



Strategic Plan

Lemelson Center for the Study of Invention and Innovation

2016-2020



Smithsonian
National Museum of American History
Lemelson Center for the Study of Invention and Innovation

Dear Friend of the Lemelson Center,

It is a pleasure to share our strategic plan and to invite your involvement in our research, exhibitions, education initiatives, and public programs.

Understanding invention and innovation is more important today than ever before. We live in a period of especially rapid changes in technology, our environment, and social and economic systems. A wave of innovations in electronics, telecommunications, and information processing has led many to believe that technology is driving history. Dire forecasts warn that robots and emerging artificial intelligence threaten ever more kinds of jobs. Present approaches to economic growth raise significant environmental and health risks. Meanwhile, the complexity of technologies ranging from cell phones to large industrial systems makes them seem inscrutable and resistant to tinkering or even control.

Fortunately, we also live in an era of remarkable creativity and connectivity. By 2020, an additional five billion people will have access to information on handheld devices. International collaborations in fields as diverse as space exploration, biotechnology, and video games lead to new technologies that people transform beyond their original intended uses. Worldwide, we will have the unique opportunity to connect people, identify great ideas, and scale-up technologies that fit local and national cultures. To do so, everyone will need to be inventive. People need to feel in control of technology and find ways to participate in economic and social change.

The Lemelson Center is poised to act as an influential resource in understanding and responding to the challenges of today—and tomorrow. Using insights from historical study, we engage museum visitors in the invention and innovation process, educate children and adults through interactive exhibitions and programming, and empower people worldwide to understand and engage with complex technologies. We hold preeminent archival and artifact collections at the National Museum of American History and are building world-class expertise on inventors, innovators, and invention systems. This unique combination sets the stage for us to demystify invention, provide critical insights on the role of innovation at present, and inspire and empower people to view themselves as inventive.

In this strategic plan, we present our new vision and mission statements, and describe programs and projects we are targeting in coming years. Your advice, suggestions, and support will help make these ideas a reality.

Arthur Daemmrich
Jerome and Dorothy Lemelson Director



Vision

A world in which everyone is inventive and inspired to contribute to innovation

Mission

The Lemelson Center engages, educates, and empowers the public to participate in technological, economic, and social change. We undertake historical research, develop educational initiatives, create exhibitions, and host public programming that advance new perspectives on invention and innovation and foster interactions between the public and inventors.

Who We Are

The Lemelson Center for the Study of Invention and Innovation documents, analyzes and shares insights on inventors and their work, nurtures creativity in young people, and uses the depth of history to develop new perspectives on innovation. Drawing on and contributing to the Smithsonian Institution's unparalleled collections of artifacts and archives, the Lemelson Center's scholarship and programming advance the historical study of invention and innovation, encourage children and adults to apply their curiosity to real-life problems, and showcase the diversity of inventors who have shaped world history. Our goal is to foster greater public understanding of and critical engagement with the ways in which inventions and innovations reshape the world.

We embody a philosophy akin to that of the inventors we study by valuing creativity and embracing the potential rewards of risk-taking. In our exhibitions and programs, we seek to inform and delight audiences and convey the enthusiasm and joy that are integral to the invention process. It is our aspiration to serve as an international hub for contemporary research into invention and innovation; a central source of archives, artifacts, and work in public history; and a generator of interactive programming to inspire the next generation of inventors. While studying technology and technological systems is at the core of our work, we also seek out inventive activity in diverse, unexpected places to broaden our frame of reference and enhance public engagement.

Our History

The Lemelson Center has led the study of invention and innovation at the Smithsonian Institution since it was founded at the National Museum of American History (NMAH) in 1995 through the generous support of Jerome and Dorothy Lemelson. Among the most prolific inventors in U.S. history, Jerome Lemelson—"Jerry" to his family and friends—was awarded over 600 patents for inventions ranging from children's toys to machine vision, automatic warehousing, and data storage and retrieval systems. By the late 1980s, he had grown concerned that pop culture stars were celebrated over the accomplishments of inventors, scientists, engineers, and other innovators who should serve as role models for young people. Jerry held that creativity and invention are not only central to U.S. history, but also are the core drivers of economic growth and improvements to the quality of life. When providing initial funding for the Lemelson Center, he and Dorothy articulated a goal of improving understanding and appreciation of the fundamental role that invention plays in people's lives.

Audiences

We serve connected, yet distinct audiences in our research, educational, exhibition, and other public engagement work:

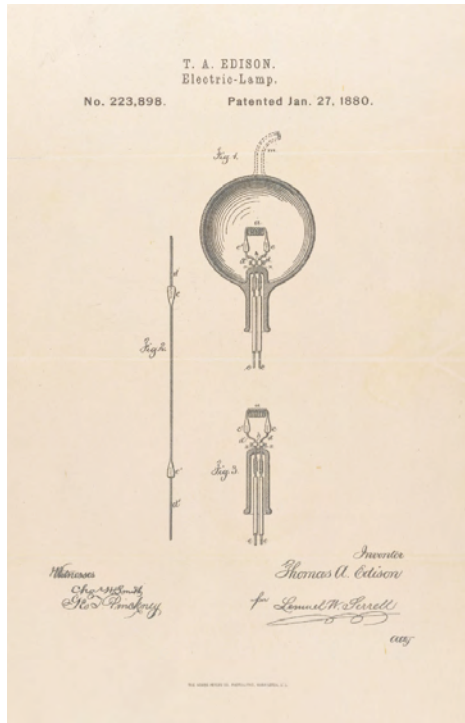
- Inventors partner with us to share their experiences through oral history interviews, donate their records to our archives, and take part in the Center’s public programs.
- Researchers, especially those interested in the history of technology, business history, economic history, and innovation studies, participate in our scholarly conferences and workshops, join us as fellows-in-residence, and delve into our collections.
- Children and families explore their inventive creativity in Spark!Lab at the NMAH and at Spark!Lab National Network sites. Activities empower young people to develop the skills and confidence they need to succeed today and in the future.
- Innovation and invention enthusiasts comb our website, listen to our podcasts, attend our public programs, visit our exhibitions, and bring their families to Spark!Lab.
- Global audiences engage with us on our digital outreach channels. Through our website and social media platforms, we connect commentary and accurate historical information on inventors and innovators with activities that illustrate the process of invention for parents and their children.

Under this strategic plan, we will initiate programs that not only strengthen and grow our current audiences but also target two new groups:

- Families in under-represented communities to participate in the invention process.
- A growing population of retirees who will attend panel discussions, lectures, and new cross-generational programming, and who will offer advice and support to the Center.

Looking Ahead

Over the course of two decades, the Lemelson Center has fostered an appreciation for the central role of invention and innovation in United States history and encouraged inventive creativity in young people. From our home within NMAH, the Lemelson Center presently delivers formative experiences to over 4 million museum visitors annually. In coming years, our scholarly work will aim to provide thought leadership to the growing interdisciplinary study of innovation and invention. We will seek new collaborations with partners across the Smithsonian Institution and other museums and research institutes to extend the reach of our programming. In addition, we will pursue greater local impact on a national scale. To do so, we will test and scale up projects that integrate otherwise separate projects in scholarly research, educational initiatives, museum exhibitions, and public engagement.



Defining Invention and Innovation

Invention and innovation have become leading buzzwords of the early 21st century. Both are used to brand products and to create hype for startup firms, but their definitions and analytical traction have become somewhat muddled.

Based on historical research and interactions with contemporary inventors and innovators, the Lemelson Center is advancing a more specific usage of the terms 'invention' and 'innovation.' To invent is to create a unique material, device, process, or method; to innovate is to answer an important customer or societal need. An invention is a way of doing something differently, while an innovation is a way of scaling up one or more inventions in a way that creates value.

Importantly, we find that invention and innovation are best understood as arranged on a continuum. Inventors and innovators range from individuals to large groups, and work in ways that vary from collaborative to competitive. Success comes from both iterative changes and risky leaps. Some innovations create positive change for everyone while others result in economic or other displacements. The acts of invention and innovation each involve creativity, but also require sustained and disciplined work. Contrary to stereotypes of the lone pioneer, the invention process includes not only the inventor but also a network of family members, collaborators, manufacturers, marketers, and consumers contributing to an invention's realization. Our research and programming consider the social and economic context of invention and innovation as integral to their success.

Strategic Commitments

We will live our mission to engage, educate, and empower people to consider themselves inventive and to participate in the innovation process through the Center's work in historical scholarship and documentation, museum exhibitions, educational initiatives, and in-person and digital engagement.

Scholarship and Documentation

Staff and scholars at the Lemelson Center facilitate the preservation of invention-oriented collections and write and publish books, journal articles, blog posts, and podcasts that interpret the history of invention and innovation. We support scholars and archivists with research funding, training opportunities, and access to our collections and expertise. We plan to further enhance awareness of the Lemelson Center's resources in the scholarly, archival, and museum communities and others who are interested in the history of invention and innovation studies. To accomplish this, we will:

- Conduct leading-edge research and write for a mix of peer-reviewed and general audience publications. We will support this work by fostering a lively intellectual community at the Smithsonian Institution and by seeking additional resources to support staff research.
- Publish one to two books annually in the *Lemelson Center Studies in Invention and Innovation* series with MIT Press, including manuscripts authored by the Center's staff.
- Identify and support the acquisition of new collections that will define the Museum as the leading repository for the records of American independent inventors, including the papers of Jerome Lemelson; archives and artifacts pertaining to women inventors, immigrant inventors, and inventors from minority backgrounds; and collections that document inventors' extended networks and the role of grants and prizes in invention and innovation.
- Establish and build visibility for the Arthur Molella Distinguished Fellowship.
- Secure additional funds for post-doctoral fellowships, research travel grants, and internship programs to increase the number and duration of awards and define the Center as the premier site for scholarly work and dynamic interactions among top scholars of invention and innovation.

Spotlight: 20 Years of Scholarly Contributions

- Annual New Perspectives on Invention and Innovation symposium
 - Academic and professional fellowships, travel to collections awards, and internship programs
 - Publications, including the *Lemelson Center Studies in Invention and Innovation* series with MIT Press and peer-reviewed and popular writing by Lemelson Center staff members
 - Modern Inventors Documentation Program, offering advice on preserving the records of invention, a database of invention-related archival holdings in North America, and an active collecting program at NMAH, with an emphasis on 20th-century independent inventors
 - In-depth workshops exploring facets of invention history, including places of invention, cultures of innovation worldwide, and the shaping of future innovators
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Exhibitions

The Jerome and Dorothy Lemelson Hall of Invention and Innovation in the National Museum of American History offers a prominent location to showcase ideas and concepts developed by the Center. Our research-based exhibitions tell interesting, surprising, and human invention stories, dispel myths, and encourage visitors to participate and see themselves as inventive. Our exhibitions will continue to make the world of inventors and their inventive processes more accessible to the general public. To accomplish this, we will:

- Update the *Inventive Minds* gallery annually, displaying first-person inventor stories and relevant archival materials and objects drawn from Lemelson Center research.
- Conduct conceptual development, fundraising, and design of a research-based, family-friendly, interactive exhibition to succeed *Places of Invention* in the Lemelson Hall by 2022. Future exhibitions will highlight the diversity of historic and living inventors, illuminate the material culture of invention and its role in everyday life, and illustrate the continuum of invention through history.
- Create additional exhibits at the National Museum of American History or other Smithsonian museums that draw upon the Lemelson Center’s programmatic focus areas.
- Develop a traveling exhibition in collaboration with the Smithsonian Institution Traveling Exhibition Service (SITES) and external stakeholders.
- Push the limits of exhibition design to advance visitors’ curiosity and active learning, and serve as a role model for other history museums.

Spotlight: 20 Years of Exhibitions

Gallery installations:

- *Invention at Play* (at NMAH and traveling)
- *Inventive Minds* (at NMAH)
- *Nobel Voices* (at NMAH and traveling)
- *Places of Invention* (at the Museum)

Smaller topical exhibitions, including:

- *Color Sells!*
 - *From Frying Pan to Flying V: The Rise of the Electric Guitar*
 - *Inventing Ourselves*
 - *Sporting Invention*
 - *Who Invented the Environment?*
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Education

The Lemelson Center's premier educational program is Spark!Lab, comprising an interactive exhibition and programming space in the NMAH, an expanding national network of partners who follow our educational model and use activities that we design, and associated seminars, training programs, and licensing arrangements. Through hands-on activities for individuals and small groups, our educational programming conveys that invention is a nonlinear process involving numerous steps from initial creative ideas to successful marketing. Activities are designed around topics that connect with museum collections and exhibitions and change on a rotating basis to encourage repeat visits. Our staff train and work with an active group of volunteers who help multiply our impact at NMAH and in the network sites. We aspire to build upon and expand the successful operations of Spark!Lab. To accomplish this, we will:

- Secure long-term funding for staffing and the continued creation of innovative hands-on activities for Spark!Lab at the NMAH. We will pursue traditional funding sources including grants and gifts, as well as earned income opportunities from licensed products, fee-based training programs, and space rentals.
- Grow the Spark!Lab National Network by opening additional locations and hosting an annual convention of the full network. We will actively pursue new funding and develop a business model beyond the current modest license fees to assure additional growth and maintenance of the network.
- Develop a research and evaluation program that analyzes Spark!Lab as a site of science, engineering, and the arts learning beyond classrooms, and disseminate findings through publications, conferences, the Lemelson Center website, and other outlets.
- Pioneer a lifelong learning initiative to serve the needs and interests of families, education professionals, and adults through hands-on invention-based programming.
- Run feasibility studies and explore business models for a mobile Spark!Lab program targeted to primary schools (during-school or after-school programs) in the Washington, D.C. region.

Spotlight: 20 Years of Educational Initiatives

- Draper Spark!Lab, our hands-on invention center at the NMAH, where children aged 6-12 and their parents or other companions join in open-ended activities that explore the invention process
 - Spark!Lab National Network, bringing the philosophy of Spark!Lab to select museums across the United States
 - Spark!Lab Invent It! Challenge, in collaboration with ePals and Cricket Media
 - Innovative Lives, connecting inventors with children and their families
 - Participation in national invention festivals and competitions, including NanoDays, Mini Urban Challenge, and National Robotics Week
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Public Engagement

Public engagement initiatives amplify the Lemelson Center’s program themes and exhibitions, connect us with targeted audiences, and leverage our collaborations with partners. During the next five years, we will establish a cohesive, strategic, and consistent schedule of programs that make use of the NMAH’s vibrant public spaces while addressing topics aligned to the Center’s research, educational, and exhibition projects. Public programs at offsite locations will establish and build upon collaborations with local and national partners and enhance our impact in the Washington, D.C. region and in communities across the nation. Social media and born digital outreach will further engage audiences at a distance. To accomplish this, we will:

- Secure dedicated resources to increase digital outreach and social media engagement that fosters learning and global dialogue about invention and innovation.
- Develop programming to amplify the *Places of Invention* exhibition, including Innovative Lives programs, film programs, and family workshops.
- Organize Inventing Green programming to connect and engage the public with inventors who are creating new products and systems that advance sustainable growth and incorporate sustainable methods in their invention process.
- Initiate the annual David H. Horowitz program on musical creativity and innovation in 2016. We will use this as a platform to explore additional programming on music and arts innovation.
- Expand the present Innoskate initiative into a national education and outreach program including festivals and other public events, oral history interviews, additions to museum collections, and a traveling exhibition that will also be on view at the NMAH.
- Seek to develop an annual innovation festival, building on the successful Impact Inventing Showcase and USPTO Innovation Festival, both held in 2015.

Spotlight: 20 Years of Public Engagement

- Innovation Festival with the U.S. Patent and Trademark Office
 - Innoskate, exploring the history of innovation in skate culture across the U.S.
 - Portrait of Invention conversations with prominent inventors
 - Behind-the-scenes tours, ranging from Museum collections not on public view to green buildings, roller coaster technology, and the design of zoo exhibitions
 - invention.si.edu website, originally launched in 1995
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Growth Plans

Financial

To build an expanded staff of historians, education and museum experts, and innovation analysts, the Lemelson Center will pursue unrestricted and endowed funds. For specific research projects, conferences, exhibitions, and other public engagement, we will seek grants, sponsorships, and other support from foundations, corporations, and individuals.

Geographic

We will develop programming at national and international locations, pursuing a strategy of broader reach through local initiatives. For the duration of the strategic plan, the Lemelson Center will follow an asset-light approach of partnering with museums, innovation hubs, and educational centers at locations across the United States and internationally, rather than building additional physical sites.

Implementation and Oversight

Responsibility for carrying out this strategic plan lies with the director and staff of the Lemelson Center. An external advisory committee provides additional program oversight, while the NMAH and the Smithsonian Institution provide fiduciary and policy governance. This plan will be reviewed annually, with a mid-course update and revisions in early 2019.

Conclusion

This strategic plan for the Lemelson Center advances a new vision statement and shifts the organization's mission toward engagement, education, and empowerment. It was developed through discussions among the Center's staff and with the input of advisors from the NMAH, other museums, inventors, academics at leading universities, and education specialists.

Our work has the potential to inspire millions of Americans and billions of people worldwide to view themselves as having inventive capacity and to build the skills and confidence needed to overcome barriers to innovation. Even as the pace of change appears to accelerate in ways that raise concerns for many people, the Lemelson Center will focus on the critical role people can play in shaping technologies, the environment, and social and economic change through their inventions and innovations.

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