

# Collecting Initiative in Geology

## History of Science Collections

University of Oklahoma Libraries  
Fundraising Plan, Spring 2021

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### Our mission

The mission of the OU Libraries History of Science Collections is to change lives by engaging the University community and beyond in meaningful experiences using special collections materials, both physical and virtual, now and in the future, for exploration, discovery and research.

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### Who are we? Where are we going?

The History of Science Collections is an interdisciplinary center for research and communication that bridges the sciences and the humanities and the wider culture by fostering historical understanding in areas such as geology and energy; meteorology and climate; technology and culture; health, medicine and society; women in science; public trust in science; and science in non-western cultures.

The History of Science Collections, founded in 1949 with an initial gift from Everette Lee DeGolyer, is a premier research collection. Its holdings include nearly 100,000 print volumes across diverse disciplinary subject areas, along with current publications in the field. The Collections supports multidisciplinary research in every chronological period, geographic region, and subject area of science, technology, and medicine. Among the earliest items are a cuneiform brick from an ancient astronomical ziggurat (ca. 1300 BCE), a number of medieval and early modern manuscripts, and the Collections' oldest printed book: Hrabanus Maurus, *Opus de universo* (1467). Astronomy, physics, natural history, geology, meteorology, technology, and science and religion are traditional areas of strength for the print holdings. Areas of concentration in recent decades include women in science, star maps, science in Islamicate cultures, and science and technology in Asia. Archives support research in the history of geology, meteorology, technology, and physics, among other topics. Digital collaborations include the *Darwin Online* project of Cambridge University and the *Galileo//Thek@* digital library of the Museo Galileo in Florence, Italy. A travel fellowship program, endowed by the Andrew W. Mellon Foundation, supports use of the Collections by visiting scholars. The Collections is a member of the Consortium for the History of Science, Technology and Medicine ([chstm.org](http://chstm.org)). The Collections works closely with the OU Department of the History of Science, Technology, and Medicine, and with the University Libraries Western History Collections.

Our immediate and strategic vision is concentrated on becoming one of the leading centers for research worldwide for the history of the geo-sciences. The History of Science Collections already holds remarkable print collections and archives in the area of geology, which is related to significant and real-world challenges in energy, climate change, and environmental science. Now, a collecting initiative to process and acquire materials in the history of geology represents a major further step toward achieving that vision.

### **History of Geology Collecting Initiative – Summary**

The History of Geology Collecting Initiative consists of various geology papers and the archives of several eminent, distinguished historians of geology worldwide. We are currently seeking funding to process them and make them available to scholars, as well as to collect additional papers documenting the history of geology in Oklahoma. Initial archives already in the History of Geology Collecting Initiative are described in the Appendix. These archives are already attracting interest from researchers around the globe. In addition, further archives and related materials for the history of geology worldwide will be sought and added to the Collections.

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## Why does it matter?

This collecting initiative will reinforce the reputation of OU as one of the leading centers for research worldwide not only in the *sciences* of geology, but also for the historical understanding of geology. It will also establish the capacity for the scientific enterprises in geological fields carried out through the University to be more adequately documented and preserved for future generations of researchers.

This collecting initiative will enable the History of Science Collections to contribute to the University's goals as outlined in the *Lead On* strategic plan. The first "pillar" of that vision is to "Become a Top-Tier Public Research University." To do so, it is necessary for the University to "Build, enhance, and support campus infrastructures necessary to compete at the level of top public universities" (Strategy #6). By any measure or definition, the OU program in the history of science is top-tier worldwide. This pillar also calls us to focus on our role to "Enrich and Positively Impact Oklahoma, the Nation, and the World through Research and Creative Activity" (Pillar #5). The history of geology offers a clear opportunity for OU to "Create multidisciplinary Research Centers of Excellence focused on significant and real-world challenges that provide opportunities for different areas of expertise across all three campuses" (Strategy #2).

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## Why are we the right ones to do it?

For 70 years, the University of Oklahoma has invested in building a distinctive infrastructure in the synergistic combination on a single campus of a world-renowned special collection and a robust academic department devoted to the history of science. The combination of the History of Science Collections (HOSC) and the Department of the History of Science, Technology, and

Medicine (HSTM) creates a distinctive program for the University. Very few programs in the field enjoy this combination. Peer institutions include Cambridge University, which boasts a Department of the History of Science of comparable size coupled with the Whipple Museum for the History of Science (whose curator happens to be an alumna of the OU Department).

This collecting initiative builds upon the strong print holdings of the History of Science Collections. Although the Collections' holdings of the works of major figures like Copernicus, Kepler, Galileo, Newton, or Darwin are well known, holdings in geology are equally rich and deep. They span the gamut from rare works in early modern geology (see a mere seven examples in the table below) up through the books and serials of the 20th century. For example, the study of petrified wood by Prince Cesi (Galileo's friend and patron of the Academy of the Lynx) is one of the rarest works in the history of geology. And in addition to the famous geological map of William Smith, the Collections holds five other works by Smith, including his own copies of two of his books, richly annotated.

Geology
Georg Agricola, <i>De re metallica</i> (Basel, 1556)
Francesco Stelluti and Federigo Cesi, <i>Trattato del Legno Fossile Minerale</i> (Rome, 1637)
Athanasius Kircher, <i>Mundus subterraneus</i> (1665)
William Smith, <i>Geological Map of England and Wales</i> (1815)
Charles Lyell, <i>Principles of Geology</i> (1830-33)
Louis Agassiz, <i>Études sur les Glaciers</i> (1840)
Charles Darwin, <i>Geological Observations on South America</i> (1846)

In 2019-2020, the History of Science Collections secured the papers and collections of Martin Rudwick and Hugh Torrens, arguably the two most prominent historians of geology worldwide. These papers augment other unprocessed archives in the geo-sciences that will be of immense interest to researchers in these fields. They will support research into local and state activities while also spanning the globe and extending back centuries in time. When combined with comprehensive print holdings in the history of geology, these archives, once they are processed, will establish the University of Oklahoma as a premier institution worldwide for research in the geo-sciences. Archives are listed in the appendices.

This collecting initiative is allied with converging efforts across the University in the Western History Collections and in various programs in the Mewbourne College of Earth and Energy. The print and archival holdings of the History of Science Collections combine together with the resources of the Western History Collections in the sciences of the American West. The History of Science Collections and the Western History Collections share many areas of content overlap and convergence, and undertake allied projects that are mutually supporting and draw upon shared efficiencies and resources. Both collecting initiatives will be supported by oral history

projects and the collection of additional materials in the History of Science Collections and the Western History Collections.

These efforts by the University Libraries special collections are brought to life by the community of scholars working in the Department of the History of Science, Technology, and Medicine, the Department of History, and other University of Oklahoma programs, along with national and international visiting scholars through a fellowship program sponsored by an endowment from the Andrew W. Mellon Foundation. The History of Science Collections attracts visiting scholars from around the world. Recent fellows have come to OU from Italy, France, the Netherlands, Luxembourg, the United Kingdom, the Czech Republic, Lebanon, Australia, and China to conduct research in the History of Science Collections.<sup>1</sup>

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<sup>1</sup> Pillar #2: Prepare Students for a Life of Success, Meaning, Service, and Positive Impact: “Strategy 5: Embrace global engagement as an integral part of the OU experience.”

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## How will these materials be used?



*Curator Kerry Magruder delivered a public talk on the work of Martin Rudwick and announcing the archive, on January 28, 2020, at the Sam Noble Museum*

The materials processed and acquired through these collecting initiatives will be seamlessly integrated into the full range of activities of the History of Science Collections. In addition to supporting scholarly research, these activities include public exhibitions and special events, multi-disciplinary undergraduate research opportunities, and extracurricular activities in the form of public outreach, exhibit development, digital scholarship, and K12 educational outreach.<sup>2</sup>



*A university class visiting the History of Science Collections*

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<sup>2</sup> Pillar #2: Prepare Students for a Life of Success, Meaning, Service, and Positive Impact: “Strategy 7: Enhance extracurricular activities to extend learning experiences beyond the classroom.” See also Pillar #3 of the University Libraries’ 2019 strategic plan, to build on excellence in special collections and “provide unique research opportunities for students and scholars at OU and beyond”; <https://libraries.ou.edu/content/strategic-map-2019-0>.

One example of integrated outreach is the Galileo's World exhibition for the years 2015-2019. During that exhibit, the History of Science Collections initiated outreach programs hosted by public libraries and K12 public schools to inspire disadvantaged young people in the state. In addition, the Collections hosted annual workshops for state educators through the NASA Oklahoma Space Grant Consortium, which serves educators from rural and underserved areas of the state.<sup>3</sup>



*An educator workshop held in the Collections*

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<sup>3</sup> Pillar #3: Make OU's Excellence Affordable and Attainable: Strategy 5: "Explore bold ideas that rethink the role of OU within the state to pursue our Purpose more effectively." For the Galileo's World exhibit, see <http://lynx-open-ed.org/glance>.

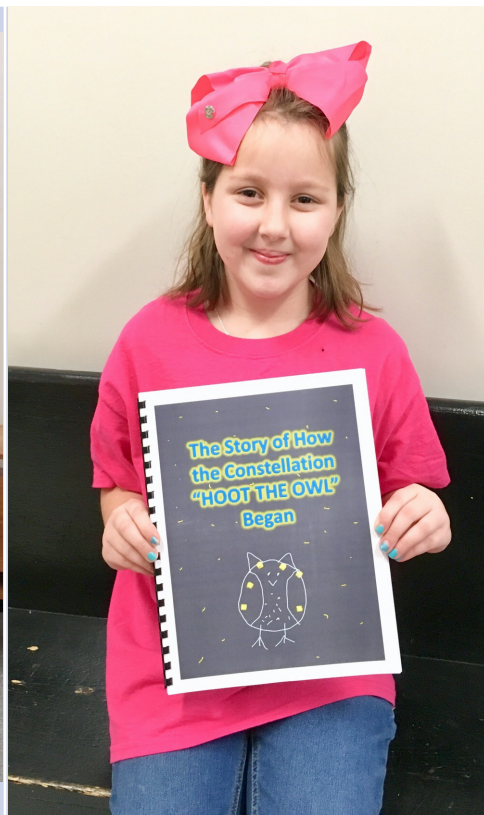
Two examples of the kinds of outcomes that may arise from these activities are shown below.<sup>4</sup>

### Mary Anning



“Thank you very much for your assistance! With your help, I have just competed in the regional round of National History Day, and I placed first in Junior Individual Performance! I am having a lovely time telling others about Mary Anning, and I so appreciate your wonderful help!” Isabella Hardy, who used materials from the Hugh S. Torrens archive.

### Hoot the Owl



*Hoot the Owl* is a story written by Anna Todd, a 2nd grade student at Rose Witcher Elementary School, El Reno Public Schools. Her teacher attributed her inspiration to learn to read to Galileo’s World exhibition outreach efforts.

<sup>4</sup> To download *Hoot the Owl*, and for the story behind it, see: <http://lynx-open-ed.org/AnnaTodd>.

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## How may a prospective donor help?

We are requesting assistance to fund this collecting initiative for a period of five years. Anticipated expenses include the labor of library employees to process archives; necessary materials and supplies; costs related to selection, acquisition and shipping of additional archives; and acquisition of ancillary materials. These would total approximately \$500,000 over five years.

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## Closing Statement

Existing print holdings, coupled with processing and acquisition of current and future archives through this collecting initiative, will position the University of Oklahoma to become a premier research destination known worldwide for the study of the history of geology.



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## Appendix: History of Geology Collecting Initiative

The History of Geology Collecting Initiative consists of various geology papers and the archives of several eminent, distinguished historians of geology worldwide. We are currently seeking funding to process them and make them available to scholars, as well as to collect additional papers documenting the history of geology in Oklahoma. These archives are already attracting interest from researchers around the globe. In addition, further archives and related materials for the history of geology worldwide will be sought and added to the Collections.

Initial archives already in the History of Geology Collecting Initiative include the following:

- Martin J. S. Rudwick Archive
  - *Main topics:* intellectual history of geohistory, Georges Cuvier, and Charles Lyell.
  - *Description:* Rudwick is the recipient of lifetime achievement awards in the history of geology from the Geological Society of London (Sue Tyler Friedman Medal); the Geological Society of America (Mary C. Rabbitt History of Geology Award); the Société Géologique de France (Prix Wegmann); and the International Union of Geological Sciences (Tikhomirov Medal). Rudwick made pioneering contributions to the history of geological mapping, visual illustrations, the social construction of geology, and the rise of the distinctive sensibility of “geohistory.” Rudwick has authored more than a dozen major books; many received numerous prizes and awards and eight remain in print from the University of Chicago Press. 35 large boxes of papers were sent from his home in England to OU in 2019 and are now in processing. Rudwick’s books are expected to arrive to OU in Fall 2021 to be added to the Collections’ cataloged print holdings.
- Hugh S. Torrens Archive
  - *Main topics:* Mary Anning, William Smith, mineral surveyors, geology and the British Industrial Revolution.
  - *Description:* Torrens is the recipient of lifetime achievement awards in the history of geology from the Geological Society of London (Sue Tyler Friedman Medal); the Geological Society of America (Mary C. Rabbitt History of Geology Award); and the International Union of Geological Sciences (Tikhomirov Medal). Torrens is the foremost historian of William Smith (creator of the single most renowned geological map), of Mary Anning (the working-class discoverer of dinosaur fossils who made a lot of gentlemen geologists famous), and of the historical relations between industrialization and geology. 70 large boxes of papers were sent from his home in England to OU in 2018 and 2019 and are now in processing. Torrens’ books are expected to arrive to OU in Fall 2021 to be added to the Collections’ cataloged print holdings.
- Kenneth L. Taylor Archive
  - *Main topics:* geology in the Enlightenment, French geology, and Nicolas Desmarest.
  - *Description:* Taylor is the recipient of lifetime achievement awards in the history of geology from the Geological Society of London (Sue Tyler Friedman Medal); the Geological Society of America (Mary C. Rabbitt History of Geology Award); and the Société Géologique de France (Prix Wegmann). Taylor is the foremost historian of geology in the French Enlightenment. He

is the OU Hudson/Torchmark Presidential Professor Emeritus. 10 banker boxes of papers are now in processing. Taylor's books have been given to the Collections to be added to the cataloged print holdings.

- Léo Laporte Archive
  - *Main topics:* George Gaylord Simpson and paleontology, Charles Darwin.
  - *Description:* Laporte, a renowned geologist at the University of California, Santa Cruz, produced the definitive biography of George Gaylord Simpson, whose work in paleontology provided a foundation for the early 20th-century Neo-Darwinian evolutionary synthesis. For this work, Laporte received the Mary C. Rabbitt Award from the Geological Society of America. 2 banker boxes of papers are now in processing.
- Alexander Ospovat Archive
  - *Main topics:* A. G. Werner and geology in 18th-century Germany.
  - *Description:* Earning his PhD in 1960, Ospovat was the first person to complete the OU doctoral program in history of science. He was a member of the History Department at Oklahoma State University from 1962 until his retirement in 1988. Ospovat became the leading historian of the great German mineralogist Abraham Gottlob Werner. In recognition of his contributions to the history of geology, Ospovat received an honorary doctorate from the Mining Academy in Freiberg in 1990. 10 banker boxes of papers on Werner, on the renowned Freiberg Bergakademie, and on German geology in the 18th-century, are now in processing.
- David B. Kitts Archive
  - *Main topics:* History of paleontology, philosophy of the historical sciences, and Charles Darwin.
  - *Description:* Kitts studied population genetics under Theodosius Dobzhansky and paleontology under George Gaylord Simpson. He joined the University of Oklahoma's School of Geology in 1954. After a distinguished career at OU as a professor of geology, in 1988 Kitts transferred full time to the Department of the History of Science. He became known for his work in the philosophy of geology and of historical science, including an unpublished monograph on the *Origin of Species* by Charles Darwin. 2 banker boxes of Kitts' papers are awaiting processing.
- International Correspondence Archive
  - *Main topics:* geology, natural history.
  - *Description:* Three notebook binders of letters are awaiting funding for processing and digitization. One of the binders is a miscellaneous collection. One binder is comprised of letters to the 19th century British geologist [J. Beete Jukes](#) (1811-1869). Jukes studied at Cambridge with Adam Sedgwick, and served as a geologist/naturalist on expeditions to Newfoundland, Java, Australia, and elsewhere, before working as a geological surveyor in Staffordshire and in Ireland. His work was used by Darwin in the latter's explanation of coral reefs. One binder is comprised of letters to [John Forbes Royle](#) (1798-1858), a British botanist who worked in India and served as professor of *materia medica* at Kings College London. The letters in the three binders are in English, French, German, and Italian. They include letters written by Louis Agassiz, George Airy, Alexandre Brongniart, William Buckland, Henry

de la Beche, John William Colenso, Bernhard von Cotta, James Dwight Dana, Charles Daubeny, Jean Andre Deluc, David Forbes, Edward Forbes, Francis Galton, John Gould, Asa Gray, George Bellas Greenough, Ferdinand V. Hayden, John S. Henslow, Joseph Hooker, William Hopkins, Leonard Horner, Eben Norton Horsford, Alexander Humboldt, Thomas H. Huxley, Charles T. Jackson (to Parker Cleveland), Wilhelm August Lampadius (to A. G. Werner), Charles Lyell, Roderick Murchison, Richard Owen, John Phillips, Lyon Playfair, A. C. Ramsay, George Sarton, George Poulett Scrope, Adam Sedgwick, Charles Piazzi Smith, James Sowerby, Charles Stokes, John Lort Stokes, John Tyndall, George Robert Waterhouse, and William Whewell, along with many others. While all these are awaiting processing, eight letters by Charles Darwin have been provided to the *Darwin Correspondence Project* at Cambridge University.