Earth and Mineral Sciences
MUSEUM & ART GALLERY

ACADEMIC YEAR 2016–2017

RUSSELL WM. GRAHAM
DIRECTOR
AND
JULIANNE SNIDER
ASSISTANT DIRECTOR

JUNE 30, 2017

College of Earth and Mineral Sciences

Dean
Lee Kump (interim)

Earth and Mineral Sciences Museum & Art Gallery

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Museum Director

Julianne Snider,
Museum Assistant Director

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Howard "Chip" Steidle, Jr.

Mission Statement
To serve the college, University, and broader community as an informed educational and technical resource for science, art, and history of the Earth and mineral sciences through the preservation, utilization, and promotion of our diverse collections.

"I hadn't been to the EMS museum in 20 years or more, but had some spare time while driving near campus this week with my 10-year-old granddaughter—who enjoys geology.

We had a WONDERFUL time! Her favorite was the interactive opportunity to create a landscape & topographical map. Most fascinating was holding a hand above the "mountains" and watching the water flows create rivers & lakes. I think we could have just stayed there for a few hours!

We viewed every part of the exhibits & found each one interesting. We've even tried India ink scratching at home already....

Thank you for a great opportunity to increase her interest! We adults had an equally exciting visit!"

— June 6, 2016 email from Karla Hummel

Unless otherwise credited, photographs and images included in this report were created by staff of the College of Earth and Mineral Sciences and the Earth and Mineral Sciences Museum & Art Gallery.

Front Cover: Hiram Draper Williams (1917–2003). Untitled, 1950. Oil on masonite, 34" × 532". Three of six panels from mural created for the Mineral Science Building's (now Hosler Building) foyer. Motif conceived by Edward Steidle. Mural executed as part of Williams's M.Ed. thesis in art education. EMS Museum, Steidle Collection of American Industrial Art.

Contents

Letter from the Director

The primary activity for the EMS Museum & Art Gallery this past year has been finalizing the core documents required for accreditation by the American Alliance of Museums (AAM), the primary professional organization for museums in North America. The museum staff and Advisory Board, after participating AAM's Small Museums Accreditation Academy, completed drafting, reviewing, and approving the Mission Statement, Institutional Strategic Plan, and Collections Management Policy. The Code of Ethics and Emergency Response Plan will be completed early in the next academic year. All documents will be approved by the Dean prior to submission to the AAM Accreditation Commission.

Other major achievements included the conservation of twenty-three paintings from the Steidle Art Collection. Conservation of the collection is an on-going process supported by the Steidle Art Maintenance Endowment. The museum also saw major increases in school tours, loans of collections, and identification of objects for the general public.

One of the "behind-the-scenes" functions of the museum continues to be providing identifications of objects and answers to scientific questions for the public. In the last few years these activities have more than doubled (see list of achievements at the end of the report). Engagement and interaction with the public are an important function of the museum. We are one of the few scientific organizations in central Pennsylvania that provide such services. As stated in our mission, we "serve the college, University, and broader community as an informed educational and technical resource for science, art, and history of the Earth and mineral sciences". Identifying objects and providing answers to questions to those reaching out to the EMS Museum helps create a positive image of the college and museum as well as extend our reach and reputation beyond Penn State.

It is important that an institution recognizes and celebrates its successes. This past year was a great one for the EMS Museum and we look forward to even greater successes in the coming year. However, this past year's successes are built upon the accomplishments and challenges that have taken place over many years. Looking back over the thirteen years since the public face of the museum moved to the Deike Building, I am astounded at what we (museum staff, Advisory Board, and volunteers) have accomplished. We are a small museum with a limited budget and limited staff but, in spite of these facts, the list of accomplishments is truly impressive! We cannot rest on these laurels and we must move forward to reach the next level of accomplishments for the EMS Museum & Art Gallery. Nonetheless, it was sobering to compile the following list of highlights and accomplishments realized over the last thirteen years.

EMS Museum & Art Gallery Major Accomplishments since 2004

Administration

- Established an Advisory Board for the EMS Museum & Art Gallery;
- Created initial governing documents for EMS Museum & Art Gallery;
- Participated in the Heritage Preservation Conservation Assessment Program;
- Participated in the AAM Institutional Museum Assessment Program;
- Received IMLS funds to upgrade storage facilities and rehouse art collection;
- Received IMLS funds to unpack, photograph, and database the geological collections;
- Submitted a proposal for IMLS funds to upgrade storage facilities and rehouse rock, mineral and fossil collections;

- Established four new endowments for the museum;
- Published the 176-page *Wonders of Work and Labor: The Steidle Collection of American Industrial Art*;
- Selected as one of ten museums in the U.S. in first cohort of the AAM Small Museums Accreditation Academy;
- Initiated the process of gaining accreditation from the American Alliance of Museums; and
- Drafted core documents (Mission Statement, Collections Management Policy, Institutional Strategic Plan, Code of Ethics, and Emergency Response Plan) as part of the process of application for accreditation.

Exhibits

- Disassembled and removed all exhibits from Steidle Building (ca. one quarter mile of cabinets in hallways and more than 1800 square feet of exhibits in the old museum gallery;
- Relocated granite slabs from Deike Building to temporary storage facility;
- Assembled new exhibits in new galleries in Deike Building;
- Moved mastodon tusks from Steidle Building to the EMS Library in Deike Building;
- Removed three large (each measuring 7½' x 13'), antique plaster maps of Pennsylvania geology, mineral resources, and industrial economy from the walls of Steidle Building;
- Established changing exhibits program in the Art & Mineral Gallery in Deike Building;
- Established changing exhibits program in the EMS Library in Deike Building;
- Established program for student-developed exhibits (e.g, senior theses, CAUSE, Ocean Acidification, Phase Change Materials);
- Loaned forty-five pieces from the Steidle art collection to the Grohmann Museum at the Milwaukee School of Engineering in Milwaukee, Wisconsin for special exhibition;
- Loaned fifty-five pieces from the Steidle art collection to the James A. Michener Art Museum in Doylestown, Pennsylvania for special exhibition;
- Refurbished and installed a fluorescent mineral case in Deike Building exhibit gallery;
- Installed zinc and related minerals exhibit in Hosler Building stairwell;
- Conserved and installed the 1893, three dimensional, plaster map of Pennsylvania geology (one of the large maps recovered from the Steidle Building) in the EMS Museum science gallery in the Deike Building;
- Established use of security hardware for paintings in EMS Museum art gallery and an art rail system for paintings exhibited in the EMS Library and Penn State's Provost's office;
- Replaced incandescent lighting in exhibit galleries with LEDs (the first on campus!!);
- Replaced fluorescent exhibit case lighting with LEDs (ongoing);
- Purchased ten custom-built exhibit cases for art and mineral gallery with generous donations made by Drs. Hu and Mary Barnes; and
- Worked with EMS Machine Shop to create interactive exhibits:
  - Augmented Reality Sandbox
  - CO_2 Monitor
  - Fluorescent Minerals
  - Phase Change Materials
  - Seismology exhibit
  - Tornado Simulator
  - Data Sonification

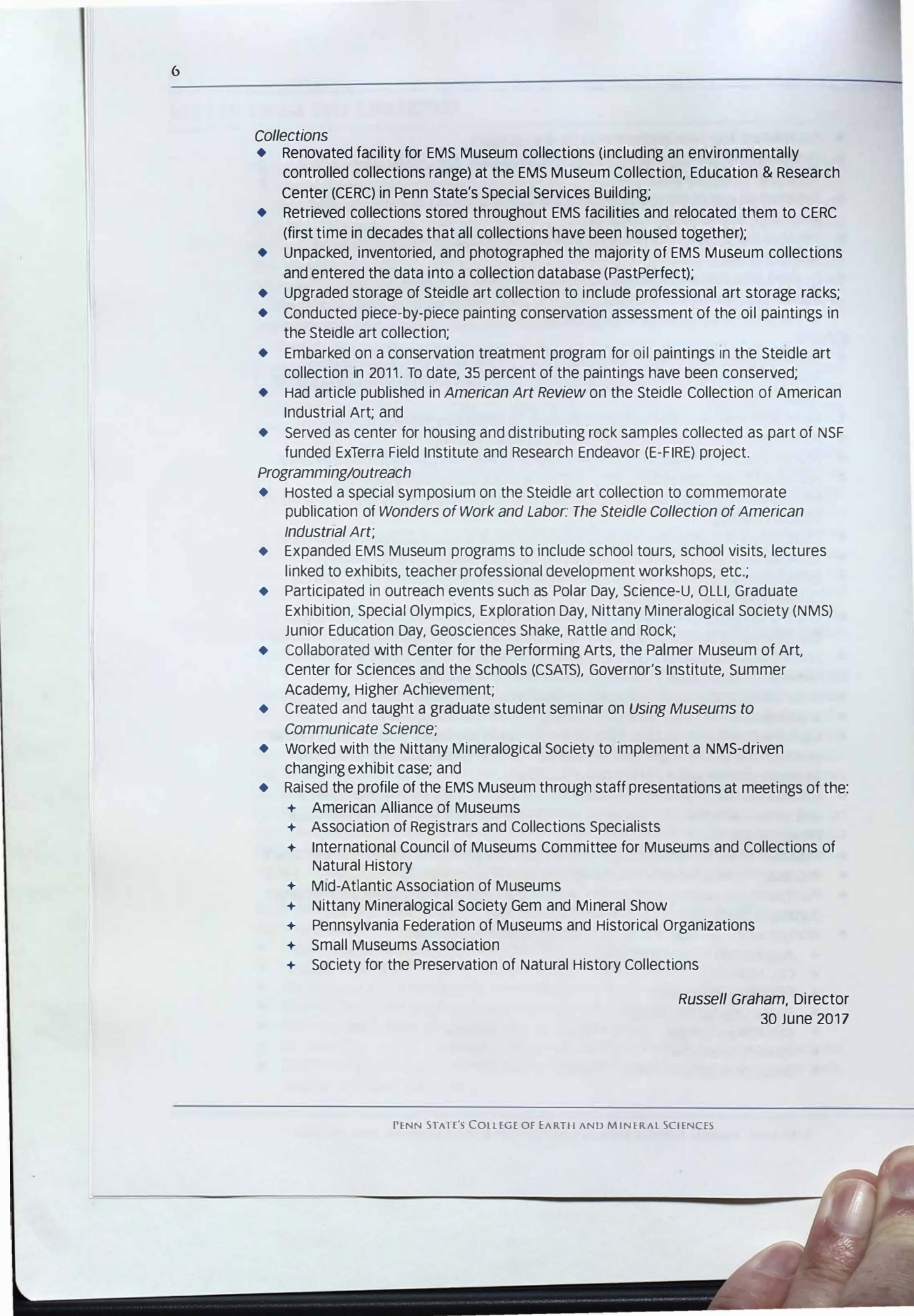
Collections

- Renovated facility for EMS Museum collections (including an environmentally controlled collections range) at the EMS Museum Collection, Education & Research Center (CERC) in Penn State's Special Services Building;
- Retrieved collections stored throughout EMS facilities and relocated them to CERC (first time in decades that all collections have been housed together);
- Unpacked, inventoried, and photographed the majority of EMS Museum collections and entered the data into a collection database (PastPerfect);
- Upgraded storage of Steidle art collection to include professional art storage racks;
- Conducted piece-by-piece painting conservation assessment of the oil paintings in the Steidle art collection;
- Embarked on a conservation treatment program for oil paintings in the Steidle art collection in 2011. To date, 35 percent of the paintings have been conserved;
- Had article published in *American Art Review* on the Steidle Collection of American Industrial Art; and
- Served as center for housing and distributing rock samples collected as part of NSF funded ExTerra Field Institute and Research Endeavor (E-FIRE) project.

Programming/outreach

- Hosted a special symposium on the Steidle art collection to commemorate publication of *Wonders of Work and Labor: The Steidle Collection of American Industrial Art*;
- Expanded EMS Museum programs to include school tours, school visits, lectures linked to exhibits, teacher professional development workshops, etc.;
- Participated in outreach events such as Polar Day, Science-U, OLLI, Graduate Exhibition, Special Olympics, Exploration Day, Nittany Mineralogical Society (NMS) Junior Education Day, Geosciences Shake, Rattle and Rock;
- Collaborated with Center for the Performing Arts, the Palmer Museum of Art, Center for Sciences and the Schools (CSATS), Governor's Institute, Summer Academy, Higher Achievement;
- Created and taught a graduate student seminar on *Using Museums to Communicate Science*;
- Worked with the Nittany Mineralogical Society to implement a NMS-driven changing exhibit case; and
- Raised the profile of the EMS Museum through staff presentations at meetings of the:
  - American Alliance of Museums
  - Association of Registrars and Collections Specialists
  - International Council of Museums Committee for Museums and Collections of Natural History
  - Mid-Atlantic Association of Museums
  - Nittany Mineralogical Society Gem and Mineral Show
  - Pennsylvania Federation of Museums and Historical Organizations
  - Small Museums Association
  - Society for the Preservation of Natural History Collections

Russell Graham, Director
30 June 2017



Earth and Mineral Sciences Museum & Art Gallery Exhibits

The Lure of the Mine

The Lure of the Mine exhibition grew out of a collaboration between the EMS Museum & Art Gallery and the Center for the Performing Arts at Penn State (CPA). The exhibit mirrored the theme of the oratorio, *Anthracite Fields*, composed by Julia Wolfe. The piece was performed on the Penn State University Park campus as a CPA event. Paintings, works on paper, sculpture, and historic mining artifacts from the collections were exhibited in the EMS Museum's Art and Mineral Gallery. Photos and documents from the a 1944 United Mine Workers survey of miner's homes (courtesy The Eberly Special Collections Library at Penn State) were also shown. A 1942 U.S. Office of War Information photography project chronicled coal mining's contribution to the war effort (courtesy Library of Congress).

Michael Joseph Gallagher (1898–1965), *Anthracite*, ca. 1940. Carborundum tint, 9" × 11", 1942 presentation, Works Progress Administration, EMS Museum Steidle Collection of American Industrial Art

Visitors to the exhibition were provided with a visual perspective of what was, and is, involved in the extraction and processing of Pennsylvania coal, particularly anthracite coal. The exhibition also provided the backdrop for gallery talks by composer Julia Wolfe and coal scientist Jonathan Mathews, professor of energy and mineral engineering, as well as gallery conversations between Wolfe and Mathews, and Mathews and Amara Solari, assistant professor of art history and anthropology. The exhibit title, *The Lure of the Mine*, was derived from lyrics written by Merle Travis for "Dark as a Dungeon," a song about the working conditions experienced by underground coal miners.

Anthracite is a very pure grade of coal that has been subjected to greater pressure and heat by burial than other types of coal (bituminous or lignite). The anthracite coal deposits in Pennsylvania are primarily located in the Scranton/Wilkes-Barre area. Bituminous coal is mined from twenty-one counties in Pennsylvania located in the southwest region of the commonwealth. Paintings and works on paper from the Steidle Collection of American Industrial included in *The Lure of the Mine* exhibition depict the mining and production of coal, the transportation and use of coal, and coal miners and their communities in both the anthracite and bituminous regions of Pennsylvania. Coal mining has been instrumental in the industrial development of Pennsylvania since the 19th century. Anthracite and bituminous coal continue to be mined in Pennsylvania today.

Edward Steidle: Educator, Innovator & Visionary

The *Edward Steidle: Educator, Innovator & Visionary* exhibit was created to celebrate the induction of Edward Steidle, dean of the College of Mineral Industries (1928–1953) (now EMS) into the National Mining Hall of Fame and to commemorate the opening of the newly renovated Steidle Building. The exhibit included a timeline of the life of Edward Steidle before, during, and after his tenure at Penn State. Steidle worked to promote innovations in mine safety throughout his long career as an educator, innovator, and visionary. An example of a milestone in Steidle's career includes a project Steidle developed while working as an assistant mining engineer for the Bureau of Mines. Tasked with creating an exhibit on mine safety and rescue for the 1915 Pan-Pacific Exposition in San Francisco, Steidle developed "The Mine", a replica of a coal mine in which he staged simulated mine explosions followed by dramatic mine rescues. These mock mine disasters and rescues were carried out every day during the Exposition. Steidle's creativity was rewarded with a medal and letters of commendation by the Bureau of Mines director, the director of the Palace of Mines and Metallurgy, and the president of Pan-Pacific Exposition.

National Mining Hall Of Fame And Museum

As dean, Steidle promoted an interdisciplinary approach to the study of minerals, industry, and technol emphasized the importance of liberal arts and culture in mineral education, and opened the first art mus on the Penn State campus. Steidle expressed his philosophy of education and conservation in numerous p cations including: *A Philosophy of Conservation* (1949), *Mineral Industries Education* (1950), and *Mineral Fore 2000 A.D.* (1952). Copies of these publications were included in the exhibit. After retiring from Penn Stat 1953, Steidle continued working on mine safety and health issues and was instrumental in the enactmer federal safety and health legislation for mines and miners.

The exhibit was installed in the EMS Museum Art and Mineral Gallery in the Deike Building.

Common Rocks of Pennsylvania: Specimens from the EMS Museum Collection

In 2015, the museum installed an 1893, three-dimensional, large (7 ½′ x 13′), sculpted plaster map depicting geology of our state into the EMS Museum science gallery. This historic map had been created for and exhib at the Chicago World's Fair (also known as the World's Columbian Exposition) before it came to Penn Stat the mid-1890s.

The museum has supplemented the display of the map with graphics chronicling the history of the r and with the installation of specimens of different rock types (shale, sandstone, limestone, schist, anthra coal and gneiss) from the museum's extensive geological collection. The specimens, examples of the basic r types found in Pennsylvania, are displayed on rails in front of the map. The design of the exhibit encoura visitors to examine and touch the rocks as they relate them to the color-coded geologic map.

Geological Terrane Model of Pennsylvania & Selected Rock and Mineral Samples, Nittany Mineralogical Society exhibit case

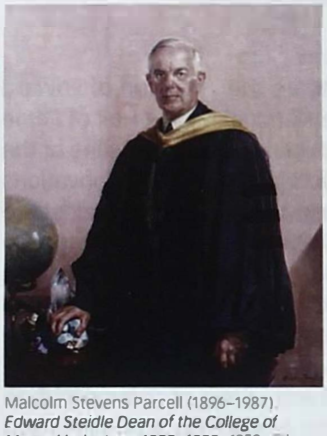
Complementing the historic geological map of Pennsylvania and *Common Rocks of Pennsylvania* is the Ni ny Mineralogical Society's exhibit of rocks and minerals collected from a wide variety of the formations fou across Pennsylvania. The exhibit includes a discussion of the geologic history, bedrocks, and the state's geolo terranes. Specimens displayed are linked to the terranes from which they originate.

The exhibit case is located in the EMS Museum's science gallery on the ground floor of the Deike Buildin

Exhibits Outside of the EMS Museum Galleries

Steidle Building

Edward Steidle, Dean of the College of Mineral Industries portrait



Malcolm Stevens Parcell (1896–1987). *Edward Steidle Dean of the College of Mineral Industries 1928–1953*, 1953. Oil on canvas, 50" × 41", EMS Museum Steidle Collection of American Industrial Art.

The EMS Museum installed the portrait of Edward Steidle, the dean of College of Mineral Industries (now EMS) from 1929–1953, in a custom bu wall mounted exhibit case on the second floor of the newly renovated Ste Building. The portrait, painted in 1953 by Malcolm Stevens Parcell (18 1987), had hung in the Steidle Building near the entrance of the original E Museum Art Gallery for more than 50 years. Over the decades on display, painting was exposed to a variety of environmental factors including du air-borne contaminants, ultraviolet radiation, vibration, abrasion, and s sonal fluctuations of temperature and humidity levels. Over time, the effe of this non-stop exposure to recognized agents of deterioration took its on the work of art. The painting was removed from the Steidle Building 2008 and underwent extensive conservation treatments in 2011 at the Pa ing Conservation Laboratory in Johnstown, Pennsylvania. Funding for conservation work was made available through the generosity of the Ste family and the Art Maintenance Endowment they initiated.

Since returning to the EMS Museum from conservation, the portrait had been on exhibit only once. It was included in the James A. Michener Art Museum in Doylestown, Pennsylvania exhibition *Iron and Coal, Petroleum and Steel: Industrial Art for the Steidle Collection* in 2015. Now, the portrait is once again on exhibit at Penn State in the newly renovated Steidle Building. EMS Museum staff specified a custom-designed exhibit case for the painting from Case[werks] of Baltimore, Maryland. The wall mounted exhibit case was purchased through a donation from the Steidle family. The case meets current AIC (American Institute for Conservation of Historic and Artistic Works) standards and best practices for conservation and long-term care of art and historic artifacts. Enclosing the portrait in the exhibit case minimizes damage to the painting from the inevitable fluctuations of temperature and relative humidity, airborne pollutants and dust, ultra-violet radiation, and vibrations that occur in buildings used by hundreds of people a day. The case also provides a secure barrier and deterrent to theft, vandalism, and physical damage of the painting while it is on long-term display in the Steidle Building. Dean Steidle's portrait may grace the walls of the Steidle Building for another fifty years.

The case, housing the irreplaceable, culturally significant painting, is located on the second floor of the Steidle Building at the top of the new atrium staircase.

Fletcher L. Byrom Earth and Mineral Sciences Library

The cooperative agreement between the EMS Museum and the EMS Library to display thematic exhibitions in the library of works from the Steidle Collection of American Industrial Art and other collections is in its third year. The centrally located space designated for the exhibitions accommodates up to seven paintings plus a didactic panel at one time. The EMS Museum had two very different exhibits in the EMS Library during the 2016–2017 academic year.

Bee-Hives & By-Products

The exhibition *Bee-Hives & By-Products,* installed in January 2017, brought together six paintings depicting coke production in Pennsylvania during the first half of the 20th century. Bee-hive coke ovens dominated Pennsylvania coke production in the 19th and early 20th centuries. By-product coke ovens, also known as retort ovens, eventually displaced bee-hive ovens as uses were found for the by-products of carbonizing bituminous coal into coke.

Coke is a clean-burning, high-quality fuel with a high carbon content and few impurities; however, volatile hydrocarbons are driven out of the coal during the coking process. These hydrocarbons can be captured and converted into industrial by-products such as coal tar, ammonia, and phenol. The paintings included in the exhibit depicted the dramatic flames and billowing smoke emanating from batteries of coke ovens that once operated across western Pennsylvania.

Ludwig Henning (1876–1949). *Pushing Coke from By-Product Oven at Night: Coke Ovens, Franklin Plant, Bethlehem Steel Company, Johnstown, Pa.*,1934. Oil on canvas, 32" × 36", 1935 acquisition, EMS Museum Steidle Collection of American Industrial Art

Inuit Visions of the Arctic: West Baffin Eskimo Cooperative Prints, Cape Dorset, Nunavit, Canada

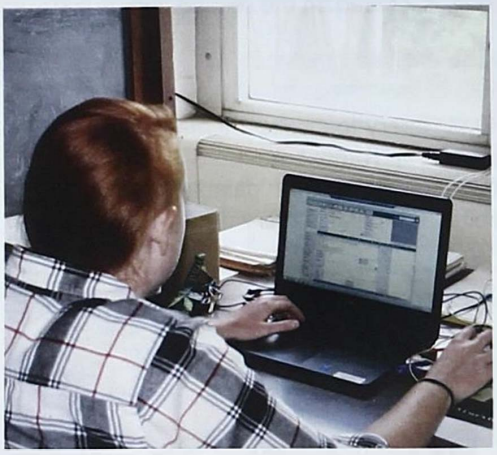
Prior to the *Bee-Hives & By-Products* exhibition, the EMS Museum in cooperation with the Polar Center of Penn State exhibited works on paper (prints) created by Inuit artists from the West Baffin Eskimo Cooperative in Canada. The prints were exhibited in the EMS Library and depicted many facets of Inuit culture and daily life—traveling, camping, and hunting. The printing techniques used to create the images included stonecut, lithography, and stencil. The framed prints were on loan to the EMS Museum from Judith Varney Burch of Charlottesville, Virginia. Burch had developed the exhibition in conjunction with the University of Virginia Library as an educational traveling exhibit for the Virginia school system.

EMS Museum & Art Gallery Collections Activity

Institute of Museum and Library Sciences (IMLS) Collections Stewardship Grants

The IMLS Museums for America Collections Stewardship grant funded project, EMS Museum for the Geolog Collection Management, began in 2013 was completed in September 2016. The grant had funded the positio a part-time curatorial assistant, consultation with a museum collections management professional, an upgr to the museum's PastPerfect collection's management software, and the purchase of supplies and mater for use with the museum's geological collections. IMLS is the primary source of federal support for libraries museums in the United States.

Although cartons holding the EMS Museum's geological collection were moved to the EMS Museum's Cer for Education, Research, and Collections (CERC) in 2008, the museum lacked the personnel required to rem the individually wrapped specimens from the cartons, to photograph each specimen from multiple angles, to enter specimen data and images into the collections m agement database. IMLS funding for the Geological Collect Management Project allowed the EMS Museum to unpack, da base, and photograph the geological collection that had be wrapped and packed into boxes in 2004 and 2005.



Curatorial Assistant Sarah Elder enters data into the museum's PastPerfect Collections Management Software

Over the course of the three-year project, the part-ti curatorial assistant position was filled three times. Each cu torial assistant provided invaluable help, insight, and talent the project. The first assistant, Laurie Eccles, completed unpacking, photographing, and database functions of the p ect. Subsequent assistants, Kim Foecke and Sara Elder, w able to sort through, record, and create spreadsheets of copious notes, articles, card files, ledgers, and other ancill texts that were found during the course of unpacking geologi specimens. Sara Elder also helped create micro-climate conta ers for some of the pyritic material contained in the collecti Pyrites are susceptible to degradation when exposed to moisture, including relative humidity levels above percent. Pyrites in museum collections can degrade and produce sulfuric acid. The sulfuric acid can damage a destroy specimen labels and storage containers as the specimen deteriorates.

Although a great deal of progress on the care and management of the geological collections was realiz over the span of the 2013 IMLS grant, work on the EMS Museum's geological collection is not complete. storage furniture (cabinetry) that holds the bulk of the collection is in adequate and inefficient. Much of collection is stored on open shelving due to lack of cabinet space. Late In 2016, Snider submitted a grant p posal to IMLS Museums for American: Collections Stewardship FY2017 to continue the work on the geolog collection. Funding for the EMS Museum Geological Collection Management Project: Phase 2 will cover, amo other things, the purchase of new storage furniture, renovation of one of the collections storage rooms at CE a condition assessment of the geological collection by an expert mineralogical conservator, and a part ti curatorial assistant to help facilitate the efficient housing of the collection. Phase 2 is a three-year project th if funded, will begin October 2017.

Loans

The collections of the Earth and Mineral Sciences Museum & Art Gallery are used by a variety of different au ences for education, research, and exhibition purposes. Specimens from the geological collection are frequen loaned to instructors (professors and graduate students) for use in Penn State classes. Loans for education not restricted to the College of Earth and Mineral Sciences. Other colleges and departments at the Penn St have borrowed collection objects as well. The EMS Museum has loaned specimens to grade schools statew for use in special programs. Significant loans of paintings from the Steidle Collection of American Industrial

have been made to the Grohmann Museum at the Milwaukee School of Engineering University in Wisconsin and the James A. Michener Art Museum in Doylestown, Pennsylvania. The EMS Museum also loans material to scientists for research. While many of the research loans are made to Penn State faculty and researchers, the museum has provided objects for national and international loans as well. The EMS Museum's outgoing loan program was especially active this year.

EMS Museum & Art Gallery Program & Events Participation

The Lure of the Mine and *Anthracite Fields*

The exhibit *The Lure of the Mine* was one of several different public programs held on the University Park campus in conjunction with the performance of *Anthracite Fields*, a Pulitzer Prize winning oratorio by composer Julia Wolfe, at Eisenhower Auditorium. The ensemble Bang on a Can All-Stars was joined by the Penn State Concert Choir for the Penn State Center for the Performing Arts event.

Jonathon Mathews argues his position during a EMS Museum gallery-based conversation commemorating the history of coal mining in Pennsylvania

The EMS Museum & Art Gallery hosted Julia Wolf, Jonathan Mathews, and Amara Solari for gallery-based conversations commemorating the history of coal mining in Pennsylvania. Wolfe provided her perspective on the development of her oratorio. Wolfe and Matthews discussed the art and artifacts of anthracite coal mining on exhibit in *The Lure of the Mine*. Mathews and Solari presented their varying interpretations of historic, bird's-eye-view, panoramic maps of coal mining towns. This type of map was first popularized in the 19th century. Well into the 20th century, hundreds of towns commissioned panoramic maps. The maps were distributed as promotional pieces that highlighted a municipality's assets and enticed new residents and business to move into the area.

The culture and communities of coal mining was the unifying factor of these presentations.

Graduate Student Participation in Programs

This year marks further involvement of graduate student volunteers with the museum. In previous years, both graduate and undergraduate students have assisted in developing exhibits. In the 2015–2016 academic year, the EMS Museum & Art Gallery offered a graduate course *Communicating Science in Museums* for EMS students. This course resulted in the exhibit *Ocean Acidification* that was conceived, designed, developed, and installed in the EMS Museum science gallery by the students at the beginning of the 2016–2017 academic year.

PhD student Claire Cleveland works with teachers attending a professional development workshop on topography and mapping in the EMS Museum

This year, several graduate students were directly involved with EMS Museum programs and activities. They provided information and support for K–12 teacher professional development workshops; assumed the role of museum docents, worked with 5th graders at the EMS Museum bone-picking station during the annual Department of Geosciences' Shake, Rattle, and Rock program; and represented the EMS Museum at the Nittany Mineralogical Society's junior education day event. Their involvement not only added value to these programs but also gave the graduate students valuable, firsthand experience with informal education and museum outreach.

Teachers attending a professional development workshop on topography and mapping construct and map landscapes in the EMS Museum.

Topographic Maps and Landscape Evolutio

The EMS Museum & Art Gallery often collal rates with the Center for Science and the Scho (CSATS). CSATS is a Penn State College of Edu tion Center that supports the University's ST (Science, Technology, Engineering, Mathemati colleges (including EMS) through the developm of mutually beneficial relationships between Pe State researchers and K–12 science educat from across the commonwealth. Teacher prof sional development workshops that take place the museum and utilize the museum's collecti have been very popular for the teachers and v rewarding for EMS Museum and CSATS personn

The content area of the EMS Museum-bas workshop this year focused on topography, to graphic mapping, and the evolution of landscap The workshop was designed to provide scier teachers with the knowledge they need to supp their teaching of Earth and Space Sciences curric that meet the Pennsylvania State Standards Alig System for science education.

Accurately representing a three-dimensional s face (landscape) on a two-dimensional piece of pa is possible with the use of contour lines—lines t connect points of equal elevation on a topograp map. Topographic maps are used for a variety of p poses including hiking, hunting, exploring, landsca development, mapping other parameters such geology, vegetation, and land use. Unfortunately, i often difficult for people to understand topo map they have never seen or used them. As part of topography workshop, teachers built a mountain of stacked flowerpots (Mount Flowerpot). They th used rulers, levels, and string to determine the e vation of different points on Mount Flowerpot. After plotting the points on paper, the teachers made a cont map and discussed the process. Additionally, four different stations were set up in and around the EMS Muse (augmented reality sandbox, 1893 3D geologic map, plane table and alidade, and topographic map interpre tion) where the teachers engaged in activities related to topographic mapping. Graduate students ran ea station and helped the teachers understand the basic principles being presented. Participating teachers' fe back and evaluation of the workshop and its content were overwhelmingly positive. The workshop was a gr success and received outstanding reviews and comments from the teachers including:

> *"This topic directly connects with my Earth Science curriculum as well as my U.S. history class. The stations were wonderful to plan for my classroom. I also have a variety of ideas to expand with the relief maps. He [Russ Graham] was direct and down to earth with his explanations. I learned a lot of info that I can transfer to my students and I will use the Mount Flowerpot activity. I will build the virtual sandbox. Definitely gave me some new ideas and techniques in teaching topo maps."*

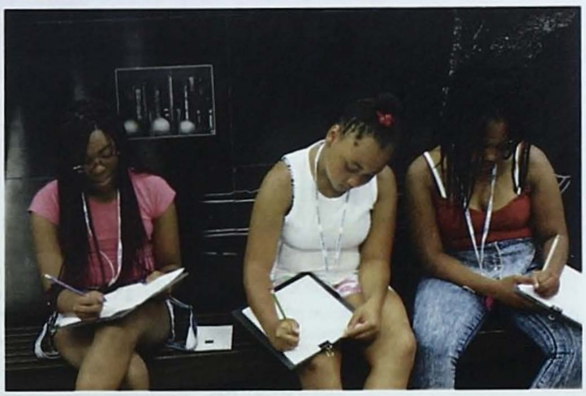
Football Saturdays

For the first time in many decades, the museum was open for several hours on Saturdays that coincided with home football games. Geoscience student Priayanka Bose worked as the EMS Museum weekend guide interacting with visitors and answering questions throughout the football season. Sandwich board signs placed near the entrances of Deike Building advertised the museum's Saturday hours. Although the number of Saturday visitors was not large, those that did visit were favorably impressed with the exhibits and enjoyed interacting with Bose.

Higher Achievement Program

The EMS Museum & Art Gallery participated in a variety of activities that have now become regular annual events (Shake, Rattle, and Rock, the Geosciences outreach program for all State College fifth grade classes; Nittany Mineralogical Society Junior Education Day; Center for Science and the Schools i-STEAM Workshops). This year, we added Higher Achievement 2016 Summer Academy to our annual commitments.

Higher Achievement is a Washington, D. C. based national program designed to close the opportunity gap for middle school students from underserved communities. The organization is recognized as an outcomes-based model for high-level academic achievement through middle-school student participation in rigorous, out-of-school learning environments. Student scholars participating in Higher Achievement have had opportunities to visit the Penn State University Park campus and participate in summer learning opportunities since 2007. The EMS Museum's application to provide an exhibition gallery-based, hands-on program exploring the intersection of science and art was accepted for summer 2016 sessions. Participating scholars were introduced to critical- and creative-thinking routines that were implemented through exploration of objects (fine art, scientific specimens, and historic industrial artifacts) from the EMS Museum's collections on exhibit in the Deike Building galleries.



Higher Achievement scholars make connections between art and science during a workshop developed by the EMS Museum

Museum Tours for School Groups

School groups visit the museum every year, especially in the spring (April–May). As part of their visit, the classes are given guided tours by staff. This year we had more than twenty school groups that ranged from Day Care to universities and colleges. Grade schools in the State College area are generally the most common audience but this year groups from Hazelton, Johnsonburg, and Penn's Valley came to the museum. These tours are important for several reasons. They augment what students are learning about science in their schools and expose students to new aspects of science. Museum visits allow students to see and handle real objects, work with interactive exhibits, and ask question of and

engage with real Penn State scientists. Hosting school groups also provided EMS Museum and the Colle of Earth and Mineral Sciences with broader geographic recognition—the research and educational progra ongoing in the college and museum are made visible to the wider community. Research has shown t people who visit museums as children are more likely to visit them as adults and take their children a grandchildren to them.

Reflection—March 20th

A small group from Room to Grow took a walk to the Earth and Mineral Sciences Museum this morning. We were greeted by our tour guide, Russ. He showed us a map of Pennsylvania that indicated the location of different types of rocks, and we touched each one. Russ also talked to us about coal. We learned that it was created by the decay of prehistoric plants, similar to the fossilized tree stumps we saw at the museum. In addition, Russ showed a fossilized diplodocus leg, a dinosaur egg, and some tracks. We also learned about tornados and earthquakes. We were able to use a seismometer to make "earthquakes" by jumping. We really appreciated Russ taking time out of his busy day to show us around and for answering all of the questions we asked (there might have been thousands).

Learning Standards:

- 3 3.PK.A 1 Sort different types of earth materials.
- 3 3.PK.A 7 Participate in simple investigations of earth structures, processes and cycles to answer a question or to test a prediction.
- 16.2 PK.C Engage in reciprocal communications with adults and peers.
- 16 3 PK.B Recognize there are socially acceptable ways to behave in different places.

The EMS Museum galleries offer informal learning opportunities for learners of all ages. School groups make connections between state standards, curriculum, and what they learn during their museum visit

Publications and Awards

Museum staff continued to be active publishing and presenting information based upon their research a professional work. Graham was lead author of "Timing and causes of mid-Holocene mammoth extinction on Paul Island, Alaska" published in the *Proceedings of the National Academy of Sciences* (PNAS). The article do umented research on the extinction of an island population of mammoths that survived more than 6,000 yea after mammoths had gone extinct on the Eurasian or North American main lands. Graham and his co-autho were awarded the distinguished Cozzarelli Prize by the National Academy of Sciences.

John Simmons, EMS Museum adjunct curator of collections, received the Dudley-Wilkinson Award of D tinction from the American Alliance of Museums Registrars Committee. Award recipients are recognized museum professionals who have demonstrated commitment to the highest standards of excellence in museu registration and the museum field. Simmons latest book, *Museums: A History,* published by Rowman and Litt field, was released in 2016.

By participating in professional development activities, authoring scholarly works, and presenting pape and posters at professional meetings EMS Museum staff help elevate the reputation of the Earth and Mine Sciences Museum & Art Gallery nationally and internationally.

ACHIEVEMENTS

New Exhibits

Edward Steidle: Educator, Innovator & Visionary—EMS Museum Art & Mineral Gallery

The Lure of the Mine. Paintings and objects from the EMS Museum collections and Special Collections Library—EMS Museum Art & Mineral Gallery

Common Rocks of Pennsylvania. Specimens from the EMS Museum collections—EMS Museum Science Gallery

Ocean Acidification and the Effect on Marine Life—EMS Museum Science Gallery

Portrait of Dean Edward Steidle exhibit case—Steidle Building

Bee-Hives & By-Products: Paintings from the Steidle Collection of American Industrial Art—EMS Library

Geological Terrane Model of Pennsylvania & Selected Rock and Mineral Samples. Nittany Mineralogical Society exhibit—EMS Museum Science Gallery

Collections Activity

Loans made:

Russell Graham, mammoth tooth, Apples Workshop
Elizabeth Denis, fluorescent lights, PhD research
Russell Graham, fish Specimens, Geosci 422 class
Paul Riggs (Wilkes University), photo of painting, article
Russell Graham, vertebrate fossils, paleoecology class
Materials Science, quartz specimens, exhibits
Material Science, Steidle portrait, opening of Steidle Building
Material Science, Steidle art images, exhibits
Russell Graham, vertebrate specimens, Geosci 422 class
Jack Hietpas (Chemistry), mineral specimens, chemistry class
Duff Gold (Geosciences Penn State), plane table and alidade, field work
Kristin Joiviel (Juniata Valley), screen wash & picking supplies, presentation
Russell Graham, mammal materials, Geosci 422 class
LeeAnna Hooper (Education), four trilobites, class presentation for education
Judith Scalafani, vertebrates, paleontology class
Alexandra Radinska (Engineering), pyrrhotite, destructive analysis
Russell Graham, pleistocene fossils, OLLI presentation
Elizabeth Andrews, fossils and bones, NMS Jr. Ed Day
Claire Cleveland, peccary skeleton, research
Russell Graham, rocks & minerals, Special Olympics

Conservation:*

Saverio de Magno, *Millard Quarry, Anneville, Pennsylvania*, 1935, oil on canvas, 30 x 36
Aaron Henry Gorson, *Allegheny River Scene: Gilchrist Coal Hoist*, n.d., oil on canvas, 38 x 48
Aaron Henry Gorson, *Pushing Coke from By-product Oven at Night*, n.d., oil on canvas, 36 x 30
Aaron Henry Gorson, *Steel Plant on the Monongahela River*, n.d., oil on canvas, 22 x 28
Roy Hilton, *Coal*, 1956, oil on canvas, 29 x 34
Ruby Glasser Shilladay, *The River Boat*, 1937, oil on canvas, 32 x 33

Scheduled Museum Tours

May 9	Penn's Valley 3rd graders	25
Jun 22	Daybridge Child Development Center	27
Jul 03	Higher Achievement 9th-12th graders	18
Sep 17	Saturday Football Opening	6
Oct 01	Saturday Football Opening	8
Oct 08	Saturday Football Opening	12
Nov 03	Hazelton 4th, 5th, & 6th graders	48
Nov 05	Saturday Football Opening	12
Dec 05	Johnsonburg Community College	32
Dec 14	Life Links students	16
Jan 12	Bellefonte Elementary	26
Jan 24	Docents from All Sports Museum	9
Feb 16	State College Girl Scouts	4
Feb 20	ECE 479 class tour and interview	4
Feb 27	Geoscience class tour	17
Mar 02	CSATS iSTEAM Workshop	18
Mar 20	Penn State Daycare Group I	15
Mar 23	Penn State Daycare Group II	17
Mar 27	Bellefonte Elementary 2nd grade	21
Mar 30	Grace Lutheran Daycare	23
Apr 12	Hazleton School District	62
Apr 19	Port Matilda 4th grade classes	58
May 03	Delta School State College	12

* Care and conservation of museum collections includes everything done to avoid and ameliorate the deterioration of museum collection objects and their associated information. These measures support the museum's efforts to practice good collections stewardship while exhibiting and interpreting its collections to preserve them for future generations. Preventive conservation measures are carried out by the museum staff, but restorative conservation of works in the Steidle Collection of American Industrial Art is done by professional art conservators and is supported by the Steidle Family Art Collection Maintenance Endowment.

May 04 Delta School State College 15
May 12 Bellefonte Elementary (3rd grade) 62
May 16 Delta School State College 41
May 17 St. Michael School 33
Jun 05 State College Jr. High class 27
Jun 26 OLLI Class 22
Jun 27 Owen family 8

Programs & Events Participation

Jan 04 Shake, Rattle, and Rock: bone picking 75
Jan 05 Shake, Rattle, and Rock: bone picking 75
Jan 06 Shake, Rattle, and Rock: bone picking 75
Mar 30 Center for Performing Arts & EMS Museum open house and gallery talk: Anthracite Fields and Lure of the Mines 52
Apr 01 Nittany Mineralogical Society Jr Ed Day 200
Jun 01 Special Olympics Pennsylvania Summer Games: Olympic Village 72
Jun 02 Special Olympics Pennsylvania Summer Games: Olympic Village 120
Jun 03 Special Olympics Pennsylvania Summer Games: Olympic Village 65

Identifications, Questions & Consultations

Jun 03 John Decibel (State College) . . . . . rock ID
Jun 12 Rita Mae (Philipsburg) . . . . . .slag
Jun 30 Jeffrey Seymore (email) . . . . . concretion
Jun 30 Pete Bannister (email) . . . . . .dinosaur extinction
Jul 07 Jim Westgate (Lamar Texas) . . . . . .C-14 dating
Jul 11 Steven Park (Pottstown High School) . . . . . .bone ID
Jul 14 Russell Johns (EMS) . . . . . .exhibits on energy
Jul 18 Alexandra Korabelnikova (Russia) . . . . Augmented Reality Sandbox
Jul 25 Sharon Miller (Penn State) . . . location of shrunken heads
Jul 29 Gemma Tarlach (*Discover Magazine*) . . . . . time of Pleistocene extinction
Aug 11 Janice Swire (email) . . . stream-rounded pebble ID
Aug 11 Michael Acquaviva (State College) . . . sedimentary structures ID
Aug 01 Don Peglow (State College) . . . . . ID of specimen thought to be a tooth but was sedimentary structure
Aug 22 Laurie Eccles (State College) . . . . . .fossil ID
Aug 25 Christopher Brown (Philadelphia Free Library) . . . . porphyry ID
Sep 20 Kairen Miller . . . . . Information about paleontology as a career
Oct 03 Peter Meier (email) question about painter George Ennis
Oct 12 Caitlyn Ramirez (Penn State student) . . . . . interview on role of museum in education
Nov 4 Benuel Napp (Millheim) . . . . . slag from iron wo
Nov 30 R. Lee Lyman (University of Missouri) . . . . .unwo rodent incisor from Missouri cave
Dec 5 Jim States (Erie, PA) . . . . . fossil identificati
Dec 6 Wendy Kirschner (YAP Films, Toronto) Pleistoce extinction for documentary
Dec 7 Jim States (Erie, PA) Identification of granite cob
Dec 13 Susan Fugate (Doylestown, Pennsylvania) .fossil
Dec 22 Andrea McClure (email) . . . information on geoc
Jan 30 Esther Chong (Penn State Chemistry) . . request research gibbsite
Feb 10 Education students (Penn State) discussion of E Museum & educational programming
Feb 15 Josh Taylor (email) . . . . . conglomerate & s
Feb 15 Yiming (Education student) . . . .educational use museum (class project)
Feb 20 Melissa Hench (email) . . . . . .piece of obsidi
Feb 27 Adrey Wrey (Yap Films) information on Pleistoce megafauna for film on eastern shore
Mar 13 Eric Wienckowski (LRC, University of Minnisota) depth of Lake Hill Lake
Mar 13 Bob Pickering (Gilcrest Museum) . . . . . Identification of mammoth teeth
Mar 20 Lorrie Harper (Philadelphia) . . . mud cracks in rc
Apr 18 Dana Hatalsky (email) . . . . . fulguri
Apr 19 Mary Sorenson (Centre Furnace Mansion) . . . . . Pennsylvania Museums Conference
Apr 25 Anjellica Grace (Georgia) . . . . . .gneiss with f
May 5 Joy Ansley (email) . . . . . impression of bivalve sh
May 5 Chris Mazzsauto (email) . . . . .large piece of sla
May 9 Keith Bruce (email) . . . . . .St. Paul mammot
Jun 14 Bob Pickering (Gilcrease Museum) . . . . . ancient DNA questions
Jun 19 Charlie Barker (email) . . . . . rock identificati
Jun 22 Unknown patron . . . . . parking for disabl
Jun 25 Fred Beaman. meteorite, trilobite & other miner
Jun 25 Jess James (Conyngham, Pennsylvania) . apprai of gold (refused)

Publications

Peer-reviewed

Arroyo-Cabrales, J., E. Johnson, and R. W. Graham. 2016. North American Ursid (Mammalia: Ursidae) defaunatio from Pleistocene to Recent. *Cranium* June 2016:51–56.

Graham, R. W. et al. 2016. Timing and causes of mid-Holocene mammoth extinction on St. Paul Island, Alas *Proceedings of the National Academy of Sciences*.

Latham, K.F. and J.E. Simmons. IN PRESS. Using systems thinking in teaching museum studies. Chapter 19 in Y. Yung and A.R. Love. *Systems Thinking in Museums. Theory and Practice*. Rowman and Littlefield, Lanham, 276 pp. [Publication Oct 2017].

Simmons, J.E. IN PRESS. Fluid preserved collections, in L. Elkin and C. Norris (editors). *Preventive Conservation: Collections Storage*. SSAR, AIC, the Smithsonian Institution, and George Washington University Museum Studies Program [anticipated publication fall 2017].

Simmons, J.E. IN PRESS. *Things Great and Small: Collections Management Policies. Second edition*. Rowman & Littlefield, Lanham [anticipated publication in fall 2017]

Simmons, J.E. 2016. *Museums: A History*. Rowman & Littlefield, Lanham, 308 pp.

Simmons, J.E. 2015. La vida secreta de los museos universitarios. *Códice* (Boletín Científico y Cultural del Museo Universitario, Universidad de Antioquía) 16(28):40–45.

Smith, G. and R. W. Graham. 2017. The effects of dental wear on impairing mammoth taxonomy: A reappraisal of the Newton mammoth, Bradford County, northeastern Pennsylvania. Quaternary International 30:1–12.

Other Publications

Graham, R. W. and J. Snider. 2016. *Earth and Mineral Sciences Museum & Art Gallery Report: Academic Years 2010-2016*. EMS Museum & Art Gallery.

Oliver, J. S., T. W. Stafford II, and R. W. Graham. 2017. Protecting Our Fossil Fuel: Bone 14C Dates, Date-Assessment Protocols, and the Need for a Worldwide 14C Database. *Society of American Archaeology Program and Abstracts*, Vancouver, British Colombia, Canada.

Pilaar, S. B., R. W. Graham, E. Grimm, J. Blois, and J. Williams. 2017. A new stable isotope data repository within the Neotoma Paleoecological Database. *Society of American Archaeology Program and Abstracts*, Vancouver, CA.

Simmons, J. E. *Musings on Museum Studies #3*: A Surfeit of Graduates? 01 February 2017, Kent State University MuseLab, https://www.themuselab.org/single-post/2017/02/01/A-Surfeit-of-Graduates

Simmons, J. E. *Musings on Museum Studies #4*: Awakening to Find Your Dream Job. 01 Mar 2017, Kent State University MuseLab, https://www.themuselab.org/single-post/2017/03/01/Awakening-to-Find-Your-Dream-Job

Presentations

Graham, R. W. *Biotic response to global warming: how fossils can reveal the future*. APPLES Workshop for Teachers, Penn State Jul 25–29, 2016.

Graham, R. W. *Ice Age mammals and climate change: a window to the future*. OLLI Penn State Lecture, Feb 27, 2016

Simmons, J. E. American Alliance of Museums webinar: *Getting Started on Collections Storage*

Simmons, J. E. Connecting to Connections webinar: *Introduction to Legal Issues in Museums*

Simmons, J. E. *Creating and Renovating Storage Facilities*. American Alliance of Museums, 25–29 May 2016.

Simmons, J. E. & Bennett, D. *Registration 101*, Small Museums Association, 19–21 February 2017

Simmons, J. E. & Neumann, D. *Standards and Best Practices for Fluid Preservation*, Society for the Preservation of Natural History Collections, 18–24 Jun 2017

Snider, J. *Working toward best practices of collection stewardship to ensure the sustainability of a university collection*, Society for the Preservation of Natural History Collections, 18–24 Jun 2017

Teaching & Instruction

Graham, R. W. GEOSCI 422 Vertebrate Paleontology, Fall 2016

Graham, R. W. Paleoecology Section, Fall 2016

Graham, R. W. & Snider, J. CSATS i-STEAM teachers' professional development workshop: Exploring the Highs and Lows of Landscapes: Demystifying Topographic Maps, Spring 2017

Simmons, J. E. CSATS i-STEAM teachers' professional development workshop: The Art of Science, Fun with Frogs: Capturing Observations in Nature, Fall 2016

Simmons, J. E. Kent State University: Museums and the Law, LIS 50693, Spring 2016; Foundations of Museum Studies, LIS 60700, Fall 2016; Museum Collections, LIS 60701, Spring 2017; Museum Origins, LIS 61095, Spring 2017

Simmons, J. E. Museum Study LLC: Ethics and Laws, Fall 2016; Policies for Collections Management, Spring 2017

Simmons, J. E. Universidad Nacional: Principios de la Administración de Colecciones y Sistemas de Información, Fall 2016

Simmons, J. E. U. S. Department of Interior: Curation of Natural History Collections, Summer & Fall 2016

Simmons, J. E. & MacDonald, G. Transmitting Science S.L.: Care and Management of Natural History Collections, Fall 2016

Professional Development

Graham, R. W., Snider, J., Simmons, J. E. & EMS Museum Advisory Board (2016). AAM Small Museum Accreditation Academy

Graham, R. W. (2016). American Quaternary Association Biennial Meeting, Santa Fe, New Mexico
Graham, R. W. (2016). Society of Vertebrate Paleontology Annual Meeting, Salt Lake, Utah
Graham, R. W. (2017). Society of American Archaeology Annual Meeting, Vancouver, British Colombia, Canada
Simmons, J. E. (2016). Pennsylvania Cultural Resilience Network (PaCRN) responder training, Ambridge Village, Pennsylvania
Snider, J. (2016). ActLab Database training, University of Pittsburgh, Aug 2016
Snider, J. & Simmons, J. E. (2016). American Alliance of Museums annual meeting, Washington, D.C.
Snider, J. & Simmons, J. E. (2017). American Alliance of Museums annual meeting, St. Louis, Missouri
Snider, J. & Simmons, J. E. (2017). Small Museums Association annual meeting, College Park, Maryland
Snider, J. & Simmons, J. E. (2017), Society for the Preservation of Natural History Collections annual meeting, Denver, Colorado

Professional Service

Simmons, J. E. Board member, Association of Registrars and Collections Specialists
Simmons, J. E. Advisory board member, C2C—Connecting to Collections
Simmons, J. E. President, Collections Care Professional Network, American Alliance of Museums
Simmons, J. E. President-elect, Registrars Committee of the American Alliance of Museums
Snider, J. Chair-elect, Penn State Museum Consortium

Awards Received

Graham, R. W. PNAS Cozzarelli Award: One of six best papers published in Proceedings of the National Academy of Sciences in 2016
Simmons, J. E. Dudley-Wilkinson Award of Distinction, AAM Registrars Committee

Press & Listings

Science News, Laurel Hammers. Mammoth extinction on St. Paul, Jul 28
The Atlantic, Ed Jong. Mammoth extinction on St. Paul, Jul 28
New Scientist, Connor Gearin. Mammoth extinction on St. Paul, Jul 29
Smithsonian.com, Rachel Nuwer. Mammoth extinction on St. Paul, Jul 29
New York Times, Tatiana Schlossberg. Mammoth extinction on St. Paul, Jul 29
Centre Daily Times, Britney Milazzo. Educators learn to teach climate change research in classrooms, Aug 1
BBC, Rebeca Morelle. Mammoth extinction on St. Paul, Aug 1
The Guardian, Nicola Davis. Mammoth extinction on St. Paul, Aug 1
Miami Herald, Kerri Sheridan. Mammoth extinction on St. Paul, Aug 1
Daily Mail, Abigail Beal. Mammoth extinction on St. Paul, Aug 1
Gizmodon, Maddie Stone. Mammoth extinction on St. Pa Aug 1
BBC Newsday Program, Karen Chan. Mammoth extinctio on St. Paul, Aug 1
Alaska Dispatch News, Yeth Rosen. Mammoth extinction on St. Paul in Anchorage, Aug 2
NewsBeat Social, Chris DePastene. Mammoth extinction St. Paul, Aug 2
Washington Post, Susan Kaplan. Mammoth extinction on St. Paul, Aug 2
New York Times, Science Section. Mammoth extinction St. Paul, Aug 2
NPR and *Alaska's Energy Desk*, Zoe Sobel. Mammoth extinction on St. Paul, Aug 3
VICE'S Motherboard, Bryson Masse. Mammoth extinctio on St. Paul, Aug 3
Penn State News, A'ndrea Messer. Mammoth extinction St. Paul, Aug 15
Global Museum, Ed Yong. Mammoth extinction on St. Pa Aug 18
Science & Vie Junior, Oriane Dioux. Mammoth extinction St. Paul (French Science Magazine for Children), Sep 6
Focus, Marco Ferrari. Mammoth extinction on St. Paul (Italian Science Magazine), Sep 7
Discover Magazine, Jessica Marshall. Mammoth extinctio on St. Paul, Oct 12
Juniata Daily News, Dylan Miller. Museum outreach, Oct
Directory Depts. Of Geosciences. EMS Museum & Art Gallery Listing, Dec 2
NMS Society Bulletin, Dave Glick. NMS Museum Case, Dec 15
Bedford Gazette. Caves & Bone Picking, Jan 24
Science 360, Liam Jackson. Story on Claire Cleveland, Jan 27
Penn State News, Liam Jackson. Story on Claire Clevelan Jan 27
Freely Press (Barstow, CA). Listing in Book of Museums, Feb 3
NMS Bulletin, Bob Altamura. NMS Exhibit Case, Feb 15
New York Times, Nicholas Wade. Mammoth extinctions, Ma

Mysteries of the Museum (Travel Channel), Nick Farraco. Mammoth Extinctions, Apr 7

Penn State News, EMS Marketing & Communications. Ocean Acidification Exhibit, Apr 21

Penn State News, Patricia Craig. Cozzarelli Prize for Graham, May 9

Funding

Institute of Museum and Library Services Museums for America: Collections Stewardship

Renee and Edward Steidle Jr. Fund (Columbus Foundation)

John Ritzenhaler Company

Drs.Hu and Mary Barnes

Russell and Sue Anne Graham

Material Donations

Barry Sheets: Brindley clay collection

Barry Sheets: meta-anthracite specimen from Pennsylvania

Duff Gold: fossil coral

L. Susan Smith: Reports of the Inspectors of Mines, 1876

Penn State EMS Dept. of Geosciences: twenty-four large slabs of crystalline rock

John A. Spina, Jr.: paleoniscoid fish fossil (whole)

John A. Spina, Jr.: coelocanth tail fossil

John Krenzel: blue calcite

Lee Newsom: ammonite

Penn State Energy Institute: coal thin section collection

Penn State Energy Institute: plant and invertebrate macrofossils

Employees

Sarah Elder (IMLS grant funded curatorial assistant)

Priyanka Bose (Saturday Football & data entry)

Volunteers

Elizabeth Andrews
Hu Barnes
Priyanka Bose
Pernille Boving
Chris Brida
Jacob Cipar
Claire Cleveland
Patty Craig
Stacy Davidson
Medora Ebersole
Maureen Feinman
Helen Gall
Dave Glick
James Guyton
John E. Simmons
Ken Hickman
Beth Hoagland
Nick Holschuh
Heather Jones
Amanda Lay
Virginia Marcon
Jonathan Mathews
Linda Musser
Jon Nese
Carlo Pantano
Julia Plummer
Kerry Ryan
Judith Sclafani
Howard "Chip" Steidle, Jr.
John Stewart
Shaokang Yuan

Space Utilization

Jun 03 Alumni Luncheon
Aug 02 REU Poster Session
Sept 13 Geosciences Undergraduate Awards
Sept 15 International Culture Night
Sept 29 Research Mixer Land/Water Research
Oct 14 Reception for EME Graduate Social
Oct 19 EMS Staff Advisory Reception
Oct 19 Dean for Equity Reception
Oct 25 EMS Major Discovery Night
Nov 04 EME Graduate Reception
Nov 07 EMS Ambassador Program
Nov 15 Dean's Luncheon
Nov 15 AWG meeting
Nov 17 Research Mixer Land/Water Research
Nov 21 Dean's Reception
Nov 30 Undergraduate Poster Exhibition
Dec 08 Research Mixer Land/Water Research
Dec 09 Associate Dean for Equity Reception
Jan 12 We are for Science!, Associate Dean Equity
Feb 03 We are for Science!, Associate Dean Equity
Mar 02 CSATS Teachers' Workshop Landscapes
Mar 22 EMS Dean's Function
Mar 24 EMEX
Mar 25 EMEX
April 07 Shoemaker Lecture Reception
April 21 School Tour, Urban Teaching Collaborative Afterschool Online Tutoring Program
April 27 EMS Dean's Reception
May 19 Geomorphology Symposium
May 31 Geosciences
June 28 Geosciences Posters

Earth and Mineral Sciences
MUSEUM ART GALLERY

Earth and Mineral Sciences Museum & Art Gallery
Ground Floor, Deike Building (one half block south of Burrowes and Pollock Roads)
Penn State University Park Campus
814-865-6336
museum@ems.psu.edu
www.ems.psu.edu/outreach/museum