

BIENNIAL REPORT OF LINDA HALL LIBRARY TRUSTS & AFFILIATE

2015 & 2016





Research libraries, long bastions of quiet contemplation, have undergone dramatic changes in the past decade. Shelves are gone, books have become bytes, and quiet can be achieved with the use of noise-cancelling headphones. In their places are collaborative workspaces, discussion pods, white boards, and robust wireless connectivity all the better to accommodate contemporary learning styles and pedagogy.

While most of these changes are unfolding at university libraries, their impact has been felt elsewhere. Despite its virtues, electronic information cannot entirely replace the printed word. Similarly, collaboration brings with it numerous benefits, while many disciplines still value the individual pursuit of knowledge and its quiet rewards. For anyone whose research requires the use of historic print materials and traditional study environments, libraries like the Linda Hall Library have become even more valuable.

With their endless shelves of books, university libraries are challenged to accommodate the changing needs of a born-digital student population.

But where they encounter challenge, the Linda Hall Library finds opportunity. Where the future of other libraries is in electronic information, the Linda Hall Library's future remains secure as a print-based library of contemporary and historic scientific literature. The Library continues to augment its print holdings with scientific serials and other research materials once held by the libraries that have had to remove them to make way for repurposed learning environments. The Linda Hall Library's retention of historic printed information will assure its continued survival and use for generations of scholars to come.

The Linda Hall Library similarly finds opportunity in a world challenged to promote science literacy among adults. Much effort is invested in preparing the next generation for life in a science and technology based society, and rightfully so. STEM education for K-12 students is essential, but so is STEM education for today's adults who must navigate an increasingly complex technology environment for which they may be less well-prepared. The Linda Hall Library's public programs offer lectures, exhibitions, and other events linking science to contemporary life, helping lifelong learners remain informed about the world around us.

Your enthusiasm, participation, and support for the challenging work we do is vital. Join us as we continue to meet the information needs of scholars and citizens alike!

Lisa M. Browar
Lisa Browar, President

In 2016, the Linda Hall Library celebrated its 70th year of serving international scholars, engineers, technologists, and the intellectually curious public. As a destination for scholars of science, engineering, technology, and their histories, as well as a venue that fosters the public's deeper understanding of science and technology, the Linda Hall Library remains constant in its commitment to acquire, maintain, and present intellectual content that supports scholarship and satisfies the thirst for knowledge.



Malachite Tazza in the Library's Main Reading Room.

CHALLENGES & OPPORTUNITIES

Disruption can be found in almost every facet of modern life, and libraries are no exception. The proliferation of electronic information that can be found anytime, anywhere, and on almost any handheld communications device has caused libraries everywhere to reappraise their traditional mission of acquiring, preserving, and making information available - "the right book, at the right time, for the right reader."

The Linda Hall Library is no exception and the pages of this report reflect the challenges and opportunities that have been met and embraced.

MISSION STATEMENT

The Linda Hall Library is a guardian of the collective intellectual heritage with regard to science, technology, and engineering disciplines; a destination for advanced research and scholarship, and a center for public education in the sciences.

Additionally, the Library's grounds are maintained as an urban arboretum that is open to the public for education and enjoyment.

TRUSTEES

- MARILYN BARTLETT HEBENSTREIT, CHAIRMAN, 2000
- JOHN A. MACDONALD, 2002
- CHARLES A. SPAULDING III, 2009
- TERRY BASSHAM, 2013
- NICHOLAS K. POWELL, 2013
- STEPHEN D. DUNN, 2014
- CHARLES S. SOSLAND, 2015

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Front Cover: Plate 60 from John Gould's *Birds of Europe*, vol. 2 (1837)
Back Cover: Tafel 64 from Ernst Haeckel's *Kunstformen der Natur* (1899)



CHALLENGE

Interpreting the Library's collections for an intellectually curious and professionally diverse audience

OPPORTUNITY

Create programs and exhibitions that will inform and entertain audiences in Kansas City and beyond



While speakers offer insights into science, engineering, technology and their histories, they also provide a look into their personal stories and insights into their works.

For example, Dr. Naoko Kurahashi Neilson offered an aside about her arrival at the South Pole to study neutrinos. She put on every piece of government-issue clothing before leaving the airplane because she had no idea what the frigid temperatures would feel like.

When comet hunter David Levy donated many of his observation logs to the Library in 2015, he was asked what he hoped patrons would learn from them. During his lecture "Writing the Same Book Over Almost 60 Years: A Record of a Nightwatchman's Journey Under the Night Sky," Levy gave the answer. He wanted to explain how he evolved as an astronomer. His talk highlighted his journey from a youngster in Canada looking at stars through his backyard telescope to becoming part of the team that discovered the Shoemaker-Levy 9 Comet.

Audiences for the Library's lectures range from science and technology professionals to individuals who possess a layperson's understanding. The challenge is to unite this disparate audience through accessible but thought-provoking programs.

The Linda Hall Library's lectures offer an intellectually curious public the chance to learn about science, engineering, and technology from people involved in a variety of endeavors. Through the Main Reading Room Lectures, Second Saturday Conversations, the annual Paul D. Bartlett, Sr. Lecture, and presentations by visiting research

fellows, Library visitors have learned about the future of self-driving cars, how bees communicate, and what it is like to spend a year in space.

Livestreaming enables those unable to attend programs in person to be entertained as well as enlightened in real-time while the lectures archived on the Library's website remain available permanently providing curricular support and learning opportunities to anyone, anywhere.

*Above: Annual Fund donor Paula Winchester takes in the *Drawn from Nature* exhibition in Spring 2016. Photo by Alicia Abla Miller. Right: Jennifer Howard - 2016 Lecture*



PROGRAMS



- FEB 14 **Geometric Puzzles** – Norton Starr
- MAR 14 **Bitcoin: What is It and Why Should I Care?** – Bryan Ballard
- MAR 19 **Ocean Exploration** – David Gallo
- APR 1 **TMI: Identity and Privacy in the Digital Age** – Edward Felten, Princeton University, Paul D. Bartlett, Sr. Lecture
- APR 11 **Sabermetrics and the Empirical Analysis of Baseball** – Daniel Mack
- APR 21 **Everest Expedition** – Bruce Johnson and Conrad Anker
- MAY 9 **A Just Machine: Alan Turing's Computer** – Perry Alexander
- MAY 14 **NASA's Asteroid Redirect Mission** – Steve Stich
- JUNE 10 **Building the Golden Gate Bridge** – Paul Giroux
- JULY 30 **Red or White: How Cabernet and Chardonnay Came to Define Wine** – Gabriella Petrick
- AUG 8 **Kansas City Millions of Years Ago: What the Rock Record Tells Us** – Richard Gentile
- SEPT 8 **Living Forms: Faust and Geometry in 20th Century Anglophone Morphology and Plant Sciences** – Andy Hahn
- SEPT 10 **Writing the Same Book Over Almost 60 Years: A Record of a Nightwatchman's Journey Under the Night Sky** – David H. Levy
- SEPT 12 **Dairy Tech** – Matt Shatto
- SEPT 21 **The Art & Science of Distillation** – Damien and Patrick Garcia
- OCT 2 **The Science of Longevity** – Colloquium
- OCT 7 **Influential Books in the Development of Arithmetic and Algebra in the 15th and 16th Centuries** – Cynthia Huffman
- OCT 10 **The Art and Science of Winemaking** – Jerry Eisterhold
- OCT 14 **The Science and Technology of Brewing German-Style Beers** – Steve Holle
- OCT 22 **How Do I Become (a Physicist)?** – Naoko Kurahashi Neilson
- OCT 22 **IceCube: Seeing the Universe in Neutrinos from the Earth's South Pole** – Naoko Kurahashi Neilson
- NOV 5 **Failure Is Not An Option** – Gene Kranz
- NOV 14 **Gallery Tour of Comet Hunter: The Observation Logs of David H. Levy**

2015

- FEB 13 **R2 Builders**
- MAR 12 **Impressions, Patterns, and Distinctive Marks: A History of Bird Field Guides** – Eric Ward
- MAR 16 **Explore & Create: From the Beginnings of Computer Games to Private Space Flight** – Richard Garriott de Cayeux
- MAR 22 **Forensic Science – The Real CSI** – Jennifer Howard
- APR 9 **Sabermetrics and the Empirical Analysis of Baseball** – Daniel Mack
- APR 14 **The Evolution of Beauty** – Richard Prum, Yale University, Paul D. Bartlett, Sr. Lecture
- APR 21 **Aviation – Flying High with Math and Science** – Austin Hunt
- APR 28 **The Unknown Copernicus: Spies, Printers, Amazons, and Body-Snatchers in an Age of Astronomical Revolution** – Karl Galle
- MAY 3 **Isambard Kingdom Brunel: A Victorian Frank Lloyd Wright** – Robert Hulse
- MAY 5 **Food Science in Action** – Sara Clark
- MAY 14 **Of Tribbles and Technology: Star Trek at 50** – Dayton Ward and Kevin Dilmore
- SEPT 8 **The Dancing Bees: Karl von Frisch and the Discovery of the Honeybee Language** – Tania Munz
- SEPT 10 **Too Much to Read: Victorian Periodicals, Bibliographical Utopianism, and the "Bad Indexer"** – James Mussell
- SEPT 22 **Rust Never Sleeps: Road Trip in Search of Solutions to America's Infrastructure Crisis** – Dan McNichol
- OCT 8 **Coffee with the Curators**
- OCT 13 **The Sky is Not the Limit: Lessons From a Year in Space** – Scott Kelly
- NOV 3 **The Future is Now: Self-Driving Vehicles are a Reality** – Maarten Sierhuis
- NOV 12 **How Do I Become (an Engineer)?** – Panel Discussion

2016



Retired NASA astronaut Scott Kelly addresses the crowd during his October 2016 talk at Unity Temple on the Plaza.



Mixing history with contemporary culture resulted in exhibitions that not only gave the public a deeper understanding of the histories of science, engineering, and technology, but allowed the Library to display its collections, highlight elements of American culture, and offer insights into the personalities of leading scientists and scholars. The results were eye-catching and informative exhibitions that commanded attention.

The Linda Hall Library's exhibitions have embraced local pre-history, space exploration and the life of a comet hunter, the history of bird illustrations and the development of the field guide, and a retrospective of one of the world's most impressive infrastructure projects. Imaginatively designed, lavishly illustrated, each exhibition showcased important selections from the Library's holdings.



In Spring 2016, the Library exhibited bird illustrations that qualify as works of art in *Drawn from Nature: Art, Science, and the Invention of the Bird Field Guide*. The exhibition highlighted the work of John Audubon, Robert Ridgway, Mark Catesby, and other illustrators who created bird guides.

CHALLENGE

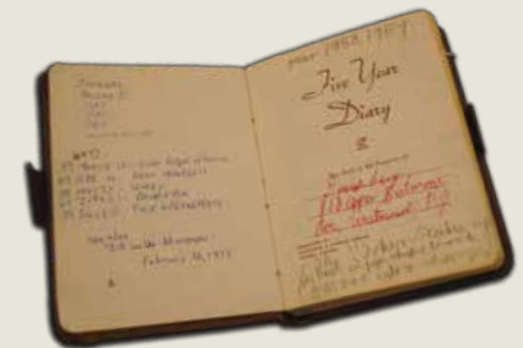
Present the breadth and depth of the Linda Hall Library's collections in visually engaging ways

OPPORTUNITY

Unite the history of science with contemporary concerns to educate and entertain a multi-generational audience



Two exhibitions had deeply personal connections with their curators. *Paleo Kansas City* told the story of prehistoric metropolitan Kansas City. Organized by guest curator and renowned fossil hunter Dr. Richard Gentile, Professor Emeritus at the University of Missouri-Kansas City, the exhibition featured prehistoric vegetation from the Paleolithic era, and fossils found by Gentile during a lifetime of collecting.



The recently donated observation logs and private journals of astronomer David Levy were the subject of an exhibition entitled, *Comet Hunter*. Levy's journals and logs trace the journey of a boy with a telescope peering at the night sky who became a seasoned astronomer.



In 1956, President Dwight D. Eisenhower signed the Federal Aid Highway Act authorizing the construction of the Interstate Highway System. Companion exhibitions celebrated the 60th anniversary of this transformative event in American transportation history.



Gas, Food, Lodging: A Cultural History of Route 66, America's Main Street, offered a nostalgic look at America's most famous two-lane highway. More than a route from Chicago to Santa Monica, Route 66, with its motor courts, neon signs, and diners, became a cultural myth before its usefulness had ended, paving our collective journey from innocence to experience.



Ribbons Across the Land: Building the U.S. Interstate Highway System, explained the construction history of the interstate highway system, and stressed the highways' importance to national defense, commerce, and the American way of life.

In an increasingly globalized society marked by rapid developments in science and technology, a better understanding of how these interventions have developed over time and have become embedded in our culture is critical. The Linda Hall Library's exceptionally rich print holdings document science, technology, and engineering from the 15th century to the present make the Library ideally suited as an international destination for advanced research and scholarship.

In 2015 and 2016, the Library's Fellowship Program again supported scholars from all over the world. Their work has led to an improved understanding of how and why science and technology have become integral to life and culture through the centuries.



Gabriella Petrick - 2015 Fellow

The visiting scholars take a deep-dive into the Library's holdings. As a by-product of their research, they provide the Library staff with additional insight about the depth and research potential of the collections, while contributing to the scholarly community of Kansas City and beyond.



Cynthia Huffman - 2015 Fellow



Karl Galle - 2016 Fellow

Karl Galle, a historian of science at the American University in Cairo, spent six months immersed in the Library's 16th century holdings for a book about the life of Nicolaus Copernicus and the influences that shaped his thoughts. One of Galle's goals was to recover the intellectual, social, and religious world inhabited by Copernicus

by studying the texts that would have influenced the astronomer and his contemporaries.

In addition to examining early modern astronomical and mathematics texts, Galle consulted the Library's collection of 15th and 16th century herbals in an effort to retrace the path of knowledge

from East to West along the same trade routes that carried plants, spices, and other commodities. These volumes contain information about medicinal plants found in the East that had become incorporated into European medicine.

Pittsburg State University mathematician Cynthia Huffman spent six weeks in 2015 consulting the Library's collection of books devoted to the history of mathematics between the late-15th century to the 19th century. Huffman subsequently published an article, "Mathematical Treasures at the Linda Hall Library," in the Mathematical Association of America's online publication, *Convergence*. The article opens with an invitation: "Imagine being able to hold the first edition of Euclid's *Elements of Geometry* (1482) in your hand – one of the first mathematics books to be printed after Gutenberg introduced printing with movable type to Europe."



"You can't use it if you can't find it," is a familiar refrain as information proliferates at astonishing rates and libraries everywhere hasten to organize and make it available for an increasingly diverse user population. During the past two years, the Linda Hall Library filled thousands of information requests; some from patrons who came face-to-face with a reference librarian, and many more from those who never set foot in the Library, or in Kansas City, for that matter.

"You can't use it if you can't find it"

Digital Projects Technician
Mike Walker scans a page spread.

The Library's ability to organize its collections for effective retrieval and use is one of its proudest accomplishments. The online catalog, available to anyone anywhere with an Internet connection, reveals vast collections of scientific journals, technical reports, and a rare book collection containing over 10,000 items documenting the history of science since the 15th century.

Many of these items have been digitized. Their electronic surrogates are available online, making a substantial portion of the Linda Hall Library's collections more accessible to researchers the world over.

With each passing year, the Library's cataloging team and digital projects staff work side by side, meeting the challenge of organizing a tsunami of information and embracing the opportunity of making it available for use.



Digital Projects Graphic Design
Technician Jon Rollins scans the
beetle for the Entomological Museum.

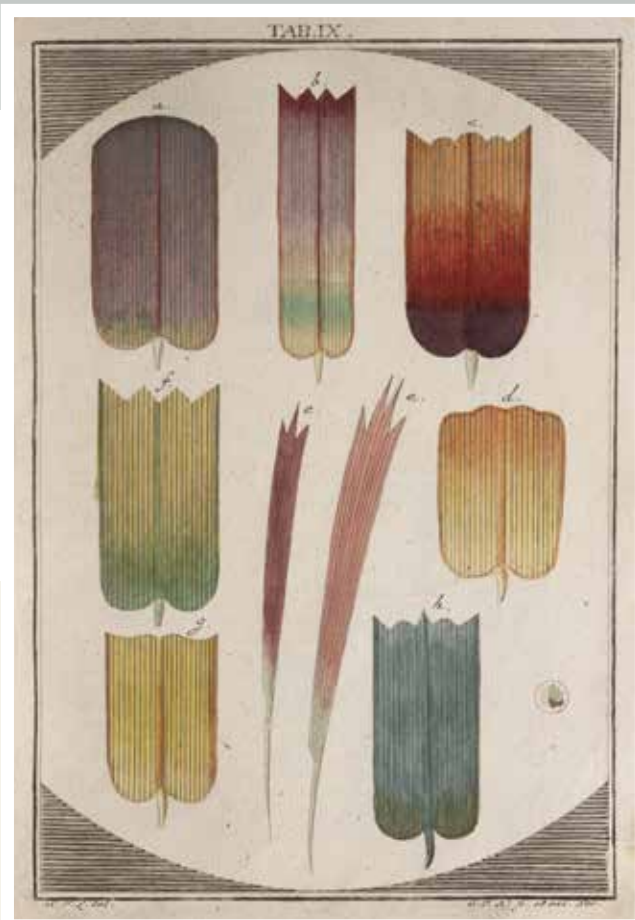
When the Library received an inquiry about a rare and infamous bug known as the *Prionus beauvoisi* (long-horned beetle), Vice President for Research and Scholarship Tania Munz, became interested. The Mississippi Entomological Museum asked for a high-definition scan of this insect as it appears in *Insectes recueillis en Afrique et en Amerique* (*Insects collected in Africa and America*) 1805, by French naturalist Ambroise Marie Francoise Palisot de Beauvais who traveled widely, from Africa to Haiti and the United States. He endured two fires, yellow fever, incarceration, banishment during the French Revolution, a Haitian slave revolt, and a pirate attack.

Munz's investigations into Beauvais' life, resulted in an article, "Beetle-Mania," appearing in the Fall 2016 edition of the Library's newsletter, *Hedgehog*.



The evolving world of libraries demands constant change driven by the gradual disappearance of print and the arrival of digital information. For many libraries, this conversion represents a challenge, but for the Linda Hall Library it represents an opportunity. Where other libraries are challenged to clear their shelves

of printed matter to make way for interactive and collaborative learning spaces, the Linda Hall Library sees the opportunity to become known as "the print library of record for science, engineering, and technology." This role has enabled the Linda Hall Library to enhance its holdings and solidify its status as a trusted print repository when offered the intellectually significant printed materials that other libraries can no longer retain.



2015

- Francis Godwin, *L'homme dans la lune* (1666)
- Robert Boyle, *Experiments and considerations about the porosity of bodies* (1684)
- Luigi Galvani, *De viribus electricitatis* (1792)
- George Nares, *Narrative of a voyage to the Polar Sea* (1878)
- Pieter Zeeman, *Researches in Magneto-optics* (1913)

Left: Tab. IX from Martin Frobenius Ledermüller's *Mikroskopische Gemüths- und Augen-Ergötzung* (1761)
Below: The Library's existing collections of journal titles, industry standards, and monographs increased significantly over the past two years through acquisition or donation, including those from the University of Vermont and Caltech.

More Than 200,000
Industrial Standards

More Than 48,000
Journal Titles

100 Journal Titles Donated
by University of Vermont

Stack of books

Stack of books

Caltech Five Tons of
Technical Reports

Stack of books

Over 500,000
Monographs

CHALLENGE

In an increasingly digital information ecosystem, remain relevant as a print-based library

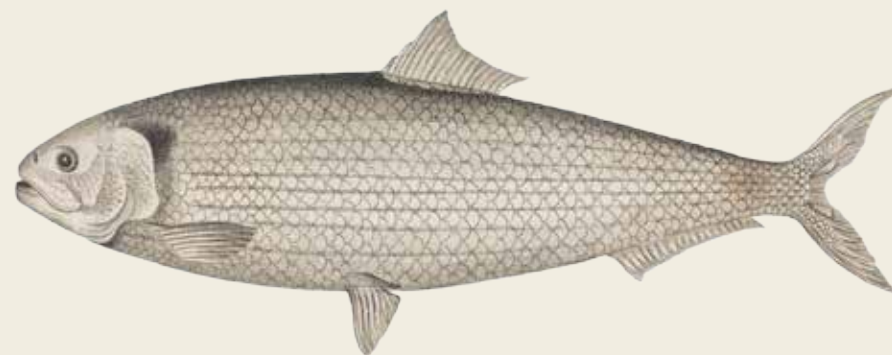
OPPORTUNITY

Preserve intellectual history as the "print library of record" for science, engineering, and technology



2016

- René Descartes, *Les Principes de la philosophie* (1647)
- Martin Frobenius Ledermüller, *Mikroskopische Gemüths- und Augen-Ergötzung* (1761)
- Charles Scammon, *The Marine Mammals of the North-Western Coast of North America* (1874)
- Ernst Haeckel, *Kunstformen der Natur* (1899-1904)
- Margaret Mee, *Flowers of the Brazilian Forests* (1968)



Above: Plate III, Fig. 1 from John Fleming's *The Philosophy of Zoology*, vol. I (1822)

Caltech Sends Five Tons of Technical Reports

In early 2016, the California Institute of Technology solved a space problem by removing a large amount of printed material from its shelves. Rather than discard more than 10,000 pounds of technical reports and other printed material, Caltech approached the Linda Hall Library whose commitment to retaining research materials in print has become widely known.



Later that year, retired NASA engineer Todd Hodges, now a consultant for NASA, needed access to engineering technical reports dating back to the 1920s while researching vertical take-off and landing aircraft designed between 1920 and 1960. Caltech informed him these printed materials had been sent to the Linda Hall Library.

Hodges wanted to review the old designs in search of inspiration to address current design challenges. After spending several days with the technical reports, he obtained digital images to share with the young designers working on the next generation of vertical takeoff and landing aircraft.

THE LINDA HALL LIBRARY FOUNDATION

On September 3, 2014, the Linda Hall Library Foundation was classified as a 501(c)(3) public charity to collaborate with the Library to produce programs, exhibitions, and related events. The Linda Hall Library Foundation enables the Library to share its resources with a broader audience through the Foundation's flexible fundraising capability.

Donors to the President's Circle and the Annual Fund provide essential support for the public programs jointly produced by the Library and the Foundation. Several local and regional corporations and foundations also

support the Linda Hall Library. In 2016, the Foundation received a sought-after grant from the Ewing Marion Kauffman Foundation in support of the 2017 programming schedule. Additional support was received from the Gridley Family Foundation.



MISSION STATEMENT

The Linda Hall Library Foundation engages in activities to promote public understanding of science, and to further scholarship in science, engineering, technology, and their histories. Its programs are designed to encourage the public, scholars, and researchers to learn, investigate, explore, and increase knowledge.

IN ADDITION TO OUR ANNUAL FUND AND MAJOR DONORS, WE WISH TO THANK THE FOLLOWING:

Bartlett and Company Grain Charitable Foundation
Black & Veatch Foundation
Burns & McDonnell Foundation
H&R Block Foundation
JE Dunn Construction
Kansas City Life
KCP&L

Ewing Marion Kauffman Foundation
David Woods Kemper Memorial Foundation
Miller Nichols Charitable Foundation
Harry Portman Charitable Trust
J.B. Reynolds Foundation
Terracon Foundation



*President's Circle
The Linda Hall Library Foundation*

Support for the Linda Hall Library Foundation means that all programs, exhibitions, and access to online programming remains free of charge to all.



Retired NASA Astronaut Scott Kelly with Mike and Millie Brown. Photo by Chris Crumb.



LINDA HALL LIBRARY
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