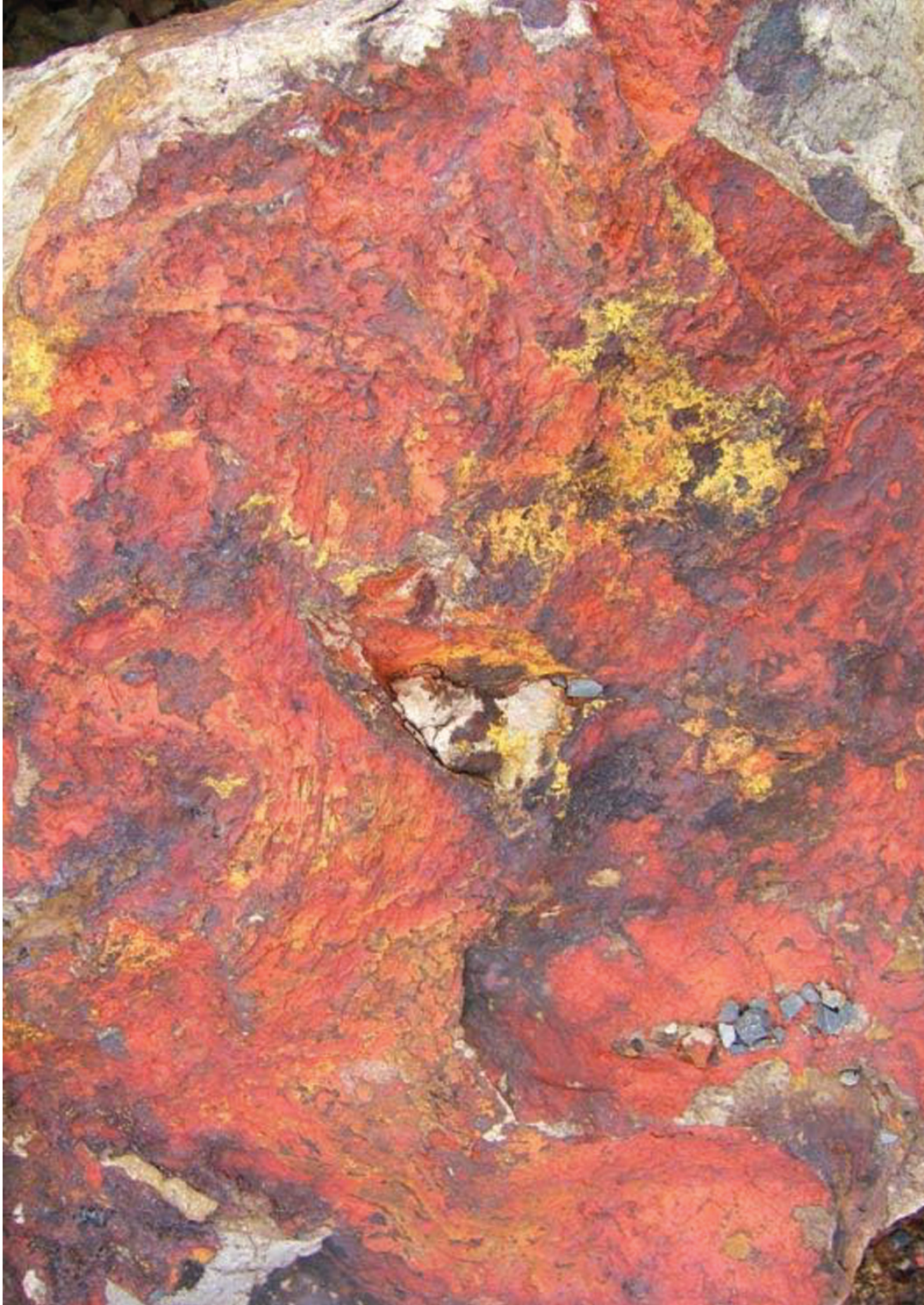


EMS MUSEUM ANNUAL REPORTS

FOR THE ACADEMIC YEARS APRIL 2004–MARCH 2006



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RUSSELL WM. GRAHAM
DIRECTOR

AND

JULIANNE SNIDER
ASSISTANT DIRECTOR

APRIL 24, 2006

On the front cover: "Acid Rock" from 199 construction project exhibiting the end products of weathering pyrite on sandstone—goethite, hematite, and other iron oxide minerals. Photo courtesy Ulli Limpitlaw

MISSION STATEMENT

The mission of the Earth and Mineral Sciences Museum is to preserve the collections of the College of Earth and Mineral Sciences, to enhance the quality of life for the students and staff of Pennsylvania State University and the community in central Pennsylvania by serving as a resource for informal science education, to foster a sense of curiosity about the natural and cultural world around us, and to instill responsibility in all people to make our world a better place.

DEAN

Eric Barron

MUSEUM ADVISORY BOARD

Mark Patzkowski. Chair

Michael Adewumi

Fletch Byrom

Ted Daeschler

Joe Drahuschak

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Peter Heaney

Jonathan Mathews

George Milner

Carlo Pantano

Eric Schruers

Howard "Chip" Steidle, Jr.

Jennifer Theiss

Bill Welch

INTRODUCTION

The Earth and Mineral Sciences (EMS) Museum began a new phase in its history with the appointment of Dr. Eric Barron as Dean of the College of Earth and Mineral Sciences. New space, with two exhibit galleries and a Director's office, was allocated to the EMS Museum as part of the remodeled ground floor of the Deike Building. This space was selected specifically because it is located between the new Ryan Undergraduate Student Center and newly renovated state-of-the-art classrooms; therefore, students travel through the museum constantly. As a result of its location, the museum automatically serves a large audience of students as well as EMS faculty and staff and other visitors throughout University Park and the State College area.

Dr. Russell Wm. Graham was hired as Director of the museum on April 1, 2004 and Julianne Snider joined the staff as Assistant Director of Exhibits and Collections in January 2006. During Russ' first five months, he devoted his time to formulating and writing Mission and Vision statements for the new museum. He also developed five year strategic plan for the museum. In collaboration with Dean Eric Barron and Director of Development, John Dietz, Russ established the EMS Museum Advisory Council. The first meeting of the EMS Museum Advisory Council was held in October 2004.

This report provides updates on the annual activities and future plans of the EMS Museum. The museum's three main areas of activity and focus are collections, exhibits, and programs. These areas enhance the EMS Museum as a center of learning within the university environment.

Unlike formal classes, the museum offers the opportunity to teach and learn in alternative ways. While formal classes focus on specific student audiences, museums appeal to diverse ones. An unique aspect of any museum is its collections—real objects for people to interact with, and to view. Collections are at the foundation of any museum and are used as the basis for creating exhibits and programs. Through these two avenues, the EMS Museum provides an outreach venue for university faculty and staff to present their research to a wider audience. Today, it is critical to provide information about the results of research conducted with public money to the general community. Also, the museum provides an enriching environment to stimulate and encourage people, especially students, to become more involved with science, to understand its contributions to society, and to use that understanding to become more responsible citizens in our highly technical society.

This report is devoted to the activities of the EMS Museum during the two Academic Years of 2004–2005 and 2005–2006. In the future, annual reports will be issued each year in time for the spring meeting of the EMS Museum Advisory Board.



*Hexagonal quartz (SiO₂) crystals
from the EMS Museum collection*

COLLECTIONS

The EMS Museum collections are comprised of: natural history specimens, especially minerals; historical artifacts; documents; and an extensive, and important, discipline-related art collection. The museum's mineral collections, considered to be among the premier collections in the United States contain specimens from throughout the world, especially from the Rocky Mountain area of the United States. Pennsylvania State University was one of the first land grant colleges in the United States; agriculture and mining were among the first disciplines taught. Consequently, there has been a deep-seated interest in working with, and collecting minerals..

The museum collections also contain fossils, primarily exhibit specimens rather than research materials. There are excellent examples of Pennsylvanian (Coal Age) plant fossils as well as a few isolated dinosaur elements, especially tracks. There are also some Paleozoic vertebrate specimens, primarily tracks, and a small invertebrate collection indicative of common fossils found in the Paleozoic deposits of Pennsylvania. Russ has been adding to the vertebrate fossil collection with specimens that are collected from caves as a result of his research efforts in South Dakota's Black Hills.



The museum maintains a historically valuable collection of safety lamps and mining artifacts. Historical pieces of other scientific equipment are an integral part of this collection as well.

The museum has records, photographs, and slides that document its history as well as the history of the college. As part of the collection policy, Russ has made arrangements with the Pattee-Paterno Library to serve as archives for this type of material; however, most of it still needs to be sorted and evaluated before being sent to the library archives.

The art collection is unique and historically important. The collection was amassed primarily by Dr. Edward Steidle, Dean of the College of Earth and Mineral Sciences from 1929 to 1953. The collection focuses on various aspects of the mineral industries and formed the basis for the first art exhibitions on the Pennsylvania State College campus (now Pennsylvania State University). The collection now has over 300 pieces of art that include oil paintings, water colors, charcoal sketches, pen and ink drawings, and sculptures. Dr. Eric Schruers used the collection as the basis for his Ph.D. dissertation in 1996. As Schruers stated in his dissertation, the EMS Museum Art Collection "...represents an Industrialist School of twentieth-century American realism." This artistic value is enhanced by the historical documentary aspects of the collection. Much of the subject matter records industries and working conditions that were viable in the last century but do not exist in Pennsylvania today. Several of the pieces were created as

Cubic pyrite (Fe S₂), Bingham, Utah, from the EMS Museum collection

part of the Federal Arts Project division of the Works Progress Administration (WPA). Also, the works of many well-known and important American artists are represented. New acquisitions have been continually added since Steidle initiated the collection. A charcoal sketch of a colliery by John Willard Raught was donated in 2005.

One of Russ' first accomplishments was to write a Policy and Procedures Manual for EMS Museum. The manual was approved by the EMS Museum Advisory Board and the Dean of the College of Earth and Mineral Sciences. This document puts the museum on a sound foundation with respect to its collections by clearly stating reasons and procedures of adding to the collections, loaning material, and de-accessioning as well. The manual will be available on the EMS Museum Web page in the summer of 2006.

Other highlights of the two years covered in this report include cataloguing substantial parts of the collection, acquiring new space for an EMS Museum Research, Education and Collections (REC) Facility, and packing of the collections for the move to the new facility.

As part of the process of moving to new exhibit galleries and collection facilities, the museum exhibits in the Steidle building were dismantled. Specimens in these exhibits have been placed in storage and will be moved to the new REC Facility. These specimens will facilitate changing exhibits in the Deike Building as well as loans or traveling exhibits to other institutions. The EMS Museum collections are the foundation of the museum and their preservation into perpetuity is a primary goal of the museum.

The collections that were on exhibit or in storage in the Steidle Building have been inventoried and catalogued. At present, the catalogue is on paper but will be transferred to an electronic medium in the next year. Other collections, stored in the basement of the Deike Building, have not yet been inventoried and catalogued; however, these processes will occur as soon as the collections are moved to the REC Facility.

The EMS Museum has an active loan program. Over the last two years, specimens from the collections have been loaned to the Palmer Art Museum, the Westmoreland Museum of American Art, and the Mine Safety Review Board for exhibits. In addition, the art collection has been used for publications by the Westmoreland Museum of American Art, the Pennsylvania State University Publications, and a book on the history of Pennsylvania by Dr. William Pencak, Department of History, Pennsylvania State University.



*Rhythm of Structural Steel, oil on canvas, A.H. Bennett,
EMS Museum collection*

EXHIBITS

During the summer of 2004, exhibits were installed in the two new galleries in Deike. An exhibit of 21 paintings representative of the various themes within the Steidle collection was installed in the Art and Mineral gallery. These themes include extraction of mineral resources, processing of those resources, transportation, workers, and the conditions under which laborers worked and lived. In addition, a portrait of Dean Edward Steidle by Malcom Parcell was displayed with a case of artifacts documenting Steidle's life. Two cases of minerals were also installed illustrating two different mechanisms by which minerals have color. This spring (2006) some of the paintings were replaced with eleven photographs representing the top five winning entries from both the undergraduate and graduate categories of the Annual EMS Museum Student Photo Contest.

In the Science and Technology gallery, exhibits on the acid rock problem of the I99 corridor, coal, dinosaurs, variation in quartz, materials in medicine and nanotechnology, and free oxygen in the atmosphere and oceans were installed and rotated. As part of the strategic plan for the College, the museum is also involving students in the development of exhibits. An undergraduate research case has been initiated. This case focuses on the research of undergraduate students, primarily topics from their Senior Theses. The case will rotate each semester to incorporate students from all of the academic departments. In addition, the museum will devote three cases to exhibits developed around winning posters from the annual Graduate Colloquium.

In 2005 a Geowall exhibit was implemented. The Geowall is a three-dimensional projection system that allows viewers to see objects of any scale (atoms to landscapes). Chuck Anderson, the Geowall Programmer, is working with EMS staff to develop a variety of Geowall exhibits that can be manipulated by museum patrons. The Geowall is also used for special programs for university and K-12 students. It will interface with future museum exhibits on ice sheets and seismology.

A large projection screen, currently displaying content developed by EMS faculty and staff, has been placed in the exhibit gallery. This screen will serve as a platform for current event exhibits. All types of information can be presented updating students and staff on activities in the EMS College. The screen is available to faculty, staff, and students to promote their activities and news.

The most extensive exhibit to date will be one on seismology and the structure of the Earth. This exhibit is currently under construction but will be in place during the summer of 2006. It will have computer screens showing seismic readings from the EMS station as well as other stations throughout the world. There will be a large interactive map showing the location of earthquakes with a Richter magnitude of 5.0 or greater. In addition there will be a touch screen with interactive information about earthquakes and the structure of the earth made available through IRIS (Incorporated Research Institutions for Seismology). Another computer screen will record signals from a pressure gauge so visitors will be able to create their own earthquakes. All of this will be accompanied by graphics and text explaining how earthquake signals are used to reveal information about the structure of our planet.

An EMS Museum Exhibit Committee has been working with the museum to plan for future exhibits. These exhibits will be representative of all of the disciplines in the EMS College. They will be interactive and integrated as well as feature research conducted by faculty and students in EMS. A basic plan has been completed. It will be used in implementing future exhibits once it has been approved by the Dean and the EMS Museum Advisory Board.

PROGRAMS

Programming has basically been opportunistic. The museum has had numerous visits by school groups throughout the year. Russ has been working with representatives from the President's office to let schools know that new exhibits are located in Deike. Also, this spring, the museum will be working with high school students to make a short film advertising the museum. This film will be given to schools to show or pod cast in an effort to make students and their parents aware of the museum's programs. Russ gave a series of lectures on the structure of the Earth to fifth graders at the Pine Grove Mills School. The museum is being used for classes at the university as well. In this next year, Russ will form a Program Committee so the museum can begin to plan formal programs around the EMS Museum exhibits.



*Off-hand Glass Blowing, oil on canvas, Louise Pershing,
EMS Museum collection*

STAFF

Dr. Russell W. Graham, Museum Director
(April 2004–Present)
Dr. Andy Sicree, Curator (April 2004–
September 2005)
Julianne Snider, Assistant Director for Exhibits
and Collections (January 2006–Present)
Melanie Stine, Office Manager (part time)
Lucy Alpin, Temporary Collection Assistant
(Fall 2005–Summer 2006)
Jodi McWhirter, Temporary Collection Assistant
(Fall 2005–Summer 2006)

STUDENT EMPLOYEES

Dionne Hallet (Fall 2004)
Daniel Danehy (Fall 2004–Spring 2005)
James Brezel (Fall 2004–Spring 2005)
Sarah Rohan (Fall 2004–Spring 2005)
Kathleen Galligan (Fall 2004–Spring 2005)
Katherine Williams (Fall 2004–Spring 2005)
Alexander Hastings (Spring 2005)
Jacob McCartney (Fall 2005)
Melissa Pardi (Fall 2005–Spring 2006)
Katherine Hikel (Fall 2005–Spring 2006)
Pedro Acosta (Fall 2005–Spring 2006)
Alexander Bryk (Spring 2006)

CONTRIBUTING EMS STAFF

Tim Robinson (EMS)
Mike Fleck (Materials Science and Engineering)
Chuck Anderson (Earth and Environmental
Systems Institute)
Ken Biddle (EMS Shop)
Ronald Ayers (EMS Shop)
David Parker (EMS Shop)
Andy Nyblade (Geosciences)
Chuck Ammon (Geosciences)
Hiroshi Ohmoto (Geosciences)
Sridhar Anandakrishnan (Geosciences)
Alice Clarke (Penn State Astrobiology
Research Center)
Yumiko Watanabe (Penn State Astrobiology
Research Center)
David Bavacqua (Penn State Astrobiology
Research Center)

EMS EXHIBIT COMMITTEE

Peter Wilf (Geosciences)
Lisa Brown (PA Space Consortium)
Eric Spielvogel (Dutton E-Education Institute)
Tim Robinson (EMS)
Ron Redwing (Nanotechnology Center, Physics)
Bill Burgos (Engineering)
Scott Richardson (Meteorology)
Dennis Lamb (Meteorology)
Paul Markowski (Meteorology)
M. J. Kitt (State College Schools)
Brian Peters (State College Schools)
Vinnie Scanlon (PSU Agriculture Museum)
Dee (Delores) Muller (PSU President's Office)

STUDENT VOLUNTEERS

Alexander Bryk (Fall 2005)
Ashley Bozewski (Spring 2006)
Minoo Kosarian (Spring 2006)
Winchelle Sevilla (Spring 2006)

EXHIBITS

Materials in Medicine (GEMS Symposium:
Fall 2004–Spring 2005)
199 Acid Rock (Fall 2004–Spring 2006)
Dean Edward Steidle History (Fall 2004–
Spring 2006)
Colors in Minerals (Fall 2004–)
Environments of Coal Formation and
Coal Utilization (Fall 2004–)
Quartz Diversity (Fall 2004–)
Dinosaurs and other Ichnofossils (Fall 2004–)
Representative Themes of Steidle Art Collection
(Fall 2004–)
EMS Museum Student Photo Contest (Spring 2006)
Marble Bar Australia and Free Oxygen
(Spring 2005–Spring 2006)
Geowall (Spring 2005–Spring 2006)
Science in Action: Picking Matrix (December 2005)
Big Screen TV (Spring 2006)
Undergraduate Research Case (Spring 2006)

NEW ACQUISITIONS

Charcoal sketch of a colliery by
John Willard Raught
Skeletons purchased for Geosciences
SD Cave Fossils, Graham Research

LOANS

Palmer Art Museum, PSU
Penn State University Press
Materials Research Institute
Westmoreland Museum of Art, Greensburg, PA
William Pencak, PSU History
Mine Safety Health Administration Review Board
Malcom Woollen, St. Andrews Church

IDENTIFICATIONS

Fe Concretion: *Victoria Weaver*
Slag: *Shari Miller*
Slag: *Museum visitor*
Anthrophycus worm tubes: *Museum visitor*
Rocks: *Museum visitors*
Concretion: *John Hochreither*

TOURS

Nittany Mineralogical Society (Fall 2004)
Alan Kimel Material Sciences Class (Fall 2004)
Vladislov Kecojevic's Mining Engineering Class
(Fall 2004)
Pattee-Paterno Library Exhibit Committee
(Fall 2004)
Vladislov Kecojevic's Mining Engineering Class
(Spring 2005)
Pattee-Paterno Library Exhibit Committee
(Spring 2005)
Vladislov Kecojevic's Mining Engineering Class
(Fall 2005)
Vladislov Kecojevic's Mining Engineering Class
(Spring 2006)
Bellefonte Senior Center (Spring 2006)
State College High School Class (Spring 2006)
State College Home Schools (Spring 2006)

PROGRAMS

Nittany Mineralogical Society (October 2004)
State College July 4 Celebration (July 2005)
EMS Photo Contest (September 2005)
I99 Symposium (October 2005)
Nittany Mineralogical Society (March 2005)
Earthquakes five fifth grade classes at Pine Grove
Mills School (February 2006)
EMS EMEX (March 2006)
Geodes with Nittany Mineralogical Society
(March 2006)
Junior Geologists with Nittany Mineralogical
Society (April 2006)
Nittany Mineralogical Society (April 2006)

PRESS

CDT: Bellefonte Senior Center tour

PUBLICATIONS FEATURING EMS MUSEUM COLLECTIONS

Mills, Walt 2005. Article. *Penn State Materials
Research Bulletin 1*.
Penn State Press 2005. *This is Penn State: An
Insider's Guide to University Park Campus*, Penn
State University Press.
Fahlman, Betsy 2006. Artists of the
Commonwealth Realism and Its Response
in *Pennsylvania Painting: 1900–1950*,
Westmoreland Museum of American Art,
Greensburg, PA March–June, 2006

*Tiger-eye quartz (SiO₂) originally thought
to be pseudomorphous after asbestos
is now interpreted by Drs. Peter Heaney
and Donald Fisher (Geosciences PSU)
to "classically [exemplify] synchronous
mineral growth through a crack-seal
vein-filling process."*

EXHIBITS FEATURING EMS MUSEUM COLLECTIONS

Artists of the Commonwealth Realism and Its
Response in Pennsylvania Painting: 1900–1950,
Westmoreland Museum of American Art,
Greensburg, PA, March–June, 2006.
Palmer Museum Exhibit

DONORS

Hugh and Mary Barnes (2004, 2005)
Brian Carter (2004)
Catharine Savige Castro (2005)
James Cornette (2005)
Russell Graham (2004, 2005)
Linda Musser (2005)
Robert Schmalz (2004, 2005)
J David and Stephanie S. Walker (2004, 2005)

FRIENDS OF EMS MUSEUM

Initiated April 2006





*Take Our Daughters and Sons to Work Day
science demonstration, 27 April 2006,
EMS Museum gallery.*