

The William H. Miner Agricultural Research Institute

“No other occupation is so vitally important to the human race, nor requires such a wide range of practical and technical knowledge, as farming.”

- William H. Miner, 1915



Carrying on William Miner's vision of science and technology in the service of agriculture and the environment.



Education



Research



Demonstration

2016-17 Annual Report

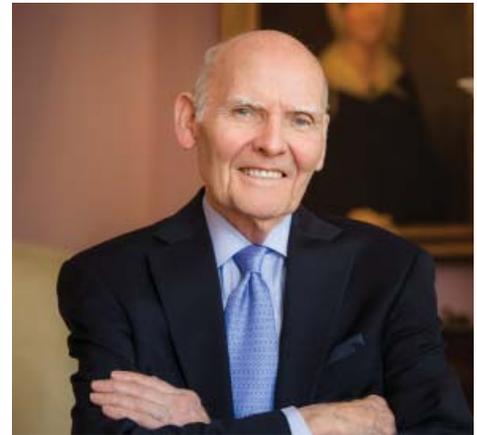
MESSAGE FROM THE CHAIR

The administration, faculty, staff, and students at the Miner Institute achieved remarkable accomplishments in 2016.

But I believe all would join me in declaring Paul Frederick's film, *Heart's Delight: The Story of William H. Miner*, the highlight of the year. This fantastic film in just 90 minutes captures the youthful dreams, the early struggles, and the final achievements of this remarkable man, who founded Heart's Delight Farm and voiced the beliefs that inspire the Miner Institute today. This film reminds us that even remarkable persons such as William Miner make mistakes, and that the key to success is to keep trying to be the best you can be.

If you follow this Miner Motto, you as well as others will be astonished at just how good your best can be.

— Dr. Joseph C. Burke
Chair, Miner Institute Board of Trustees



Paul Frederick, above, addresses the sold-out crowd before the start of the August 10, 2016 premiere of *Heart's Delight: The Story of William H. Miner* at the historic Strand Theatre in Plattsburgh.



PRESIDENT'S MESSAGE

We had an outstanding year at Miner Institute.

In 2016 we educated 57 students, wrote over one million dollars' worth of grants, and are in the midst of conducting one million dollars' worth of USDA-funded research on cow well-being and productivity. Over 4,200 people come through our stone gates, and we demonstrated best management practices as evidenced by the continued high performance of our dairy herd. Our equine program hosted 5 major events that attracted over 200 attendees. We conducted more than 42 programs and events highlighted by an Open House that attracted 700 people! And, the premier of the documentary *Heart's Delight: The Story of William H. Miner* packed the Strand Theatre in downtown Plattsburgh.



In 2016 we published 50 research and outreach articles, and delivered 79 industry and research presentations. This is a tremendous educational footprint for a small staff. We collaborated with fellow agricultural scientists in the US, Mexico, Canada, Spain, France, Japan, The Netherlands, Sweden, and Italy.

In 2017 we will continue our Agriculture in Society Speaker series, strengthen the Center of Forage Excellence, augment our milk analysis initiative, and expand our work in nutrient management and tile drainage, just to name a few activities.

Over time, our staff and graduates of our research and educational programs have helped to shape the dairy industry – and that is the truest indicator of our success.

There is much more that we have planned – so if you have questions about the range of Miner Institute programs – research, education, and demonstration – please feel free to contact us. As always, if you find yourself in the beautiful North Country of New York State, please stop in and experience for yourself the outstanding facilities, grounds, programs, and staff of Miner Institute.

— Dr. Rick Grant
President, Miner Institute

EDUCATION

In 2016, 57 students participated in our educational programs. This includes two Advanced Dairy Management students; 12 summer experience students; 31 Applied Environmental Science students; five year-long interns who have finished their undergraduate degrees; six graduate students; and one post-doctoral researcher.

To learn more about our education programs visit whminer.org/education

Advanced Dairy Management Program

The Advanced Dairy Management program, a 15-credit course is a combination of 5 classes offered at Miner Institute. The course is designed to help meet the changing needs and challenges of the dairy industry. The dairy industry today requires greater technical education and knowledge, is operated on borrowed money for expansion to stay competitive, resulting in market forces that demand educational programs in dairy production to remain relevant to the industry. Training leaders of the future is an important part of what we do in our education programming.

In 2016, the two students enrolled in our program. Michael from the University of Vermont and Victoria from the University of Connecticut.



From L-R: Michael Ingwersen and Victoria Vendetta.

“The ADM program was instrumental in helping me build a strong background in all aspects of dairying and gave me the ability to apply my knowledge to practical, on-farm situations. This, along with the professional and consulting skills I’ve gained through the experience, will give me an advantage as I work within the industry and pursue a career as a veterinarian.”

— 2016 student testimonial

FLANAGAN SCHOLAR EMMA DUFFY

A \$1.3 million donation from the late Stephen Flanagan in 2015 established a scholarship fund to help support Miner Institute’s education programs. The scholarship is named after Mr. Flanagan and his parents, Stephen S. Flanagan and Frances B. Flanagan. In 2016, dairy intern Emma Duffy was awarded the first Flanagan scholarship. Moving forward, we hope to award two recipients each year.

Stephen Flanagan was a lifelong farmer from Plattsburgh, NY who wanted to ensure that deserving young people would have an opportunity to study the science of food production and enjoy farming as much as he had.

Emma grew up just outside of Boston, MA and graduated from the University of Vermont with a degree in animal science. She is enjoying the opportunity to learn and work at Miner Institute. She started her year-long post in January 2016.



Summer Experience Programs

The summer experience programs offer students a 13-week paid internship focused on either dairy farm management, agricultural research, or equine management. Students from around the country apply for the highly-competitive internships.

In 2016, we welcomed 12 students from a multitude of universities. Participating in the Summer Experience in Equine Management were Sarah Patton from Pennsylvania State University; Shyanne Koehler from Truman State University; Kathryn Domijan from the University of Vermont; Raven Goller-Brown from the University of Tennessee-Knoxville; and Lindsey Bjorgan from North Dakota State University. Participating in the Summer Experience in Farm Management were Sara McNamara from the University of British Columbia; Nellie Boyd from the State University of New York at Cobleskill; Katherine Wippler from the University of Minnesota Twin Cities; and Brittany Webb from The Ohio State University. Participating in the Summer Experience in Agricultural Research were Danielle Harris from Cornell University; Victoria Couture from Eastern Kentucky University; and Casey Havekes from Dalhousie University.



Back Row L to R: Dani Harris, Sarah Patton, Sara McNamara, Shyanne Koehler, Kathryn Domijan, Raven Goller-Brown, Lindsey Bjorgan. **Front Row L to R:** Nellie Boyd, Katherine Wippler, Brittany Webb, Tori Couture, Casey Havekes.

“The program was very educational, I was blown away by how much I learned and how focused it was on each student’s individual interests. All the staff are so helpful and very quick to lend a hand, overall the environment at Miner Institute was so positive and the experience was very enriching!”

— 2016 student testimonial

Applied Environmental Science Program

The Applied Environmental Science Program features courses taught on a full-day basis; the format allows integration of theory developed in lectures with hands-on experience in indoor and outdoor labs dealing with soil, water, forestry, and the agriculture-environment interface.

Courses offered as part of the 2016 program were Forest Ecology and Management with Dr. Kinga Stryszowska; Agriculture and the Environment with Stephen Kramer; Water Quality and Modeling with Dr. Robert Fuller; Wetland Ecology and Management with Dr. Kinga Stryszowska ; Soil Science with Dr. Robert Fuller, and Wildlife Ecology and Management with Dr. Danielle Garneau, which was offered on campus in 2016.



Back Row L to R: Dr. Kinga Stryszowska; Dr. Edwin Romanowicz; Dr. Robert Fuller; Stephen Kramer; and Dr. Danielle Garneau.
Front Row L to R: Rosemary Trahan; Tom Niekrewicz; Chad Hammer; Erik Gaster; Connor Ramsdell; and Jennifer Scuderi.

“The AESP program gave me hands on experiences and opportunities to learn more about my field and all that it has to offer. The AESP has provided me a window to better explore and apply myself to various jobs in the market.”

— 2016 student testimonial

RESEARCH

William Miner's vision for Heart's Delight Farm in 1928 was to provide "opportunities ...for experimental and research work in order that it may serve to advance the science of agriculture." Today, Miner Institute proudly carries on his noble mission. Our highly-regarded professional staff, exceptional technical staff and well-managed dairy herd and crop program combine to support a unique research model focusing on the interface of crops, animals and nutrient management. The results for most of the research conducted by Miner Institute are reported to the public through scientific meetings and journals or through the monthly *Farm Report* available on our website at whminer.org.



In 2016, Miner Institute conducted more than 20 research projects. In addition to dairy nutrition trials, several studies were conducted that evaluated the impact of management practices on animal well-being. Ph.D. candidate, Mackenzie Campbell (Miner Institute-University of Vermont), evaluated the effects of stocking density and feed availability on performance and behavior of high producing dairy cows. Feeding strategies for calves housed in hutches during the summer were assessed to determine their impact on calf growth and health. In addition, cameras and temperature loggers were used to determine if heat stress affected calf behavior. The performance and behavior of lactating dairy cows housed in pens with different types of heat abatement systems were monitored over the course of the summer to determine if animal well-being could be enhanced with improved cooling systems. All of these projects have emphasized the importance and value of animal comfort on farm profitability.

Miner Institute has expanded its research scope in recent years to include the use of mid-infrared technology to analyze milk and using the information generated from this analysis to determine factors that influence milk composition and animal health. Research conducted as a collaboration between Miner Institute, Cornell University and the St. Albans Cooperative Creamery (St. Albans, VT) was published in the October 2016 *Journal of Dairy Science*. The article entitled "Management, nutrition, and lactation performance are related to bulk tank milk de novo fatty acid concentration on northeastern US dairy farms" was selected for the prestigious, "Editor's Choice" and was featured prominently on the journal's homepage.

Environmental concerns about the impact of nutrient loss of phosphorus and nitrogen from tile-drained fields on the Lake Champlain watershed have been a focus of several research projects conducted at Miner Institute over the last few years. Through funding support from NRCS, Lake Champlain Basin Program and the Northern NY Agricultural Development Program, fields have been equipped with autosamplers and instrumentation that measures waterflow from surface and sub-surface (tile) runoff which provides a comprehensive understanding of pathways for nutrient loss. This research is critical for establishing best management practices for farmers to retain these valuable nutrients in their fields. In addition, regulatory agencies and legislative bodies are using this information to better understand the complicated dynamics of nutrient flow in fields as they create laws and rules that regulate agricultural practices to improve water quality.



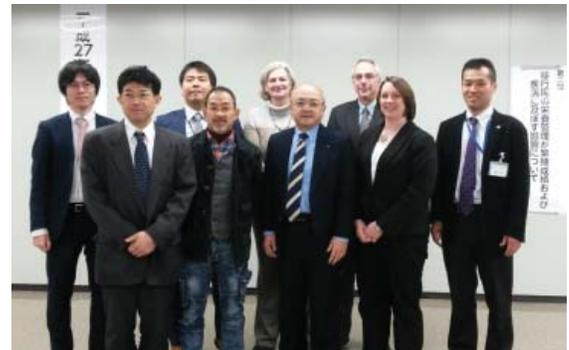
PROJECTS FUNDED IN 2016

Title	Project Support
Agronomic and forage quality characteristics of brown midrib (BMR) and non-BMR corn silage hybrids grown in Northern New York-Year 2	Northern New York Agricultural Development Program
Quantifying Long-Term Agronomic and Water Quality Impacts of Tile-Drainage in Northern New York	Northern New York Agricultural Development Program
Assessing agronomic and environmental aspects of tile drainage in the northern New York region	Northern New York Agricultural Development Program
Evaluation of Powdered Teat Dip Post Milking Under Cold Weather Conditions in Northern New York	Northern New York Agricultural Development Program
Double Cropping with Cereal Rye and Corn Silage: Impacts on Nutrient Efficiency and Forage Production	Northern New York Agricultural Development Program
The effectiveness of heat stress abatement systems on performance, behavior and lameness of lactating dairy cows in Northern New York	Northern New York Agricultural Development Program
Effects of feeding milk replacer with increased fat on intake and performance of heat-stressed calves in Northern New York	Northern New York Agricultural Development Program
Evaluating the interaction of stocking density and feeding management on the behavior, physiology, rumen health of lactating dairy cows	USDA-AFRI
Determination of the bioavailability of lysine in a rumen-protected lysine product exposed to TMR using the in vivo plasma lysine response method	Ajinomoto Co., Inc.
Development of Technologies to Reduce Labor and Improve Cow Health and Longevity: Unique Milk Analyses, Modeling, and Applications	Zen-Noh
Analysis of Japanese forage for uNDF profile	Zen-Noh
Edge of field monitoring	USDA-NRCS
Adapt-N and Soil Health Tools for Precision Management in Corn Production	New York Farm Viability Institute/Cornell University
The effect of Diamond V XP supplementation in diets for mid-lactation Holstein cows on lactation performance and feed efficiency	Diamond V

* Additional projects were conducted confidentially evaluating pre-commercialized products.

ZEN-NOH COLLABORATION REACHES 20-YEAR MILESTONE

In January, Miner Institute celebrated more than 20 years of collaboration with Zen-Noh, National Federation of Agricultural Cooperative Associations at our annual meeting in Tokyo, Japan. The relationship began when Dr. Charlie Sniffen was president of Miner Institute in the mid-1990s when Miner Institute hosted the first of many visiting scientists from Zen-Noh which launched our research partnership. Japan's primary agricultural region – Hokkaido – has similar growing conditions to Chazy and Miner Institute's focus on dairy nutrition and management made the collaboration a good fit. Over the years, Zen-Noh has supported research in many areas of dairy cattle production with a focus on nutrition. This research has resulted in the publication and presentation of more than 40 abstracts and peer reviewed journal articles. Supplemental educational tools developed for use by Zen-Noh staff in Japan have also been useful guides for Miner Institute's educational programs as well.



Miner Institute staff joined past Zen-Noh visiting scientists at a Japanese dairy producer's meeting in Japan in January 2016.

Front L to R: Tsuguyuki Nakao, Shiro Miyoshi, Koichiro Uchida, Heather Dann and Kazumasa Fujita
Back L to R: Yoritaka Koba, Ryo Suzuki, Katie Ballard and Rick Grant.



Pictured left: Kyohei Ishida, visiting scientist from Zen-Noh, stands near a Miho Tomita block print of a Holstein cow that was donated to Miner Institute from Zen-Noh in recognition of 20 years of research collaboration.

DAIRY

The Miner Institute dairy herd finished 2016 with 30,118 pounds of milk, 4.2% butter fat, and 3.2% protein. Those components accounted for 82% of our 2016 milk income. The average milk price for the year was a little above \$16.00 per hundredweight, which was down \$2 from 2015 and \$8 from the high in 2014.

In August of 2015 we stopped enrolling new cows on rbST and in January 2016, we stopped completely. By making several management changes we were able to maintain milk production going into 2016. One of the changes was to our reproduction program: decreasing the voluntary waiting period to get cows bred back sooner has increased our current pregnancy rate to 29%. We also put up excellent forages in 2015 that were fed out in 2016; the silage was higher in starch and starch digestibility compared to the previous year. Also in 2015 we were able to separate out the high quality hay crop silage at harvest time, allowing us to maximize the percentage of forage in our diets.

Multiple research projects requiring feed and dietary changes and pen moves were conducted again this year. Fulfilling our mission of education, research, and demonstration is a challenge that certainly sets us apart from average dairy farms. We rely on a knowledgeable and flexible dairy and crops staff to meet our goals and maintain our successful dairy program.

Our milking herd has grown to 435 cows with total animal numbers climbing to 835. Cropping conditions were challenging in 2015 due to heavy rains in late spring that made it difficult to get corn planted. Hay yields were good due in part to the plentiful rain. In 2016, however, we lacked rain, though were fortunate not to experience the severe drought conditions that other areas of New York State had to contend with. We grew 300 acres of alfalfa-grass, 231 acres of all grass, and 443 acres of corn in 2016. We also cleared and tilled 14 acres of land and will target another section for 2017.

We have turned loose another fantastic year-long intern, Emma Duffy, who will be going back home near Boston to work on a small dairy farm that bottles their own milk and sells the milk locally.

Also, four summer students worked alongside our farm staff: Sara McNamara, Nellie Boyd, Katherine Wippler, and Brittany Webb. Students are guided by our staff, learning how to milk cows, feed calves, and maintain a healthy herd. The field crops staff worked with the students teaching them about growing and harvesting crops – everything from picking rocks and preparing the ground to mowing, merging, and chopping hay crop silage. Many of these students have never driven a tractor before, so they gain practical, hands-on experience in how a modern production dairy farm operates. Most of these interns go on to work in the dairy industry in some capacity. Students train an animal for showing at our local fair, which is usually the highlight of the summer. We also conduct some farm tours to expose them to different ways of farming.

Overall, it was another highly successful year for the dairy operations at Miner Institute.



EQUINE

The year 2016 was a roller coaster of highs and lows for the Heart's Delight Morgan Horse herd. HD Philadelphia continued her winning ways beginning in April winning easily at an Arena Driving Trial in New Hampshire with a student whip and ending as the Reserve Champion Carriage Horse at the New York State Morgan Horse Society's Regional Championship Show with Karen Lassell at the lines. All four foals arrived without incident: HD Rochester (Canon x Sugarlane Dominique), a handsome chestnut colt; HD Times Square (Townshend Rob the Wave x HD Valhalla), a bay colt [photo at right]; HD Liberty (Canon x HD Massena), a bay filly and our second-ever successful embryo transfer foal; and finally, HD Springfield (UVM Springfield x Stonecroft Duece's Wild), a striking dark bay colt was the result of a frozen semen breeding. We're holding off a little longer on registering HD Springfield to let him grow up a bit before officially granting him the name of his legendary sire, but either way "Monty" is a special colt for all involved.



With the help of our foaling camera system, the Summer Experience in Equine Management students were able to catch all four mares giving birth, an amazing part of the equine program. One week after HD Valhalla's colt arrived, it was our embryo recipient mare, Spring's National Velvet's turn. HD Liberty "Belle" was just standing to nurse in the wee hours of the morning when HD Valhalla began to show signs of colic across the aisle. Despite getting "Hallie" and her colt stabilized and to the surgical clinic as quickly as possible, it was discovered that due to a strangulating lipoma, recovery from surgery and the chances of a healthy life were very slim. We made the hard decision to humanely euthanize her, but put our grief on hold to focus on getting her orphaned colt "Peanut" cared for. With guidance from the veterinarians, students, and community support, Peanut received around the clock care while we used a drug protocol to bring another mare into milk. Nine days after losing Hallie, UVM Kimberly accepted Peanut as her own foal bringing relief to us all.



Embryo-transfer foal HD Liberty (Canon x HD Massena) with her surrogate dam, Spring's National Velvet.

Sugarlane Dominique is bred to our senior stallion, Townshend Rob The Wave, for a much-anticipated foal in May 2017. "Nique" has been a wonderful producer for us; her 2015 gelding by Canon, HD Kingston was sold to become the next Western Pleasure mount for his new owner in Berwick, ME. The American Morgan Horse Association promotes the Morgan as the "horse that chooses you"; HD Mexico (Legacy's Viking x UVM Valkyrie) a 7-year-old mare most certainly did that and she chose well in a past equine intern.



Katie Ballard (far left) and Karen Lassell (far right) are joined by numerous Miner Institute alumnae and Lisa Kennedy (center) owner of Legacy's Viking as the beloved stallion was inducted into the Show Horse Hall of Fame. Interns from L to R: Kristen Anderson (2015), Shannon Heibeck (2016), Lynne Commaille Knight (2006), Claire Gebben (2008), Jessica Hoffman (2001), and Lisa Imperato (2003).

Finally, 2016 found a reunion in Boston, MA of many past year-long equine interns at the American Morgan Horse Association's Annual Convention. Legacy's Viking, a stallion that stood at Miner from retirement to his death, was inducted into the Show Horse Hall of Fame. His career spanned almost 20 years with successes too numerous to count, but for us at Miner, he produced several foals and maybe more importantly left a legacy of friends connected by this amazing horse.

2016 YEAR IN REVIEW

In 2016, we hosted over 40 educational, research, and community events that attracted more than 4,200 visitors. Here are some of the highlights:

JANUARY

- Hosted two Cornell Cooperative Extension dairy meetings.
- The annual Cornell Maple School attracted 85 attendees.
- The 17th annual Advanced Dairy Management semester started.

FEBRUARY

- Hosted the annual 4H Horse Bowl and Hippology event for youth with about 80 youngsters. Equine Manager Karen Lassell and year-long intern Shannon Heibeck were judges for the event.
- The annual Corn Congress meeting attracted 80 attendees.
- Hosted a meeting for the Northern NY Ag Development Program with about 40 participants.
- Hosted the Chazy Girl Scouts for a tour with 14 scouts.

MARCH

- Our annual equine seminar, EquiDay, attracted 85 attendees.
- Hosted USDA Dairy 2050 Dairy Sustainability Work Group for the fourth year.
- Hosted the NY State Department of Ag and Markets Vet and Vet Tech Training with 35 attendees.
- Hosted a group of 15 local high school students on a tour of the dairy facility.
- Represented Miner Institute in New York City as one of the 100 dairy farmers who participated in the Cabot Gratitude Tour passing out cheese samples around the city.

APRIL

- Hosted a group of 8 SUNY Plattsburgh students from an environmental conservation class on a tour of the dairy and horse barns.
- Hosted Dr. Bruce Chassy as the speaker for an Agriculture in Society talk titled The Fight for the Future of Food: Untangling the Science & Rhetoric with 100 attendees.

MAY

- Hosted an Equine Podiatry Clinic with Dr. Sammy Pittman with 30 attendees.
- Hosted the Fourth Annual Strides for James charitable 5K/10K race. More than 200 runners participated.
- Hosted 18 high school students studying animal science at CV-TEC for a tour of the dairy and horse barns.
- Welcomed 12 students for the summer experience internship programs.

JUNE

- Hosted a Myler Bit Clinic with about 30 participants.
- Participated in the annual Museum Days event with around 100 visitors to the Heritage Exhibit over the course of the weekend.
- Hosted an Institute Open House that attracted more than 700 people.
- Hosted more than 600 regional fifth grade students over three days for our annual Farm Days for Fifth Graders event.

JULY

- Hosted a tour of 14 Japanese dairy farmers and representatives from Zen-Noh.
- Hosted the Adirondack Mountain Club for a tour of the Heritage Exhibit and barns.

AUGUST

- Premiered the William Miner documentary *Heart's Delight: The Story of William H. Miner* at the Strand Theatre in Plattsburgh.
- Hosted a Northeast Dairy Producers Meeting.
- The 44th semester of the Applied Environmental Science Program started.

SEPTEMBER

- Hosted a tour with 17 members of Zinpro.
- Hosted a meeting with 10 people from Papillon Agricultural Company.

OCTOBER

- Hosted 35 people from Dairy One for a technical training meeting.
- Celebrated William Miner's birthday with Chazy Central Rural School kindergarteners and first graders.
- Played a supporting role in the Chazy Central Rural School 100 Years Celebration.

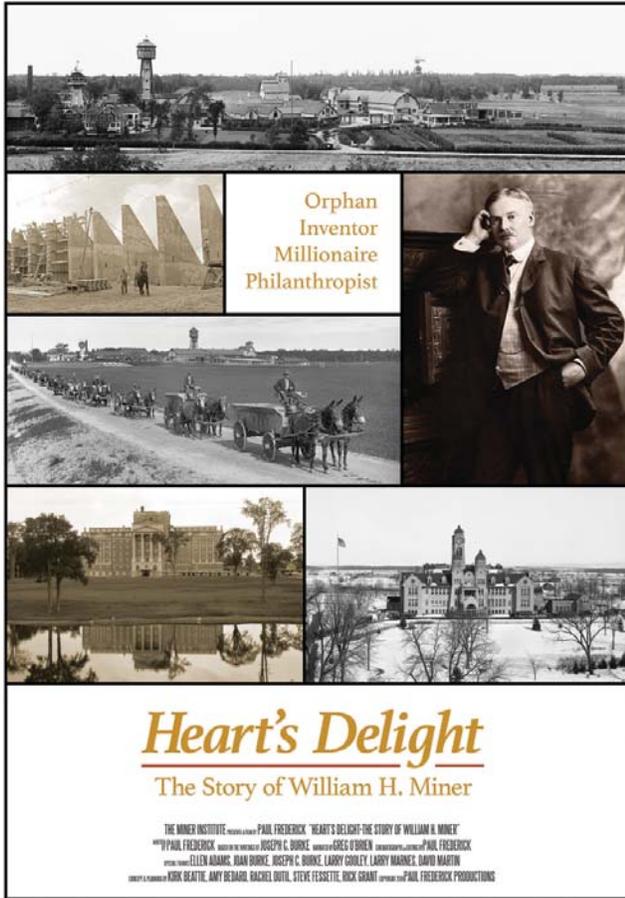
NOVEMBER

- Hosted a tour with 12 members of the Junior Holstein Club of Otsego, Herkimer, and Montgomery Counties.
- Hosted the Cornell Feed Dealer Meeting with 35 attendees.
- Hosted the annual Youth EquiDay event with 75 attendees.

DECEMBER

- The annual Dairy Day meeting attracted 140 attendees.

2016 ACCOMPLISHMENTS



In August, *Heart's Delight: The Story of William H. Miner* premiered to a sold-out crowd of nearly 900 at the historic Strand Theatre in downtown Plattsburgh. The 90-minute documentary is by Paul Frederick, based on the writings of Joseph C. Burke and narrated by Greg O'Brien.

The documentary chronicles the life and legacy of one of the most notable North Country figures. William Miner was an orphan, an inventor, an entrepreneur, a farmer, a millionaire, and the greatest philanthropist the North Country has ever known.

William Miner's ambitious pursuits included the development of Heart's Delight Farm, which had 300 buildings and employed 800 workers on 15,000 acres. He founded a railroad appliance company that is still in operation today in Chicago. He built the Chazy Central Rural School, the first centralized school district in NY State, and the Physicians Hospital. More than 85 years after his death, the North Country still benefits from his generosity.



June 25th Open House

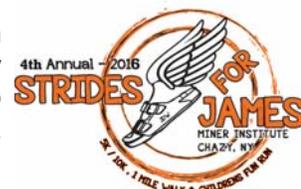


The day featured 85-degree sunny skies; wagon rides around the farm; an equine-themed photo booth and a kiss a Morgan station; a calf display; a video of a cow having a calf; the ability to watch our Holsteins being milked; a field equipment display; a cannulated cow and research technology display; maple creamies; and an equine demonstration. The event attracted around 700 visitors, many of whom had not visited the Institute before.

COMMUNITY CONTRIBUTIONS

Strides for James

In May, the Institute once again hosted the *Strides for James* charity run, a 5K/10K/fun run that raises funds for the James Wilson Memorial Scholarship at Clinton Community College. The scholarship provides an opportunity to channel James' giving spirit and help others. James Wilson was an avid outdoorsman with a kind heart who was killed in a motorcycle accident in 2012. More than 200 runners and about 300 total people attended this event at the Institute. We will host the 5th Annual Strides for James May 13, 2017.



Rotary Bed Race

Miner Institute was thrilled to participate in the 7th Annual Rotary Club of Plattsburgh Bed Race on September 10. The event takes place on City Hall Place as part of the Battle of Plattsburgh events. Miner Institute's team, *Miner Threat*, included Eric Young, Stephen Kramer, Keegan Griffith, Kyohei Ishida, and Emma Duffy. Team alternates were Heather Dann and Rachel Dutil. The team won two of three races and ended in the top 8 of 32 teams. A good time was had, for a great cause, and we will be back and even more ready in 2017!



Team Building - Bikes for foster children

At our December staff meeting, our staff put together two 20-inch bicycles and two motorized ride-on toys for kids. It was a great experience for our staff for a great cause. We worked with the United Way of the Adirondack Region to help us place the toys with families in need in time for Christmas. United Way partnered with Clinton County Department of Social Services to identify foster families to donate the toys to.

"It is nothing short of remarkable that Miner Institute's employees coordinated with the United Way to find deserving children and resources for those less fortunate children who are spending their first Christmas outside of their home, more so now in such trying economic and social times," wrote Christine Peters, Director of Legal and Social Services at the Clinton County Department of Social Services in a letter of thanks to Miner Institute.



OUTREACH

In 2016, we sent out 10 press releases which resulted in more than 25 news stories. Additionally, a number of articles from our *Farm Report* and *Stable Sheet* newsletters were reprinted in other industry publications.

- In May, Champlain Valley Technical Education Center (CV-TEC) recognized Miner Institute for continued support of the forestry program.
- A webinar presented by Miner Institute staff, *Milking Ration Fiber for all it's Worth* was awarded a first place prize in the Webinar Division of the Digital and Social Media Category of a 2016 competition held by the American Agricultural Editors Association. The webinar was presented in August 2015.
- A Miner Institute-authored article, *Management, nutrition, and lactation performance are related to bulk tank milk de novo fatty acid concentration on northeastern US dairy farms*, which was printed in the October 2016 issue of the *Journal of Dairy Science* was selected as an Editor's Choice by editor-in-chief Matt Lucy. The article was featured prominently on the journal's website and was also included in the Editor's Choice Collection, which is freely accessible to everyone, regardless of whether they subscribe to the *Journal of Dairy Science*.

Farm Report and Stable Sheet Newsletters



The Miner Institute *Farm Report* is a monthly dairy newsletter sent to more than 2000 subscribers worldwide. It is written primarily for farmers and other agricultural professionals in the Northeastern U.S. and Eastern Canada. Most articles deal with dairy and crops topics, but also included are articles dealing with environmental issues and global agriculture as well as editorial commentary. Articles are frequently re-printed in other industry publications.

The *Stable Sheet* is a semi-annual newsletter for both equine owners and industry professionals. It provides practical information on all aspects of horse care, from breeding to training to health and safety. We also share challenges we've faced and offer insight on how to prevent the same from happening to others. The *Stable Sheet* also promotes equine events sponsored by Miner Institute and the University of Vermont.

The *Farm Report* and *Stable Sheet* can be found online at www.whminer.org

Farm Days for Fifth Graders & High School Chemistry Program



The annual Farm Days for Fifth Graders event began in 1982. Our mission in this program is to help students to become more aware of agriculture in our community and the impact on our daily lives. In 2016, we had nearly 600 fifth grade students participate.

Area high school juniors and seniors take part in four "hands-on" learning labs dealing with water quality and pollution from various sources as part of our High School Chemistry Program. The goal of the program is to teach students to engage in math and science rather than be afraid of it by doing activities rather than having them explained. In 2016, 62 students from two area schools participated.



COLLABORATION & SUPPORT

COLLABORATORS

- Eileen B. Allen, GISP
SUNY Plattsburgh
- Marie Audet
Blue Spruce Farms
- Deb Balliet
Saratoga BackCountry Horsemen
- Dr. Dave Barbano
Cornell University
- Liz Bayne
Yankee Farm Credit
- Les Berghorn
Afgritech
- Dr. Gary Bergstrom
Cornell University
- Dr. Sid Bosworth
University of Vermont
- Dr. Jonathan Bradley
University of Missouri
- Mary Breyette
CCE, Clinton County
- Dr. John Brouillette
Mycogen Seeds
- Robert Brower
NYS SWCC – Lake Champlain
- Dr. Barbara Cade-Menun
Agriculture & Agri-Food Canada
- Dr. Larry Chase
Cornell University
- Dr. Bruce Chassy
University of IL Urbana-Champaign
- Lallemand Animal Nutrition
- Linda Corey
Fairfax, VT
- Dr. Bill Cox
Cornell University
- Chuck Custeau
Yankee Farm Credit
- Karl Czymmek
Cornell Pro Dairy
- Dr. Josie Davis
University of Vermont
- Dr. Mike Davis
Cornell University
- Steve Davis
University of Vermont
Morgan Horse Farm
- Anita Deming
CCE, Essex County
- Brett Denny
Vermont DHIA
- Dr. Joseph DePinto
Limnotech
- Dr. Pascal Drouin
Lallemand
- Dr. Jen Dulin
Vermont Large Animal Clinic
- Jerry Emerich
Select Sire Power
- Hillary Fay
New England 4H Judge
- Lindsay Ferlito
CCE, Regional Dairy Specialist
- Anita Figueras
CCE, St. Lawrence County
- Dr. Sally Flis
Dairy One
- Dr. Andrea Formigoni
University of Bologna
- Claude Fortin
Mycogen Seeds
- Dr. Dave Franzi
SUNY Plattsburgh
- Paul Frederick
Paul Frederick Productions
- Dr. Paul Fricke
University of Wisconsin-Madison
- Dr. Robert Fuller
SUNY Plattsburgh
- Dr. Danielle Garneau
SUNY Plattsburgh
- Larry Geohring
Cornell University
- Dr. Francis Glenn
Glenn Seeds
- John Gloss
Dairy One
- Art Graves
Mycogen Seeds
- Dr. Russ Hahn
Cornell University
- Mike Hunter
CCE, Jefferson & Lewis counties
- Kyohei Ishida
Zen-Noh
- Amy Ivy
CCE, Clinton County
- Jane Jackson
Bookends Farm
- Brian Jerose
WASTE NOT Resource
Solutions
- Ivor Jones
Select Sire Power
- Jason Karszes
Cornell Pro-Dairy
- Dr. Quirine M. Ketterings
Cornell University
- Carl Key
Healthy Herd Genetics
- Tom Kilcer
Advanced Ag Systems
- Dr. Peter Krawczel
University of Tennessee-Knoxville
- Dr. Limin Kung
University of Delaware
- Joe Lawrence
CCE, Lewis County
- Dr. Sam Leadley
Attica Veterinary Associates
- Dr. Cathy Lombardi
The Oaks Veterinary Clinic
- Steve Mahoney
River Bend Ag &
Environmental Services
- Molly McCue, DVM, MS,
Ph.D., ACVIM
University of Minnesota
- Dr. David Mertens
Mertens Innovation
- Dr. Bianca Mobius-Clune
Cornell University
- Joe Monroe
Nutrena/ Progressive Feeds
- Dr. Steve Mooney
Morrisville State College
- Dr. Kimberly Morrill
CCE Regional Dairy Specialist
- Dr. Andrew Novakovic
Cornell University
- Dr. Kitty O'Neill
CCE Regional Field
Crops & Soils Specialist
- Dr. Tom Overton
Cornell University
- Dr. George Palmer
Palmer Veterinary Clinic
- Dr. Sammy Pittman
Innovative Equine Podiatry &
Veterinary Services
- Dr. Steve Plehn
Dow Agrosociences/Mycogen
- Dr. Katy Proudfoot
The Ohio State University
- Barry Putnam
Farm Credit East
- Dr. Ed Romanowicz
SUNY Plattsburgh
- Jon Rooney
Monument Dairy
- Dr. Don Ross
University of Vermont
- Dr. Nichol Schultz
University of Minnesota
- Molly Scoville
Merck
- Dr. Randy Shaver
University of Wisconsin
Madison
- Dr. Margaret Smith
Cornell University
- Dr. Charlie Sniffen
Fencrest, LLC
- Clayton Stoffel
Papillon Nutrition
- Carol Tetreault
Adirondack Tack
- Ev Thomas
Oak Point Agronomics
- Dr. Tom Tylutki
AMTS, LLC
- Dr. Mike van Amburgh
Cornell University
- Dr. Harold Van Es
Cornell University
- Dr. Philip van Harreveld
VT Large Animal Clinic
- Dr. Edward Verhamme
Limnotech
- Scott Walker
Monsanto/Dekalb
- Sean Wallace
Champlain Valley Agronomics
- Dr. Robert Whitlock
University of Pennsylvania
- Erik Whittaker
Poulin Grain
- Mark Winslow
Papillon Nutrition
- Katie Woods
Novus
- Dr. André Wright
University of Arizona
- Jessica Ziehm
NY Animal Agriculture
Coalition
- Bill Zweigbaum
Farm Credit East

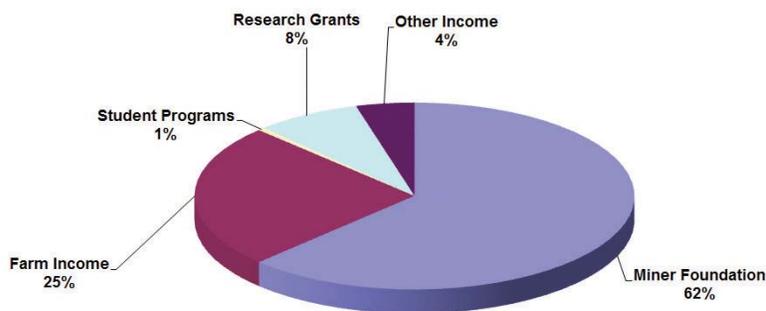
SUPPORT

- Dr. Kenneth Adams
- Adirondack Tack
- AgriMark
- AMTS LLC
- Dr. Joseph and Joan Burke
- Nancy Caisse
Townshend Farm
- Corning Life Sciences
- Doug and Adrienne Gable
- Leatherstocking Morgans
- Lallemand Animal Nutrition
- Lowell and Donna Ludford
- Microflex Corporation
- Glenice E. Morris
- RUM&N SAS
- Thermo Spectronic
- Patricia Waring
- Zen-Noh

FINANCIAL SUMMARY

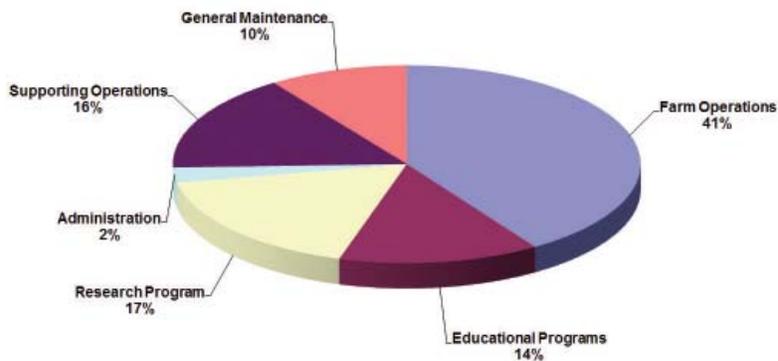
Miner Institute's primary source of revenue is from The William H. Miner Foundation Trust established in 1923. The contribution from the Miner Foundation has historically accounted for 65-70% of the Institute's overall revenue. In 2016, the overall contribution increased by approximately 2% and accounted for 62% of the Institute's revenue. Farm operations contributed 25%, unchanged from 2015. The overall revenue from farm operations decreased by nearly 6% in 2016 due to lower average milk prices. Other income fell back to its' typical range following 2015's significant increase, a result of a \$1.0 million donation from the Stephen Flanagan Estate.

The William H. Miner Agricultural Research Institute 2016 Revenue



Miner Institute's farm operations accounted for 41% of overall operating expenses and revenue from these operations offset 72% of these expenses. The Institute's research projects including funded as well as in-house research represented 17% of the 2016 operating budget with 61% being offset by research grants. Various educational programs offered throughout the year at Miner Institute made up 14% of our operating expenses with the majority of these programs (96%) being funded by the contribution from The William H. Miner Foundation.

The William H. Miner Agricultural Research Institute 2016 Expenditures



CONGRATULATIONS TO ...

Luiz Ferraretto, Ph.D.



Luiz was a post-doctoral researcher at Miner Institute from fall 2015 to February 2016. Luiz earned his Ph.D. from the University of Wisconsin-Madison. He is now an assistant professor of Livestock Nutrition at the University of Florida. His research there focuses on forage quality and utilization. He teaches basic animal nutrition for animal science and pre-vet students and is developing a ruminant nutrition course for graduate students focused on vitamins.

Melissa Woolpert, MS



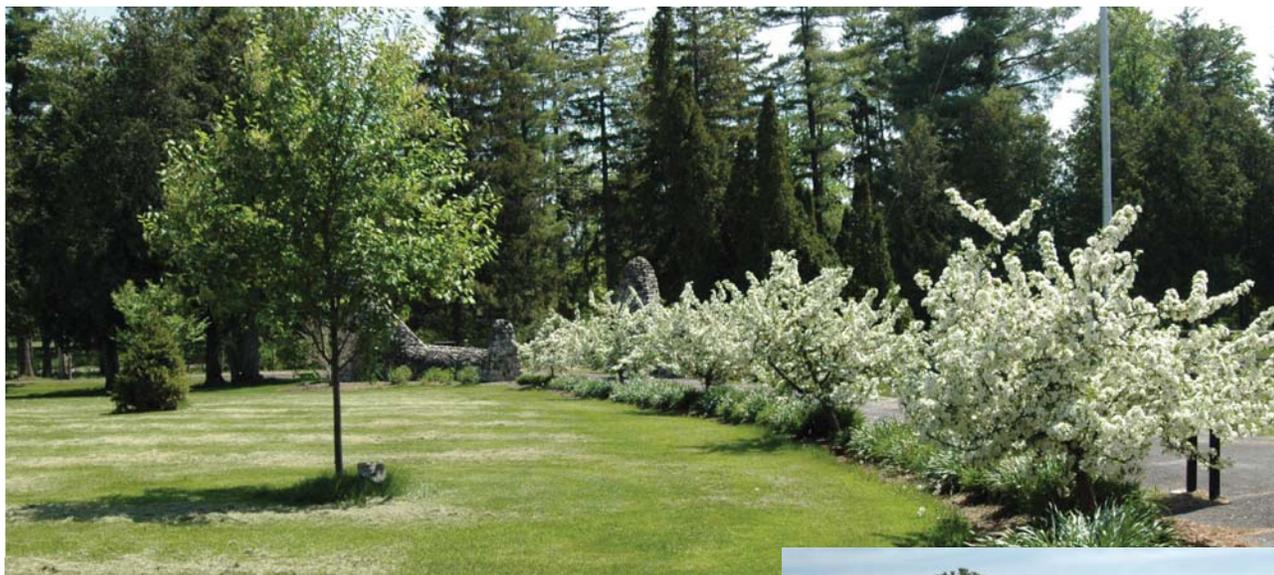
Melissa was a 2013 Advanced Dairy Management student and returned to Miner as a graduate student from May 2014 to May 2016. She earned a master's degree in Food Systems from the University of Vermont. Her research area was management and nutritional strategies to improve fat and protein yield on dairy farms. She now works as a Dairy Nutrition Adviser and Outreach Manager for Poulin Grain. She also chairs the Vermont Breakfast on the Farm committee for 2017.

Shannon Heibeck



Shannon was a Summer Experience in Equine Management student in 2013. After earning her Bachelor of Science degree in Agriculture Science, with an animal science emphasis and an equine science minor, she returned to Miner Institute as the year-long intern in September 2015. Shannon is currently working as an assistant at an Ocala, FL barn for a client who competes in Combined Driving Events. She hopes to move to Kentucky in 2017.

HEART'S DELIGHT FARM HERITAGE EXHIBIT



We had another successful Heart's Delight Farm Heritage Exhibit season in 2016. Events such as Strides for James in May, the June Open House, and Farm Days for Fifth Graders each brought hundreds of visitors to the exhibit.

Additionally, we participated in Museum Days — with 14 other participating museums in Clinton County who offered free admission and opened their doors to visitors the first weekend in June. Over the course of the weekend, we welcomed around 100 visitors.

In 2017, we will showcase a special exhibit on hydro-electric power in the Heritage Exhibit.



The Heart's Delight Farm Heritage Exhibit is open to the public weekdays from May through October. The gardens and Wayside Walk are open year-round. We welcome the public, groups, schools and clubs to visit us to learn more about William and Alice Miner and their contributions to the North Country.

BOARD OF TRUSTEES & OFFICERS

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Bernard Leerkes, Jr.
Co-owner, Leerkes Dairy Farm

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Adjunct Professor, Albany Law
School

Frederick Woodward, Ph.D.
Retired Chief
Collegiate Administrator

Geoffrey Yates
Senior Vice President/
Chief Strategy Officer
Yankee Farm Credit



Front Row (L-R): Dr. Joseph Burke, Dr. Fred Woodward, Richard Eakins, Rocky Giroux, Bernard Leerkes.

Back Row (L-R): Dr. Rick Grant, Kirk Beattie, Geoff Yates, and Rod Giltz.

Absent: Dr. Ann Willey

OFFICERS

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Rachel Dutil
Secretary

Kirk E. Beattie
Vice President,
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Cornell University

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Community Volunteer

William L. Owens
Retired U.S. Congressman, NY 23rd District

Brendan P. Owens, Esq.
Attorney at Law
Stafford, Piller, Murnane, Kelleher & Trombley PLLC

EMPLOYEES & YEARS OF SERVICE

FACULTY/RESEARCH

Katie Ballard, M.S.	29
Amy Bedard, M.L.S.	10
Maggie Carter	20
Kurt Cotanch, M.S.	15
Heather Dann, Ph.D.	12
Jeff Darrah	14
Wanda Emerich, M.Ext.Ed.	29
Heather Gauthier	16
Laura Klaiber	1
Lisa Klaiber	2
Stephen Kramer, M.S.	22
Sheila Mousseau	4
Andrew Whitney	2
Eric Young, Ph.D.	7

ADMINISTRATION

Kirk Beattie	16
Rachel Dutil	7
Rick Grant, Ph.D.	13
Laurie Miller	33

PHYSICAL PLANT

Jared Ashline	9
Brian Bechard	35
Daniel Belrose	17
David Boulerice	28
Steve Fesette	35
Mark Gonyo	16
Adam LaCount	7

AGRICULTURE

Cole Ackerman	3
Shawn Bechard	11
Shaun Castine	7
Bethann Caston	13
Steve Couture	11
Randy Dupee	1
Joshua Duprey	2
Andrew Guerin	1
Kristup Kalvaitis	9
Ralph LaBombard	15
Justin LaValley	2
Henry Meseck	32
Anna Pape	10

EQUINE

Karen Lassell	21
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FOOD SERVICE / HOUSEKEEPING

Tammy Allen	8
Hope LaForest	18
Michelle Miller	4

GRADUATE STUDENTS

MacKenzie Campbell	
Casey Corrigan	
Keegan Griffith	
Wyatt Smith	

INTERNS

Emma Duffy, Dairy	
Samantha Dobbins, Equine	
Kayla Hultquist, Research	
Michael Miller, Research	



Research samples are labelled and sorted.



Miner Institute staff and students ready for the June 25 Open House.



The maintenance crew works to install new windows and siding on the student housing complex.



Karen Lassell, Kirk Beattie, Rick Grant, Rachel Dutil and Ellen Adams (Alice T. Miner Museum) answer phones during a pledge drive at Mountain Lake PBS that premiered *Heart's Delight: The Story of William H. Miner*.

The William H. Miner Agricultural Research Institute



**1034 Miner Farm Road
P. O. Box 90
Chazy, NY 12921
518-846-7121
www.whminer.org**

