



TOOLS & TECHNOLOGY Spring 2017

196 Main Street - PO Box 679 - Windsor VT 05089 - 802-674-5781 - www.americanprecision.org

Highlights from our 50th Anniversary Year

A Plan for our Next 50 Years!

In the past year, trustees and staff worked hard on a new plan. It circles back to museum founder Ed Battison's vision for strong engagement with the machine tool industry.

Plan Mission

- Improve our appeal to families to get involved.
- Create excitement about manufacturing careers.
- Educate towards the future, highlighting the connection between manufacturing and prosperity.

Plan Goals

- Expand our engagement with manufacturers.
- Assess our facility and collections – how best can we use them?
- Transform our welcome area. As soon as visitors walk in, the excitement must begin!
- Display advanced manufacturing technology alongside historical innovation throughout the exhibits.

Our signature event, the **Model Engineering Show & Maker Space** in October, drew record sponsorships and record attendance.



Photo by Lars Blackmore

Over 40 modelers, makers, and presenters made the show a grand success. We appreciate our underwriters Mascoma Savings Bank, Jane Osgood and Ted Hilles, Windsor Improvement Corporation, L.F. Trottier, Windsor Mansion Inn, Cota & Cota, and Blood's Catering.



Photo by Lars Blackmore

Thanks to the Gene Haas Foundation, our new film **American Ingenuity at American Precision Museum** launched in time for Manufacturing Week in October. The film is a call to action inviting youth to change the world through careers in manufacturing. It features Windsor students testing the underwater robot they built to help monitor the dam upstream from the museum. Below, EduFactor cameraman works with Vince Moeykens and Kip Gaddis at the museum. Watch it on our website at americanprecision.org.



The Dorothy Morris Interpretive Area, and the Margaret Rothchild Garden were rebuilt and dedicated by the Morris Family in August. Left to right: Anthony Morris, Lee Morris, and Robert E. Morris Jr.



Visitors love talking with our student interns! We enhanced the Working Machine Shop by strengthening our safety program.



In this edition...

Honor Roll of Donors
Corporate Members
Exhibits and Events
Message from the
Director and more.

Message from the Executive Director - Ann Lawless



It Has a Bearing

Engineering brings science to life. Engineering is the way we solve the world's technical problems. Just like our mechanical forebears at the Robbins & Lawrence Armory in the 1840s, engineers today build solutions to create a better world. They use technology to solve medical problems, like creating a prosthetic hand to allow a person to type or write. They design and build equipment to make solar and wind power more efficient and less costly. They create complex machines and systems to keep industry safe and clean for workers and for the communities where they reside. They are developing the technology for self-driving vehicles. Tomorrow, these autonomous vehicles will reshape our society in ways that can only be imagined.

**"Let's work together to speak up
for science and engineering in our
schools and society."**

Actionable engineering that shapes our world is built on research—in science, technology, mathematics, physics and more. The problem solvers of the future will continue to rely on the basic methods of science, to identify problems, record evidence, develop hypotheses, and test solutions.

Science and technology museums today have a big role to play in fostering scientific and engineering literacy in the communities we serve. Through exhibits and programs, we can help visitors understand the world of technology and nurture their curiosity – whether they are members of the general public or school kids developing career aspirations and setting educational goals. APM embraces our role of helping foster the next generation of problem solvers and innovators.

Today we live in a world where the importance of straightforward facts is frequently questioned. Today's world includes the possibility of declining investment in basic research that could threaten our country with an innovation deficit. We cannot afford to let this happen.

We invite our members and supporters to stand with American Precision Museum and other science and technology centers and speak up for science and engineering. The future of our country depends on us to do so.

Our Mission: To capture the imaginations of young and old with the spirit of innovation, problem solving, and design demonstrated through the dynamic story of the machines and people which form the foundation and future of the manufacturing industry in America.

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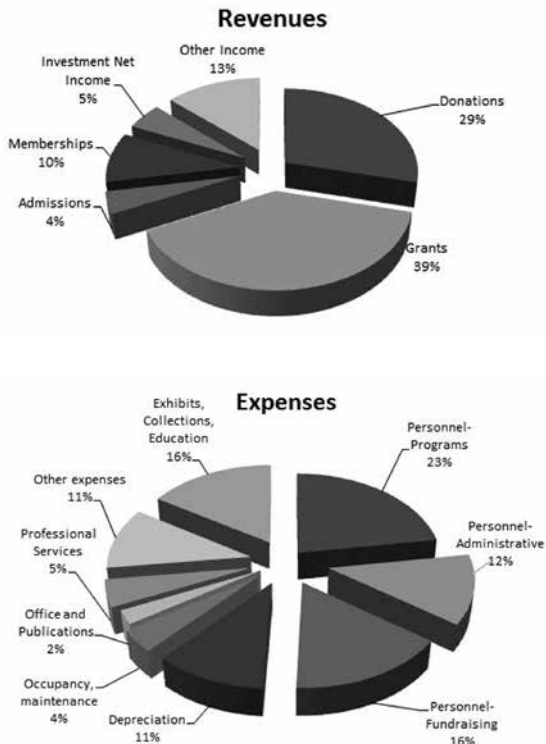
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Financial Information

The charts below reflect Revenues and Expenses for APM's fiscal year, May 1, 2015 through April 30, 2016. The condensed balance sheet is available as a PDF from the APM website's home page.



Did you know that in 2016....?

- **4,905 people visited the museum; a 9% increase over last season**
- **24 special tours and events**
- **48 new donors contributed**
- **22 new individual members joined**
- **7 new corporate members joined**



From Memorial Day to Labor Day we offer free admission to all active duty National Guard and Reserve military personnel and up to five family members.

Message from the Chair of the Board Eric Gilbertson

This year and the next several years look to be years of critical change at APM. Over the last year the American Precision Museum staff, Executive Committee and several Trustees have analyzed the past, present and future of the museum. We have concluded that the message, the exhibits and educational programs at the museum need to be more exciting for visitors—particularly younger ones. We also must better showcase current machined component manufacturing as providing good jobs. Without these changes it is clear that the ongoing viability of APM would be in doubt. The result of this thinking is the exciting new “Transformation Plan”.



The Transformation Plan sets out a new path for APM. It calls for making the museum more exciting for young people and their parents, and for educating the public about the connection between manufacturing and prosperity in the United States. This year we will make small changes to the current exhibit to make the exhibits clearer to visitors. With help from machine tool builders and support companies, APM plans to show how the innovations created at the museum's site in the 1840s transformed into the machine tool industry of today. There is already significant support from the industry for this approach.

Since its founding in 1966 APM has always enjoyed a close working relationship with machine tool businesses, and their contributions have been essential. With U.S. manufacturing productivity at an all high time high, APM has every reason to expect that the Transformation Plan will increase our support from the manufacturing industry. The museum will be a venue that shows off the continuing innovation and invention that is the heart and soul of this dynamic sector of our economy.

To keep APM operating, we have had to draw on our reserves. The staff and Executive Committee have been improving our financial management so we better understand our fiscal position and what we need to do to have a balanced budget.

(Continued on next page)



Photo above: Model Engineering Show by Lars Blackmore

We have made adjustments that should enhance the performance of our endowment and our operations.

I want to thank the Executive Committee for their creativity and effort in making APM work better and the staff for keeping things going and working hard on the transformation. Special thanks go to Lee Morris, whose family has been supporting APM since its founding, Larry Schwartz, a new Trustee, and Chris Gray for their work developing our Transformation Plan and widening the path for the machine tool industry's investment in APM.

The challenge is raising the funds to make the museum sustainable and to implement the Transformation Plan. We need new Trustees, and more individual and corporate members and supporters to help with making this happen. We welcome suggestions on all aspects of the museum.

The building, collections and history at APM are far too important to lose. To succeed we must be tied to the exciting future of manufacturing.

Sincerely,

Eric Gilbertson
Chairman, Board of Trustees

Make Your Mark on APM's Future

Consider joining
The Mill Brook Society
APM's Legacy Society

Would you like to ensure that APM will be here for future generations to enjoy? You can do that with a planned gift. The most common planned gift is a charitable bequest, naming the museum as a beneficiary. Is the museum already in your estate plans? If so, please let us know and your name will be added to our Mill Brook Society. You can remain anonymous too.

We partner with the Vermont Community Foundation on Charitable Gift Annuities and other planned gifts. If you would like to discuss planned giving options, please call Ann Lawless, Executive Director at 802-674-5781.



Sean Kersey (right) at APM's Model Engineering Show
Photo by Lars Blackmore

In Memoriam

D. Sean Kersey (April 11, 1965 - March 30, 2017)

We are sad to share the news that our Trustee Sean Kersey passed away after a battle with cancer. Residing in Lebanon, NH with his wife Michelle and two children, Sean was Manager of Facilities and Maintenance and Environmental Health and Safety at Timken Aerospace in Lebanon. Sean was first elected to the APM Board of Trustees on July 9, 2013. Shortly thereafter he was elected as Chair, and led a series of transformations beginning with the meeting of our Board of Advisors in August 2013. Sean's insight, vision, and leadership were instrumental in the revision of our mission statement and the development of our Corporate Membership program. Sean led APM to focus less on the past and more on the future of manufacturing. Sean had spark, intensity and skill, and he will be greatly missed.



Corporate Members

In the 1840s, Robbins & Lawrence created a center of excellence in hand-crafted gunsmithing, patternmaking, and precision milling. Their work in this building set the stage for future manufacturing around the world. Their business model was based in apprenticeship, sharing of skills across firms, and investment in innovation.

Our corporate members listed below carry on these deep traditions even as they innovate and look to the future. Today, advanced manufacturing leaders continue to invest in new technologies creating new manufacturing jobs that fuel our economy. They support the museum's mission to tell the story of the machines and people that form the foundation and future of manufacturing.

Leader (\$10,000 or more)



Benefactor (\$5,000)



INDEX

TRAUB



Associate (\$2,500)



Contributor (\$1,000)



Participant (\$500)



Machine Shop Participant (\$250)



2016 Report on Giving

Thank you to our many contributors who support the museum. Every gift we receive is important. The gifts listed here were received between January 1, 2016 and December 31, 2016. Your contributions come in many ways – membership, annual fund, special purpose gifts, gifts in-kind, and those made in honor of or in memory of a loved one. We also thank our volunteers who give time and talent to the museum's operations, the Board of Trustees, and working committees. We received 244 gifts to the Annual Fund and 306 members joined or renewed. We welcomed 7 new corporate members and 14 corporate members renewed. **If a donor is also a member, one of these membership abbreviations will follow his/her name: LM - Life Member; SM - Steward; PM - Patron; AM - Associate; FM - Family; and IM - Individual.** Please let us know if we have made any errors in our listing of our donors and members.

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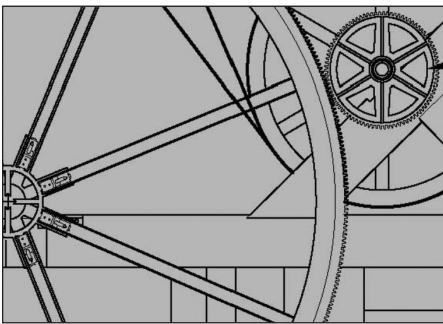
Exhibits and Events 2017

EXHIBITS

Waterwheel and Millwork

Explore a new, working three dimensional model to follow water flowing from the mill pond via a channel outside into a box flume inside to the 18 foot diameter breast-style wheel, and then back out into the brook. The wheel powered machinery on the upper floors.

Drawings explain how a massive waterwheel in the basement of this brick factory building diverted water from the Mill Brook to power machines using a complex systems of gears, shafts, and pulleys.



Shaping America

From the tool revolution of the 1800s to advanced manufacturing today, technical innovation has shaped who we are and how we live.



The Tool Revolution describes how ingenious mechanics in the 1840s forged an industrial America by creating one of the best gun-making operations in the world in Windsor.

Arming the Union

This site played a critical role in outfitting the Union Army during the Civil War. Learn how the precision tool industry served as the backbone of American industrial and military power.

Shaping Consumer Culture

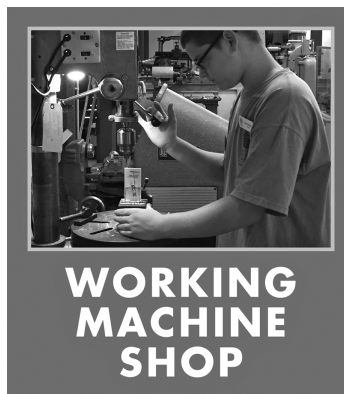
In the years following the Civil War, the tools of armory practice were put to work making consumer goods that required more accuracy.

Industrial Might

Machine tools served as the backbone of American industry used to build automobiles, airplanes, and a vast selection of consumer products.

How It's Made Today

New exhibit elements will explore modern manufacturing techniques.



Student interns work various machines in the Working Machine Shop, approximately July 3 - August 18. Call for details.



196 Main
Street
Windsor VT
05089
802-674-5781

PROGRAMS

Sunday, June 11

2:00 pm

Manufacturing Today

Join Economics Professor Dr. Marie Duggan from Keene State College to hear her perspective on manufacturing today. Most jobs in precision tools are not going overseas right now. The firms creating stable middle class jobs tend to be independent, mid-size firms. What's gone wrong and how can we nurture the independents?

Saturday, June 17

2:00 pm

Expert Insight Tour

Join museum trustee Steve Dalessio on a walk-through of the exhibit hall as he shares his knowledge about favorite machines on display, and discusses the evolution into new machines in today's manufacturing environment. He will be bringing show and tell items to share. Steve is General Manager and Partner at Lake Machine Co. Inc. in Claremont NH and enjoys sharing his passion for machining technology.

Sunday, July 9

2:00 pm

Family Maker Day: Make a Maze

Roll up your sleeves, use your ingenuity, and gather items from our stash of found materials to create a marble maze to take home.



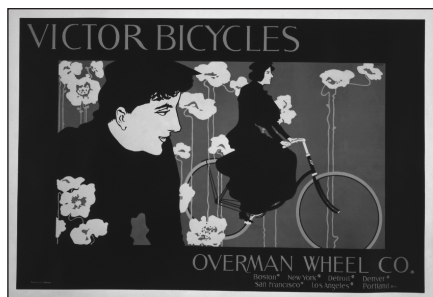
Sunday, July 23

FREE ADMISSION DAY

2:00pm

**Of Wheelmen, The New Woman,
and Good Roads: Bicycling in
Vermont, 1880-1920**

University of Vermont Professor Luis Vivanco explores the fascinating early history of the bicycle in Vermont.



During the 1890s, enthusiasm exploded statewide as bicycles became safer, women took to the wheel, roads improved, and retailers developed novel advertising techniques. Although popular interest waned, the bicycle was tied to important changes in industrial production, consumerism, road policies, gender relations, and new cultural ideas about auto-mobility and effortless speed.



Sunday, August 6

2:00pm

From Paper to Part

Join trustee Steve Dalessio as he shows several different technologies for taking a design to implementation. First, see a slide show about the design process, then follow Steve as he shows different ways of making his part using different machines in the exhibit, from the Serial #1 Bridgeport mill to a 3D printer.

Sunday, August 20

FREE ADMISSION DAY

2:00pm

**Off Target: What Hollywood,
Journalists and Shooters Get
Wrong About Guns**

This lecture and Q&A session examines how our perceptions of firearms have been distorted by media and folklore. Such distortions—about the mechanics, ease of use, and lethality of guns—have seriously hindered public discussion about the regulation of firearms. Dr. Mark Timney is an award-winning mass communications practitioner and educator with more than twenty years of professional experience in the mass media.



Saturday, September 23

10:00 am – 5:00 pm

**Smithsonian Magazine
Museum Day**

Free admission at participating museums all across the country with the Smithsonian Day pass, obtainable online or in the Smithsonian magazine.



Saturday, September 23

**Behind the Scenes Tours at 2pm
and 3pm**

Reservations required, 12 per tour, \$10 ea. Call or sign up on website. Associate Members Level and up can attend FREE with their membership. Call for details.

Admission

Members	free
Adults	\$8
Students	\$5
Kids under 6	free
Family	\$20

Special Group Rates

Call for details 802-674-5781

Hours

Open daily 10:00 am - 5:00 pm
Memorial Day weekend through
October.

Early October

Upper Valley

Manufacturing Week

APM coordinates student tours of manufacturing companies throughout the region during this week-long workforce development program.



Saturday, October 28

9:00 am – 4:00 pm

**18th Annual Model Engineering
Show & Maker Space, Windsor
Recreation Center and
the museum**

Admission to both:

\$10 for adults

\$5 for students

Visit with New England's finest model engineers, attend workshops and watch live demonstrations. Admission to this special event is not part of our membership benefits.