patron Chair, Sherry Erbe at [jobe896@aol.com](mailto:jobe896@aol.com)  
or 231 Riverside Drive, #407 Holly Hill, FL 32117. Phone: 386-679-8534

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# OBSERVING THE INVISIBLE

## IMAGING OUR GALACTIC CENTER BLACK HOLE



For the first time in human history, we've been able to witness something dark and mysterious found thousands of light-years away. On May 12th, 2022, the world was shown an image of a fantastically weird and wondrous object — a supermassive black hole at the center of our own Milky Way galaxy. Astronomers have speculated for many decades that there was a black hole at the Galactic Center, but now we have photographic proof that it certainly does exist, and it further confirms fundamental physics theories that were proposed over 100 years ago.

When you see this black hole image for the first time it may look quite odd. To many, the running joke is that it resembles a lopsided orange donut floating in space, and that culinary assessment is understandable. But what this strange image tells us is how black holes work and that they do reside at the centers of galaxies, which turns this "orange donut" into a quite compelling object.

A black hole is formed from matter that is squished into a very compact space, where gravity is so high that nothing can escape it, even light. They are essentially invisible. But, the gas and dust swirling around them can emit light that we can detect.

This is not the first time we've seen an image of a black hole, or at least in the immediate vicinity around one. That was revealed in 2019, when an extraordinarily massive black hole at the center of M83, a giant elliptical galaxy millions of light-years away, was shown to humanity for the very first time. This black hole, now known as Powehi (a Hawaiian word meaning "embellished dark source of unending creation"), was chosen as the first to be imaged. This was due to its sheer size and significant influence on its environment, as it contained more than 6 billion solar masses of material in an area several times larger than our Solar System. Powehi is an absolute monster of a black hole and is very energetic, making it an easier target to observe, even at its great distance.

Sagittarius A\* can be found in the brightest area of the Milky Way, which can be found between the constellations of Scorpius and Sagittarius in southern areas of northern hemisphere skies. It has been speculated for quite some time that this is our Galactic Center, where a black hole should possibly exist, and now has finally been confirmed. The radio telescopes in the bottom of the image are part of the Atacama Large Millimeter/submillimeter Array (ALMA) in Chile that contributed to the Event Horizon Telescope collaboration. Credit: ESO/José Francisco Salgado (josefrancisco.org), EHT Collaboration

The first ever image of Sagittarius A\* that lies at the center of our Milky Way's Galactic Center released on May 12, 2022. The dark spot in the middle is the "shadow" of the black hole, which remains invisible, and is 4 million times the mass of the Sun. The orange disc around the black hole is the observable portion just beyond the event horizon (the point of no return), radiating energy in the radio spectrum of light about 27,000 light-years away. Credit: EHT Collaboration

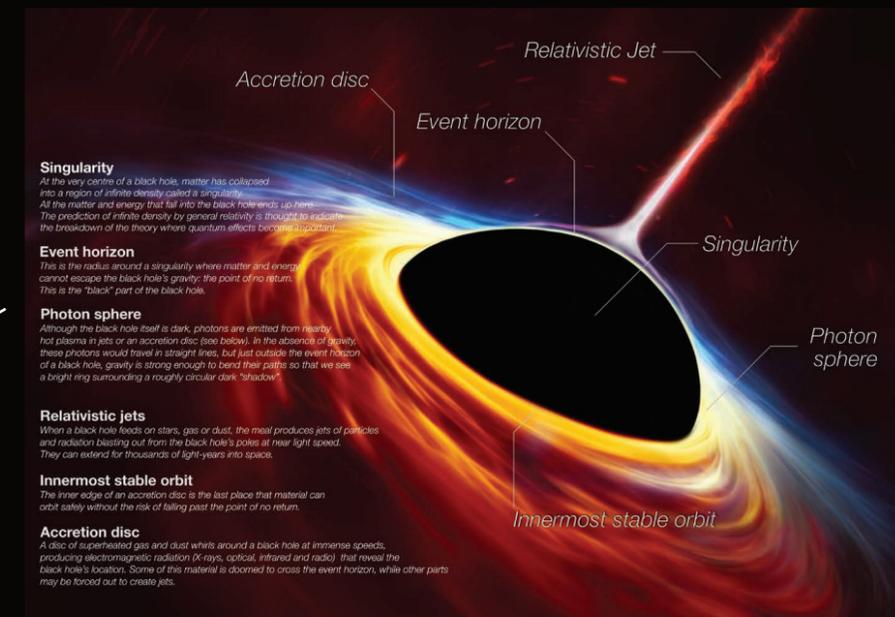
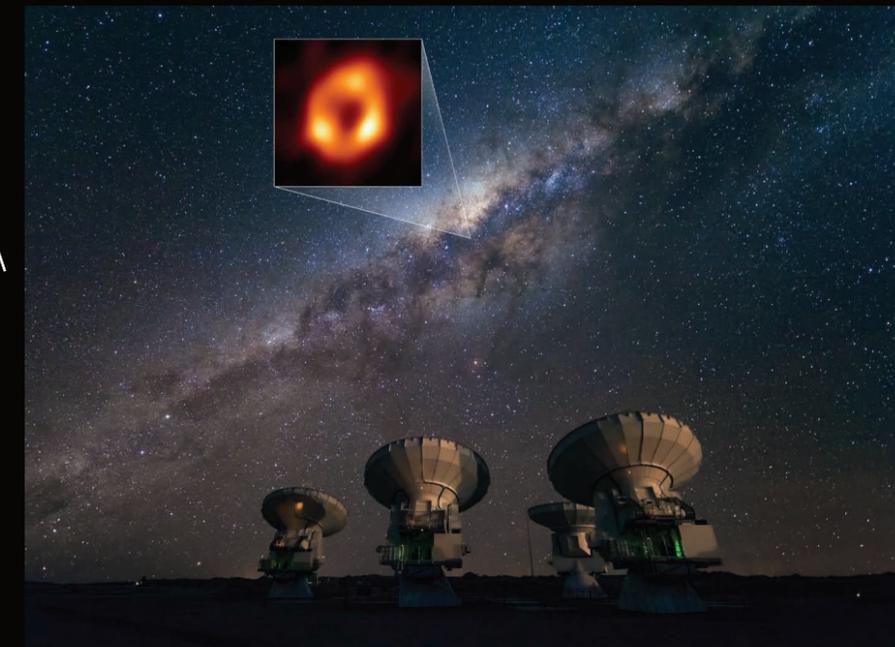
Anatomy of a black hole. Credit: ESO

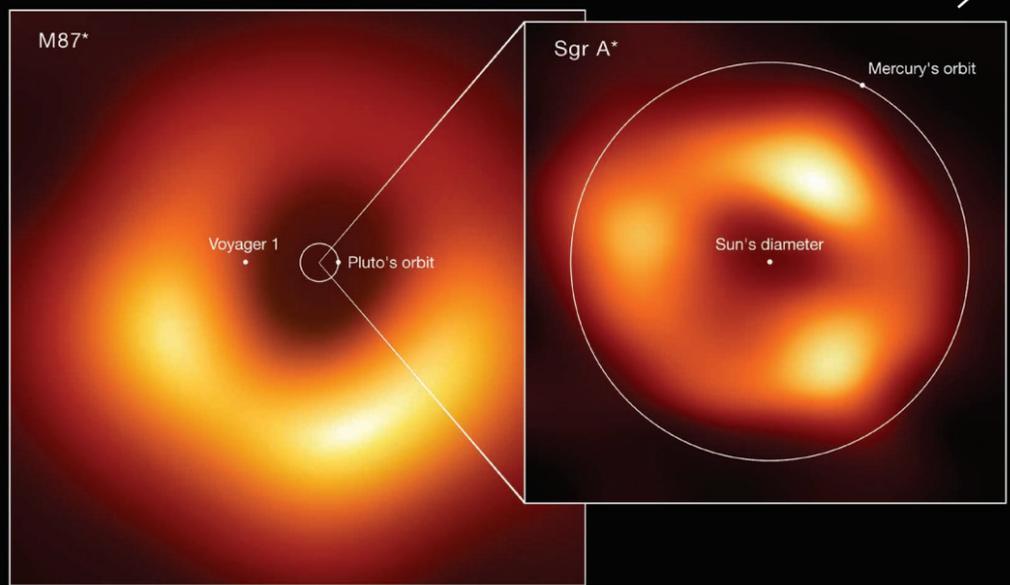
After M83's black hole was released, work had simultaneously been underway to capture the supposed black hole at the center of our galaxy. This observation posed a much greater challenge for astronomers due to its small size in comparison to Powehi, as well as its changing and dynamic environment around it.

The reason why we even know, or have speculated, there was something interesting at the Galactic Center is due to a notable radio source coming from an area that is relatively easy to find in the sky. If you can locate the great summer constellations of Scorpius and Sagittarius in the south, a

spot that lies between those two star groupings is where we've observed a point-like radio source, named Sagittarius A\*, or Sgr A\* (pronounced Sadge Ay-star). There are numerous radio sources found in the sky, which are forms of the electromagnetic spectrum of light with very long wavelengths, much like the radio waves you tune in your car or emitted by your phone. These radio waves can travel great distances across the universe. Radio sources in the sky

were typically lettered: "A" being the strongest, with the name of the constellation it appears in preceding the letter. In the case of the radio source in Sagittarius, due to its "excited" nature, an asterisk has been added to the "A," elevating it to a unique status. Sagittarius A\* lies in a very bright and luminous part of our Milky Way, and we've known for some time that this is the likely location of the center of our home spiral galaxy.





Comparison between the black hole (Powehi) at the center of M87 and Sagittarius A\* at our Galactic Center. Powehi is 6.5 billion times the mass of the Sun compacted into an area just over 3 times larger than Pluto's orbit around our Sun. Sagittarius A\* is about 4 million times the mass of the Sun, stuffed into an area the size of Mercury's orbit around the Sun. Due to the difference between the sizes and distances between these black holes, they both cover about the same amount of sky as seen from Earth. Both images were observed by the EHT, with Powehi released in 2019 and Sagittarius A\* in 2022. Credit: EHT collaboration (acknowledgment: Lia Medeiros, xkcd)

The challenging part of studying our Galactic Center is that it's obscured by thick clouds of gas and dust. Long wavelengths of light, from radio to the infrared, can penetrate much of this material between us and the center, providing us a sneak peek of what's behind the galactic veil. With advancements in technology, astronomers have been able to increasingly peel the layers back of our galactic disc to reveal what resides within.

As Sagittarius A\* was studied more closely, astronomers began observing stars and gas moving at breakneck speeds (one star was observed traveling at 8% the speed of light or 15,000 miles per second) around something that's invisible. Because of this observation, it was assumed that there must be a supermassive black hole there. By studying those orbiting stars and their movements, we can calculate the mass of this invisible object, which helped determine that Sagittarius A\* contains about 4 million solar masses worth of material, stuffed into an area

about the size of Mercury's orbit around the Sun.

What makes obtaining an image of a black hole even possible was the formation of an international collaboration of radio observatories and telescopes around the world.

Known as the Event Horizon Telescope (EHT), this collaboration brought together eight radio observatory sites that have collectively observed these black holes at the same time, effectively creating one large virtual telescope the size of our planet. This technique is known as Very Long Baseline Interferometry (VLBI) and is needed to resolve something that looks infinitesimally small across our sky, due to their vast distances away from Earth.

The Powehi black hole from 2019 came from a distance of 53 million light-years in the constellation of Virgo. In contrast, Sagittarius A\* at the center of the Milky Way is much closer at nearly 27,000 light-years distant (this is still a mind-boggling distance), but is about 1,500 times smaller than Powehi. Obtaining an image of this is

analogous to resolving something the size of a donut hole as far as the surface of the Moon from Earth. For this reason, the planet-sized virtual EHT was needed to capture something with such small angular dimensions in the sky.

This imaging attempt was further complicated as the Milky Way's central black hole has a rapidly changing environment around it. The material near Powehi takes days, even weeks to orbit around the black hole itself, so changes there are a little more subtle and less drastic from day to day. But material around Sagittarius A\* can swirl around it in minutes, and separate observations made in 2017 were averaged together to form the complete picture we finally see today.

And just to reiterate, this image does not show us the black hole directly (we never can), as the dark region in the center is known as the "shadow."

An object of this nature was indirectly predicted by Albert Einstein's theory of general

relativity published in 1916, which stated that gravity is the curvature of space-time from an object with mass. Physicists later postulated that if you took that to the extreme and curved space-time infinitely, the gravity would reach an extent that would pull in anything that came too close — even light — predicting the existence of black holes.

The light that can emit around a black hole lies just outside a region known as the event horizon. Once you pass the threshold of the event horizon, that is the point of no return for anything in the universe that fatefully enters.

That is how we can obtain an "image" of a black hole and is why the Event Horizon Telescope bears its name. That light near the event horizon gets gravitationally lensed and warped in very non-intuitive ways and then travels through space on a 27,000 year journey to Earth for us to observe.

Fortunately, Sagittarius A\* is directed to us face-on, so we can see a significant portion of the event horizon. The huge amounts of data (4,000 terabytes) obtained by the radio observatory sites of the EHT during this observation were stored on hard drives, sent to supercomputers at the Max-Planck Institute in Germany and MIT in the United States, and then processed for years to finally create the image we see here.

Unprecedented images like this help us understand the nature of black holes and how they influence their environments. This further confirms that black holes commonly exist at the centers of galaxies and may be the reason for the formation of our own Milky Way, or at least how it has been altered by it. We have also learned that Sagittarius A\* consumes very little material for its size and has been labeled as a "gentle giant," which may be a good thing for our galaxy as a whole.

Much more work has yet to be done as astronomers attempt to create even more detailed images of Sagittarius A\*, and to possibly observe the faint jets of matter shooting on either side that are thought to exist there. There is even work being done to create a video of both black holes to gain further understanding of how they change over time.

As impressive as this international collaboration has been, that eventually led to these black hole images, there is now development of the next generation Event Horizon Telescope (ngEHT), with plans to build radio observatories that are specifically meant to study black holes and to increase the number of sites around the world.

And who knows, maybe by unraveling the mysteries of black holes like Sagittarius A\*, we can find out more about the fundamental physics of the universe and how our galaxy came to be.



Located about 27,000 light-years away from Earth, Sagittarius A\* looks so small in our sky it is the equivalent of trying to photograph something the size of a donut on the surface of the Moon. The immensely large, virtually connected radio observatories of the EHT, was required to image an object with such a small angular diameter across the sky. Credit: EHT Collaboration, ESO/M. Kornmesser, NASA, Lu Amaral

Eight radio observatories around the world were virtually connected to create the Event Horizon Telescope collaboration needed to image the black hole at the Milky Way's Galactic Center. Known as Very Long Baseline Interferometry (VLBI), this technique effectively creates a planet-sized telescope, which was needed to image an object as small as Sagittarius A\* as seen from Earth. Credit: ESO/L. Calçada

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