Two thousand ten marks the sixtieth anniversary of the University of Oklahoma Program in the History of Science, Technology and Medicine. It was in 1949 that an alumnus of the University, Everette Lee DeGolyer, began a series of gifts of books to the University, and the University in turn agreed to the condition that a faculty member be hired to teach the History of Science. These events led ultimately to the University of Oklahoma becoming one of the earliest American universities to offer doctoral degrees in the field and to the creation of the renowned History of Science Collections.

**Background: Why the History of Science?**

The study of the history of science as a field in itself, rather than as background for the comprehension of the present state of scientific knowledge, is a child of the 20th century. Indeed, as a profession populated by professionally trained historians of science earning their living as historians of science, it did not come of age until the second half of the 20th century. Yet the study of the past of science by scientists is as old as science itself, and the earliest comprehensive scientific writings reflect an interest in, and a knowledge of, earlier scientific work. This is not astonishing for, from at least one point of view, any person wishing to understand the field must understand its development. Niels Bohr once expressed this attitude by saying "physics and the history of physics are the same thing."

There have been additional pragmatic reasons for an interest in the development of scientific knowledge. The European Middle Ages pursued science for its applications to theology and the institution of the Church. The Age of Rationalism saw science as representative of the peak of human intellectual abilities, encouraging efforts to elevate science to a position of social and moral authority, and awoke an interest in the nature of science on the part of those interested in the nature of knowledge itself. The increasing
impact on society of a technology based on scientific knowledge also spurred an interest in understanding science.

**History of Science Comes of Age: The Impact of World War II**

The Second World War gave both science and technology a new importance, with the development of many new weapons. It seemed urgent to many in the post-war period that all educated citizens comprehend the nature of the productive and sometimes frightening disciplines of science.

Among those whose wartime experiences with political leaders led them to believe that an increase in understanding of the scientific enterprise by educated non-scientists was important was James B. Conant, a chemist, president of Harvard University, and a wartime scientific advisor to President Roosevelt. In the Terry Lectures given at Yale in 1946, Conant advocated the use of the history of science in the teaching of science to non-science students. Published the following year as *On Understanding Science* (1947), the lectures articulated Conant's view that the way to understand science was through its history. Among the readers of this book was Everette Lee DeGolyer (1886-1956).

**Everette DeGolyer Encounters the Hand of Galileo**

DeGolyer was an oil prospector, geophysicist, amateur historian, and avid book collector. His long-standing professional interest in the application of the science of geophysics and his fascination with history led him to be intrigued by the history of science as Conant described it. "Historians of science," DeGolyer once said, "are not just interested in what scientists did, but also in what they were thinking." DeGolyer prided himself on being a man of action and at this point his action took two characteristic forms: he began to build a collection of books on the history of science, and he began to search for a home for the collection.

In 1949, DeGolyer went to Europe and began to buy books on the history of science. Initially he knew very little about the subject, but he had a remarkable ability to extract information from people and books alike. He quickly acquired three books and consumed their information in the early part of his trip. The books were: Martha Ornstein's *The Role of Scientific Societies in the Seventeenth Century*, first printed in 1913; Charles Singer's *The Story of Living Things* (1931); and an English translation of
Philipp Lenard's *Grosse Naturforscher* (1929). These did not represent the best state of knowledge but DeGolyer had an ability to use poor sources as well as good ones.

The first rare book purchase made by DeGolyer in Europe was Galileo Galilei's *Dialogo... sopra i due massimi sistemi del mondo* (1632), with notes by the author. Sweeping across Europe, DeGolyer acquired the nucleus of an extraordinary collection of books on the history of science, which he continued to expand by purchases from dealers' catalogs after his return home.

Apparently DeGolyer was already thinking of his *alma mater*, the University of Oklahoma, as a possible home for this collection and had discussed the matter with an old friend, Savoie Lottinville, then director of the University of Oklahoma Press. Lottinville conveyed this proposal to the University and took an aggressive role in trying to consummate the marriage. He was successful.

**DeGolyer's Bargain: The Genesis of the Program**

There was a string attached to the proposed gift. DeGolyer felt that the history of science was an important discipline in itself and wanted to use his already impressive book collection as a means of increasing academic interest in the subject. George L. Cross, then president of the University of Oklahoma, made a commitment to provide an academic base, at the University of Oklahoma, in response to DeGolyer's blunt proposal, "You provide the faculty, I'll provide the books."

In December 1949, 129 rare volumes were sent to the University, the first of many such shipments. In April 1951, DeGolyer established a fund to enable the University to purchase books to add to his collection and at his suggestion a faculty committee, chaired by Lottinville, was established to select important works to be purchased. By October 1951, the DeGolyer Collection contained nearly 600 volumes. Included were such extraordinary works as: a presentation copy of Galileo Galilei's *Sidereus nuncius* (Venice, 1610); Robert Hooke's *Micrographia* (London, 1665); Robert Boyle's *Sceptical Chymist* (London, 1661); Hrabanus Maurus' *Opus de universo* (Strassburg, 1467); Johann Kepler's *Harmonices mundi* (Linz, 1619); Antoine Lavoisier's *Traite elementaire de chimie* (Paris, 1789); Nicolaus Copernicus' *De revolutionibus* (Nuremberg, 1543); and Isaac Newton's *Philosophiae naturalis principia mathematica* (London, 1687).
Visionary Guidance Allows the Collections to Flourish

As President Cross had recognized the importance of the DeGolyer Collection to the University, so Arthur M. McAnally, the new director of University Libraries, simultaneously recognized its importance to the Libraries. McAnally quickly assumed a major role in book selection, the development of the Collection, and the broadening of its scope. To the already remarkable monograph collection were added great scientific journals, beginning with complete runs of the *Philosophical Transactions* of the Royal Society of London and the *Histoire et mémoires* of the Paris Academy of Sciences. Until McAnally's death in 1972, he used every means available to him to encourage and support the development of both the history of science book collection and the history of science academic program. Cross did the same. Without the active and continuing efforts of these two men, the DeGolyer Collection would have remained a small, precious and lonely collection of rare books.

The exploration of means to implement the academic program in the history of science culminated in 1954 with the appointment of Duane H. D. Roller jointly as curator of the Collection and as a member of the teaching faculty of the Department of History. By the fall of 1954, a permanent program of instruction had been inaugurated and the DeGolyer Collection had grown to 5,000 volumes.

With the death of DeGolyer in December 1956, his financial support also came to an end. However, the Collection he had begun furnished the nucleus for the present History of Science Collections. Through the efforts of the University faculty, alumni and friends, many solicited through the able efforts of R. Boyd Gunning, then director of the University of Oklahoma Foundation, growth of the Collections continued. Among major gifts have been: the Henry Crew Collection, the Paul E. Klopsteg Collection in the history and technology of archery, the Sally Hall Collection of scientific journals, the Jens Rud Nielsen Collection, the L.D. Lacy Collection, and the Alumni Development Fund Collection.

The Bargain Fulfilled: Teaching the History of Science

The first faculty position in the history of science was established in 1954. An additional one was established in 1959, a third in 1964, a fourth and a fifth in 1970. George Cross and Arthur McAnally continued to be the moving forces behind these
developments. Although Cross retired in 1968, his successors as president of the University have continued actively to support the history of science. Through the special efforts of McAnally and President Herbert Hollomon, a Department of the History of Science was created in 1971. In 1975 a sixth professorship was added. In the first decade of the twenty-first century, several new positions were created, and at present there are 15 historians of science at OU: 9 current faculty in the department, 2 in the Collections, 2 in the Honors College, and 2 emeritus faculty. As it has grown, the program has taken on a more comprehensive mission to investigate the history of science, technology and medicine within human culture.

Since its inception, the teaching program in the history of science has produced an extraordinary legacy of achievements. Its teaching faculty have been among OU's best. Three have been awarded distinguished professorships [Duane H. D. Roller (David Ross Boyd Professorship, McCasland Professor of the History of Science); David B. Kitts (David Ross Boyd Professorship); Mary Jo Nye (George Lynn Cross Research Professorship)]; Kenneth L. Taylor was awarded the Regents' Award for Superior Accomplishment in Professional and University Service. Four (Roller, Kitts, Taylor and Piers Hale) were recipients of University teaching awards. Three (Katherine Pandora, Kenneth Taylor and Steven Livesey) were honored with Presidential Professorships. Faculty research has been supported by a variety of funding agencies, including the National Endowment for the Humanities, the National Science Foundation, the Fulbright Fellowship Program, the Mellon Foundation, the Centre National de la Recherche Scientifique (France), the British Academy, the American Council of Learned Societies and the Social Sciences Research Council. Members of the department have also received significant national and international awards for their contributions to the discipline. In 1993, Professor Mary Jo Nye was named a Fellow of the American Academy of Arts and Sciences (the only member from the state of Oklahoma), and Professor Nye served as president of the History of Science Society during 1988-89. In 1994, Professor Gregg Mitman received the Gustave O. Arlt Award for his book *The State of Nature* (published in 1992 by University of Chicago Press), an award given by the Council of Graduate Schools for the publication of a book in the preceding seven years deemed to be of outstanding scholarly significance. In 1997, Professor F. Jamil
Ragep received the Kuwait Prize for his contributions to the history of Islamic science and in particular for his book on Naṣīr al-Dīn al-Ṭūsī's Memoir on Astronomy (al-Tadhkira fī ʿilm al-hayʾa), published in 1993 by Springer-Verlag. And in 1998, Professor Kenneth L. Taylor received the Sue Tyler Friedman Medal of the Geological Society of London, for contributions to the history of the earth sciences.

Since 1957, 75 students have received M.A.s in the History of Science; since 1960, 37 students have received Ph.D.s. While at the University, they have been supported under a variety of initiatives, including NDEA funding, Fulbright funding for research in Eastern Europe, and NSF dissertation funding. In 1996 and 1997, the department was a contributor (along with Arizona State University and the University of Minnesota) to a unique graduate training program funded by the National Science Foundation. Students from the three programs traveled to each campus to study with scholars in ecology studies. Program graduates have gone on to assume positions across the United States, in Asia, and in Europe. After leaving OU, alumni have received significant awards in the field, including the Werner Medal by the German Geological Society, Phi Beta Kappa's Mary Isabel Sibley Fellowship, and the Organization of American Historians' Richard W. Leopold Prize.

In its current form, the department has molded strengths in several areas

- **Premodern Science**  
  (Professors Barker, Crowther, Livesey, Magruder and Vermij)  
Supported by the especially strong holdings in the History of Science Collections, faculty and student research in premodern science includes investigations of scientific methodologies, mathematics, astronomy and astrology, natural history and medicine, and theories of the earth in the premodern world. University resources include the Center for Medieval and Renaissance Studies and the Variorum Chaucer. OU is a member of the Newberry Library Consortium.

- **Biological and the Social Sciences in the Modern World**  
  (Professors Hale, Heyck, Moon, Pandora, Soppelsa and Weldon)  
There is a diverse set of interests among the modern faculty in relation to the biological and social sciences, which includes approaches that range from intellectual histories, biography, and disciplinary studies to technology and science studies to cultural histories that incorporate literary perspectives, popular culture, and mass media. Particularly strong focal points are: evolution; natural history; environmental studies; colonialism; questions regarding the convergence of the biological, the social and the technological; interdisciplinarity in the social sciences; politics; religion; and the cold war period. Related expertise in
environmental studies in the Department of History and elsewhere on campus complement these emphases, as do the interests of particular faculty in the biological and social sciences. Beyond the History of Science Collections, University resources include the hosting of the state’s biological and archeological surveys, the Sam Noble Oklahoma Museum of Natural History, and holdings related to nature and the American West and Native American Studies in the Western History Collections and in the Fred Jones Jr. Museum of Art.

- **Science and Religion**  
  (Professors Barker, Crowther, Livesey, Magruder, Vermij and Weldon)  
  The interaction between science and religion is a focus of the work of several of our faculty in areas ranging from the physical and biological sciences to the social sciences and covering the Medieval and Early Modern periods through the twenty-first century. Topics of special interest to faculty include the ways in which institutions have mediated the intellectual questions, the social nature of the interactions, and the manifestation of religion and science in both popular and elite culture. We have an especially strong focus on both Protestant theology and liberal Christianity and atheism. These research interests are supplemented by two undergraduate classes on religion and science and periodic graduate courses. Several Master’s and doctoral theses have focused primarily on the interaction between science and religion. University resources include a strong interdisciplinary Religious Studies program which brings faculty together from around the University.

- **History of American Science**  
  (Professors Hamerla, Heyck, Palmeri, Pandora, Tracy and Weldon)  
  Faculty and students in this area blend intellectual, institutional, and cultural history in their approaches to key topics and issues in the History of Science and in American History. Areas of special focus include: science and social thought; science, technology and industry (especially the chemical, electronics, and computing industries); science, technology, and the environment (especially the history of ecological thought and the political history of environmentalism); science and the federal government; science and religion in the 19th and 20th centuries; the social history of medicine; and science, technology, and medicine in popular culture. Faculty in this area often work closely with members of the History Department, which is particularly strong in the history of the American West and in environmental history. In addition to the History of Science Collections, other University resources include the Western History Collection, well-known for its outstanding collections related to the politics, culture, and development of the American West.

- **History of Technology**  
  (Professors Heyck, Magruder, Moon, Pandora and Soppelsa)  
  Faculty and student research in technology includes studies of technology in the developing world; the history of media and information processing with a particular focus on new media and the use of new media in the history of science;
20th-century technoscience, including space science and technology; technology in popular culture; technology in Asian history; and the use of scientific instruments to explore and represent nature, including the human body and mind. Affiliated faculty in OU’s history department offer expertise in the history of medieval technology. While primarily engaged in historical research, faculty members also bring Science, Technology and Society perspectives and analytical methods to their work. The Department of the History of Science is the editorial home for Technology and Culture, the journal for the Society for the History of Technology (2010-).

- **Science, the Public, and Popular Culture in the Modern Era**  
  (Professors Hale, Palmeri, Pandora, Soppelsa and Weldon)  
  Research in the modern period on questions related to science and popular culture, science and the public, and popularization encompasses the British and U.S. contexts (both separately and comparatively), and topics from the fields of astronomy, anthropology, biology, natural history, psychology and sociology. In addition, other areas of focus by faculty include various popular genres such as science fiction; interdisciplinary issues such as childhood and science; and analysis of themes in mass media – periodicals, books, television, and film.

- **History of Medicine and Biomedical Science**  
  (Professors Crowther, Hale, Soppelsa and Tracy)  
  Students have the opportunity to explore the relationship between our increasing knowledge of physiology, pathology and therapeutics and the social, ethical and legal implications that have developed alongside them from antiquity to the present. Graduate training in the history of medicine also includes work in the history of the body, gender, and sexuality. The history of medicine and biomedical ethics provides critical perspectives from which to better understand current debates in the ongoing revolution in the life sciences. Faculty and student research focuses on the early modern period (1500-1800) and on the 19th and 20th centuries. Research in early modern medicine is supported by the History of Science Collections, whose holdings include early printed works on anatomy, pathology, therapeutics (including both herbal and alchemical medicines), and astrological medicine, as well as microfilm collections of recipe books and plague tracts. In addition to materials in the History of Science Collections, the field is supported by the History of Medicine Collection in the Robert M. Bird Health Sciences Library on the Oklahoma City campus.

- **New Media in the History of Science, Technology, and Medicine**  
  (Professors Livesey, Magruder, Moon, Pandora and Weldon)  
  The department is home to a cluster of scholars currently experimenting with web-based technologies for research and teaching in the history of science, technology, and medicine. Efforts include: digital databases and bibliographies; digitized image collections; how scholarly journals can innovate in adapting to online environments; rethinking research practices through the use of digital tools; development of online and hybrid courses; use of blogging and other new media
strategies in support of wider scholarly access and public history outreach; and the creation of webfolio projects that draw on digital technologies to advance open learning initiatives online.

**Professional and Public Outreach**

These concentrations have been augmented by substantial grants from Foundations in recent years. Since 1987, the History of Science Department has received major grants from the Rockefeller Foundation and the Andrew W. Mellon Foundation totaling $1,194,000. These funds have brought 23 internationally distinguished scholars to OU for an academic year to work in the History of Science Collections and with members of the department faculty. Since 2000, the Mellon Foundation has provided $349,000, including a $300,000 endowment, to support short-term use of the History of Science Collections. Pre- and post-doctoral scholars from the United States and around the world have spent up to 8 weeks in Norman working on their own research projects with the aid of Collections materials and the expertise provided by OU faculty.

The department has also contributed to the public discussion of science, technology and medicine. It has been host to six international conferences and symposia in the history of science: a symposium on the history of science and technology in April 1969; a Centennial conference in September 1990; an international symposium on the history of medieval mathematics in March 1992; an international symposium on the medieval transmission of science in February 1993; a conference on history of biology and the history of the social sciences in April 1999; and a conference on early modern transmission of science in April 2003. To commemorate the 200th anniversary of Darwin’s birth and the 150th anniversary of the publication of the *Origin of Species*, the department organized a Presidential Dreamcourse in Spring 2009 that included distinguished speakers from the United States and abroad who examined the history of evolutionary biology and its cultural products.