



## Forest Lake Area High School is a 2019 Green Ribbon School



Forest Lake Area High School (FLAHS), located 30 minutes north of Saint Paul, Minnesota, serves nearly 2,000 students. Recently, the high school underwent significant construction, expanding and renovating spaces with a focus on environmental sustainability. In the fall of 2018, student enrollment increased as a ninth-grade class was added to the school. Even with a larger building and 500 additional students, the renovated high school saw reduced energy use per square foot and energy use per student.

New and renovated spaces now include glass windows and doors, six refillable water bottle stations, and flexible spaces for collaborative student learning. The new, two-story addition added small group conference rooms, significant amounts of natural light, and science and agricultural spaces.

Energy-efficient LED lighting with

motion sensors are in classrooms, hallways, and throughout the entire building. Approximately 1,500 solar panels (418 kilowatts of power) on the high-school rooftop provide 5 percent of the school's energy usage and save the school district some \$70,000 per year. Energy-efficient boilers and an updated HVAC system use remote monitoring and zonal set-backs to reduce energy use. The motion sensors in each room identify occupied versus unoccupied spaces and automatically adjust room temperature. Occupied zones are set between 70–72 degrees Fahrenheit and unoccupied zones are set at 65 degrees Fahrenheit in the winter and 85 degrees Fahrenheit in the summer. The cumulative environmental impact of these energy-efficient renovations is a 39 percent reduction in greenhouse gas emissions on a square-footage basis over five school years. FLAHS uses the B3 Benchmarking program to track energy and water consumption in ENERGY STAR Portfolio Manager automatically, most recently receiving a score of 78.

Water conservation saved over 4 million gallons of water over six years. Changes in irrigation equipment (rain detectors) and practices (programmable sprinklers) significantly enhanced water conservation. A stormwater reuse project underway will use retention ponds for water storage before filtration and irrigation on athletic fields. Not only does the stormwater reuse project save on potable water use, but it also reduces stormwater pollution that otherwise would have been added to nearby Clear Lake. Further, the school's education curriculum will integrate reuse technology and water conservation concepts into biology, agriculture, and Earth and space

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## Waconia Students Learn Their A's, Bees and C's

By Al Lohman

Waconia Middle School was buzzing with more activity than normal this past May.

That's because there's a colony of honey bees settled on the roof of the building.

It's a new learning feature next to the geography wing of the middle school and it ties nicely to the "Edible Classroom," the school garden outside the building below. That's because bees are pollinators, moving pollen from one part of a plant to another, playing a crucial role in the production of most fruits and vegetables.

There's growing awareness about the importance of pollinators and growing concern about their viability because of habitat loss, use of bee-killing pesticides, climate change, parasites and pathogens.

That's one factor behind the grant application that social studies teacher Michele Melius made to the Whole Kids Foundation to acquire a honey bee colony for the school. She raises her own bees and applies them in her teaching.

"Everything about bee hives can be translated to geography (resources and land use) and STEM (science, technology, engineering and math)," Melius said. The school garden



and beehive also are intended to spark curiosity and connect kids to the root of their food.

Like many natural phenomena, a hive of honey bees is incredibly complex. Each

**"Everything about bee hives can be translated to geography (resources and land use) and STEM (science, technology, engineering and math) . . . The school garden and beehive also are intended to spark curiosity and connect kids to the root of their food."**

colony has its own social structure and roles: the queen, which populates and sustains the hive; drones, which fertilize the queens; and workers, the largest population, which forage for pollen and nectar, feed larvae, ventilate and warm the hive, and defend the nest.

Some scientists classify a beehive as a superorganism, an efficiently functioning insect society that yields significant benefits to human populations. Not only pollinating

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# The Academy for Sciences and Agriculture



Becky Meyer, Executive Director  
AFSA High School

The Academy for Sciences & Agriculture has now expanded to serve grades K–12! A newly renovated second location offers an innovative option for K-8 education in the area. With a hands-on approach to the core curriculum and experiential learning infused throughout all aspects of the program, AFSA students are a part of a unique learning community with a variety of opportunities.

AFSA's K–8 program was piloted for 2 years in grades 5 & 6 to work on developing new initiatives that provide opportunities for students to direct their learning and build skills necessary for global citizenship in the 21st century. Innovation Studio is a designated class period in which students self-direct their learning. Students choose a topic they want to know more about and a teacher acts as a facilitator. Topics have ranged from coding to bullying prevention, and cooking to pollinator repopulation.

The expansion allows for additional opportunities in the High School offerings as

well. Grades

9–12 continue to benefit from elective classes, flexible learning spaces, and individualized program options to emphasize student ownership in their educational experiences. AFSA offers concurrent enrollment options without track requirements, allowing students to choose classes in their interest or strength areas. To provide these course offerings, which add up to 28 college credits, AFSA partners with UMN-Twin Cities and Southwest MN State University. AFSA also supports PSEO, and works with students to develop the right plan for their future goals.

AFSA's K–12 curriculum is designed to help students develop leadership; communication, critical thinking, and collaborative skills that help guide them to success in 21st-century careers. The school emphasizes family involvement, community support, and partnerships with agribusiness and educational organizations. All students in grades 7–12 are members of the local, state, and national FFA Organization making AFSA the largest FFA Chapter in Minnesota.

Agriculture classes are included for all K–12 students each year. The 7–12 grade curriculum includes developing leadership skills and learning about career opportunities in five areas of AgriScience, including: Engineering; Animal Science; Plant Science; Environmental Science; and Food Science. In grades K-6, Agriculture classes focus on local agriculture, environmental stewardship, agriculture consumerism, and human impact. AFSA



staff are all responsible for growing students' agricultural literacy by integrating agriculture topics into all classes and experiences at AFSA K-12.

AFSA's FFA affiliation allows them to provide additional opportunities such as CDE's (Career

Development Events), SAE's (Supervised Agricultural Experiences), and the AgriScience fair where they consistently have projects that earn national recognition. All students in grades K–12 are required to complete an original science fair project each year. The high school hosts two judging events, where up to 40 judges from local businesses, community organizations and universities volunteer to work with the students. Projects are judged at the school level. Each project receives three scores from three different judges, and the scores are averaged. Students in grades 7–12 whose average score is in the top of their science fair category move on to state competition. This year 60 students qualified for state competition. In the elementary grades, students are involved in classroom inquiry projects to explore the scientific method and prepare them for their future AgriScience fair projects.

AFSA's FFA Alumni coordinates a Potato Hug each fall which, not only serves as a fundraiser, but it is primarily a chance for students to sell wares that they have produced during their SAE.

Students have a chance to truly experience being an entrepreneur. Participants work on various projects including beekeeping, woodworking, home baked goods, and other DIY projects.

Students in 5th & 6th grades have the opportunity to work together on a group "AFSA Store" as a stepping stone project to the SAE's they will be working on in grades 7–12.

All AFSA Students are exposed to a wide variety of content areas and unique experiences within hands on and practical learning applications. Whether it is Innovation Studio or Supervised Agricultural Experiences (SAE), students are motivated to conduct a learning activity that is relevant to their goals. This differentiated approach allows any student to be innovative, progressively thinking, and invested in their learning experience.

As an example, AFSA's 9–12 building's rooftop boasts about a dozen raised planters, all built by the Construction classes. The school's landscaping is done by the Landscaping class, and Floriculture class makes the boutonnières and centerpieces for special events. Student initiatives don't stop there; AFSA students take ownership of their school and design new clubs, activities, and propose school-wide changes. This year's clubs and activities include FIRST Robotics, Drama Club, Art Club, Gamers Club, Dance Club, World Food Prize, Youth in Government, K-Pop Club, REACH Squad, Quiz Bowl,



FFA, NHS, Bird Nerds, Current Event Club, Athletics, Spanish Club, E-Sports, and more.

The Academy for Sciences & Agriculture (AFSA) engages learners in academically rigorous, student-centered learning experiences and leadership opportunities within a science and agricultural context. AFSA brings agricultural literacy to urban and suburban populations.

This K–12 public charter school was founded by the Minnesota Agricultural Education

Leadership Council (MAELC) in 2001. AFSA began as a 9th–12th grade high school with 41 students. Currently over 465 students are enrolled and the school will grow to about 600 students over the next three years. AFSA's locations, in Vadnais Heights and Little Canada, allow inclusion of students from all north/east Twin Cities areas.

AFSA K–12 prepares students to be wise consumers, savvy decision makers, and successful, career-oriented lifelong learners. The unique curriculum with hands-on and experiential learning drives the success of the students through high school and beyond.

## Student quote:

*"AFSA inspired me to look at the world from different perspectives, see that agriculture is important and it always will be. AFSA sparked my passion for learning and connecting with the community around me. Thanks to AFSA I am motivated to take action through education."*

— Isabella Forliti, AFSA Class of 2019.

[www.afsahighschool.com](http://www.afsahighschool.com)

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## Forest Lake Area High School is a 2019 Green Ribbon School Continued from Page 1

science courses.

High-visibility, four-gallon blue recycle bins are in all classrooms, and products for recycling are collected daily by students in the special education department. The cafeteria staff composts approximately 75 gallons per week of leftover and unusable food through the Food to Hogs program. Students implemented a lunchtime foodshare table to reduce the disposal of unopened quality food. A Safe Routes to School grant for \$471,795 provided walking path connections along nearby thoroughfares and connected Forest Lake with several neighboring schools.

Forest Lake proactively monitors and manages campus environmental health. Some efforts include carbon monoxide monitors, long-term radon testing, regular testing for asbestos, a new HVAC system, and a no-poly-chlorinated-biphenyls policy. A student from the environmental club is training custodians on sidewalk salting best practices. Through recent renovations, the school has added more than 440 square meters of exterior windows in classrooms and hallways, contributing to a 60 percent increase in natural light in the buildings.

Staff and student well-being are supported through wellness activities, mental and physical health supports, and a diverse group of clubs and activities. Positive Behavioral Interventions and Supports is being implemented at Forest Lake over the next several years to improve overall school culture. Each

fall since 2013, the school has screened incoming students for depression to identify those with mental health needs and provide them with the necessary support. One hundred and forty nine junior and senior student leaders serve as mentors for ninth- and tenth-graders.

Student volunteer hours, measured through an online recording system and organized by the United Nations Sustainable Development Goals, surpassed 3,000 hours in the fall of 2018. Most of these hours supported the Sustainable Development Goals of quality education, sustainable cities and communities, and good health and well-being. In November 2017 more than 150 students participated in the global Paper Crane Project, celebrating the 2017 Nobel Peace Prize awarded to the International Campaign to Abolish Nuclear Weapons.

All graduating students participate in a science-based climate change education curriculum that includes both science and solutions. Environmental literacy, integrated in both required and elective courses, focuses on human interaction with Earth's four spheres (atmosphere, hydrosphere, biosphere, and geosphere). In the required world history course, students read primary sources, weigh evidence, and apply their own findings to the present day. The theme of environmentalism versus economic development is crucial to discussions about the Industrial Revolution and the link between health and environmental quality. Required biology, Earth and space

science, and physical education courses regularly use the natural environment for learning. Biology students conduct field analyses, Earth and space science students evaluate climate data, and physical education students engage in outdoor lessons.

Agricultural courses include fish and wildlife management, natural-resources science, alternative energies, and animal-science courses. The annual agriculture day showcase allows all students to explore a hydroponics trailer, information tables, and live animals. Science courses include environmental science and meteorology. In these courses students participate and initiate research projects that examine all aspects of environmental stability and the complexity of natural systems. Students collect data outdoors and analyze the way humans interact with their environments.

Forest's Lake's physical education offerings include two outdoor education courses. The fall- or spring-season course includes activities such as bicycling, canoeing, water safety, and orienteering. The winter season activities include Nordic skiing, Alpine skiing, snow caving, winter survival, broomball, and other outdoor recreational activities that promote physical fitness. The influence of recreational activity on the environment receives special attention in both courses.

The school's environmental club educates others on recycling practices, volunteers with local organizations, and collaborates with

Youth Eco Solutions to complete projects, including the installation of an on-campus pollinator garden. Students in the environmental club partnered with Climate Generation, a Minneapolis-based nonprofit organization, to host a youth convening at the high school in the spring of 2019. For this event, students planned and facilitated a public community-wide event that focused on climate change science and provided local stories and solutions. The club also planted 128 native pollinator plants on campus; hosted an environmental film screening; collected over 600 pounds of old holiday lights during three seasons; planted more than 200 seeds in repurposed milk cartons to give away on Earth Day; and removed invasive buckthorn in nearby parks. Invited speakers have included a solar-panel technician; a volunteer from the local watershed district; a city government representative; an arborist; a forestry fire technician and a forester; a professor of fish, wildlife, and conservation biology; a horticulturist; a landscaper; a conservation officer; and various environmental nonprofit speakers.

Source — U.S. Department of Education

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## Fields of Opportunity



The state of Iowa is known for “fields of opportunity” and the College of Agriculture and Life Sciences at Iowa State University is no stranger to the agriculture industry and the many opportunities that come with it. Students from across the Nation have chosen Iowa State to pursue an education in an agricultural field both online and in the classroom. With the flexibility to further your education from almost anywhere and a variety of degrees offered both online and in the classroom, there are many benefits of an agricultural education at Iowa State.

Megan Zwiefel, a senior majoring in Agricultural Business at Iowa State, appreciated the opportunity to explore various career paths with internships she found through career services in the CALS. She completed internships with Farm Bureau Financial Services and Flint Hills Resources, which assisted in narrowing down her career choice. “A benefit for my generation, if you're going into an agriculture career and you are passionate about it, is being able to educate the younger generations about the importance of agriculture. Having that

opportunity is rewarding,” Zwiefel said. “I think it's hard for people to see the importance of agriculture, especially when you don't live in a rural area. With a growing population, we are having to learn how to grow more and more food, and I think being a part of that is incredible.”

The agricultural education master's program at Iowa State provides professionals an opportunity to advance themselves within their field by being able to explore courses focused on introduction to research, instructional methods, program planning, learning theory, and foundations of agriculture. “Students have the opportunity to select additional classes which they would like to tailor to their degree program,” Scott Smalley, Associate Professor in Agricultural Education and Studies at Iowa State said. “The courses within the program allows individuals from a wide variety of fields to be able to successful in the course. Individuals completing the program include agricultural educators, extension professionals, business and industry leaders and non-profit directors.”

Riley Arthur, an Agricultural Business/Economics double major at Iowa State, has

been impressed by how much the CALS faculty and staff care about and students and their success. “One of the things that drew me to a career in agriculture was the people,” Arthur said. “There is a culture of respect that is present throughout the entire industry whether it's in CALS, John Deere or any other agricultural organization.” Arthur said one thing he likes about having an Agricultural Business/Economics double major is, it doesn't limit him to only agricultural related jobs because he has the education needed to succeed in any field. Arthur is the president of the Agricultural Business Club at Iowa State, which he says has opened up many potential career opportunities. Arthur participated in three internships throughout his time at Iowa State which lead to a job offer upon graduation. “The club has numerous sponsoring businesses and a positive reputation which gives members an advantage when it comes to internships and job possibilities,” Arthur said. “It also gives you the opportunity to meet other students with your major and build those connections.” The opportunities for an agricultural education are endless, start your adventure today!

## MAAE Award Winners

### Outstanding Ag. Ed. Teacher



**Ed Terry**  
Randolph High School

“My students are “my kids,” but to the rest of the world they are “Young Professional in Agriculture.” I work to provide them the skills and tools they need to be successful by guiding, supporting and encouraging them.”

#### Overview

- Ed teaches 99 students in his program with an FFA membership of 134 students.
- Teaches an evening Outreach class which involves 35-40 students from Hastings, Lakeville, Rosemount, New Prague, freshmen and sophomores from Northfield, home-schooled students, Jordan, Faribault and Cottage Grove which consists of night classes, home study and on-farm instruction.

#### Experiential Learning

- Students operate a chapter test plot and a 40-acre farm to give real-life experiences in farm operation and management.
- Students assist in the Urban Ag Day working with 3rd graders.
- Organize day-long field trips planned by the students.

#### Professional Growth

- Ed Serves in numerous leadership roles such as MN Forage and Grassland council, American Dairy Association, founding member of the Dakota County Ag Professionals, UMORE Park Advisory Chairman.
- Co-Trustee form the James Tracey Scholarship.
- Author for curriculum for Dakota County’s Rural Non-Point Pollution for secondary schools.

#### Student Organizations

- 3 State Officers, Star in Ag Placement, 2 National Proficiency Winners, numerous State CDE and LDE winners advancing to Nationals, 40+ American Degree

recipients.

- Encourage personal development at camps and local community leadership as well as post secondary leadership roles.

*“Agriculture education is excelling at Randolph Schools due to the relentless hard work and positive relationships that Ed Terry develops with students and their families. His impact on the community is felt for generations and the respect that is show for him.”*

—Michael Kelley, Superintendent  
Randolph Public Schools

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### Outstanding Middle/ Secondary AG. ED. Program



**James Weninger & Seena Glessing**  
Howard Lake Waverly Winsted  
High School

“Our program strives to provide instruction in agriculture that increases student knowledge and appreciation of the importance of agriculture locally, nationally and globally.”

#### Overview

- HLWW has an annual enrollment of 485 students and over 140 of these students are actively engaged in FFA.
- The HLWW Agriculture program delivers instruction to all 6th-8th grade students over one quarter and course offerings in all career pathways for students grades 9th-12th.
- HLWW has 21 course offerings at the high school level with a course aligning with Chemistry requirements and another with concurrent enrollment with the University of Minnesota.

#### Experiential Learning

- Service learning is integrated into the curriculums in a variety of ways such as landscaping projects, tree plant-

ing, native grass plantings, Ag literacy projects, school-wide backpacking and Project Caring.

- A course developed called Building communities to work on current initiatives and identifying additional needs within the community.
- Students apply skills used in the landscape industry through maintaining a 1.2 acre vegetable garden, 15 acre crop variety test plot and work within three different greenhouse structures.

#### FFA Highlights

- HLWW has been the Minnesota Premier Chapter, consistently in the top ten for Ag Literacy and Service Winner, has had 7 State FFA Officers, 16 Regional FFA officers and 2 State Star Winners.
- On Average, sends over 50 students to the State FFA Convention
- This last year had an FFA Knowledge team, Ag Communications and Parliamentary Procedure team compete at Nationals

*“Our instructors have created a premier program based on the love for Agriculture Education but more importantly based on the love for our students and our communities.”*

—Jason Mix, Principal

[www.hlww.k12.mn.us](http://www.hlww.k12.mn.us)  
(320) 543-4646

### Outstanding Early Career Teacher



**Kirby Schmidt**  
Deer River High School

“My philosophy on education is all about helping students become the best version of themselves, and to take a hold of their future.”

#### Overview

- Kirby teachers courses within the following areas: 7th and 8th grade exploring

Ag, Introduction to AgriScience, Introduction to Animal Science, Companion Animal and Equine Sciences, Veterinary Sciences, Floral and Landscape design, Wildlife management, Fisheries and Aquaculture, Forestry, CIS Natural Resources, Food Skills, Food Science and Preservation, Career Exploration and Leadership Development, Work Experience and Communication Skills for Agriculture.

- Supports learning within a classroom, 6 full kitchens and outdoor learning spaces.

#### Experiential Learning

- Implemented an SAE program that focuses on a three tiered system: Grade-Worthy, Degree Earning and Award Winning.
- 9 Students achieve award winning status through recognition in their state degree, proficiencies and star award programs.
- Created a course called “Career exploration and Leadership development where students are partnered with Best Prep eMentors.
- Work with other groups to offer Work experience programs for students.

#### Professional Growth

- Kirby has attended workshops and conferences through MAAE, hosted a teacher candidate from the U of M.
- Pursued professional growth experiences through ACTE Vision, Ziglar Youth Legacy Certified Trainer, Association for Supervising and Curriculum Development National Conference, DuPont AgScience Inquiry Institute, CASE Food Science and Safety, Habitudes Certified Facilitator Training and 4x National FFA State Officer Programs trained facilitator.

*“Every Student. Every Class. Every Day”*

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## Growing Up with Gardens



Lyssa Campbell  
Minnetonka Public Schools

Minnetonka Public School's younger learners are presented with exciting, hands-on lessons that bring them closer to nature. "I get the kids out every week, what we call 'Wilderness Wednesday,'" said Scenic Heights Elementary Kindergarten teacher, Amy Altenburg. "We bring students outside for about 45

minutes to enjoy our Outdoor Learning Center or the Peace Garden . . . anything to help them grow accustomed to being out in nature. These efforts align with our Kindergarten science standards that include learning about the seasons, planting, growing and understanding living and non-living things."

When Altenburg talked to her students prior to starting the Wilderness Wednesday program, some told her that they did not like

going outside. Others said they weren't going outside as much as they would like. "At our October parent-teacher conferences," said Altenburg, "parents mentioned how much the children love these experiences. I believe these activities will [continue to] increase their love of nature and being outside." Last fall, students planted tulip bulbs that provided a splendid payoff the following spring for the entire school community.

For many years, district students have also explored planting through in-class, hydroponic gardens. These vertical, glass units allow students to grow leafy vegetables and other plants indoors without soil and without weeds. Students learn what plants need to grow and thrive, and enjoy maintaining the Tower Garden and harvesting the plants after a few short weeks. Some classrooms have celebrated their success with a cooking lesson. Students washed the greens and helped create



a healthy salad for all to try. Based on their enthusiastic appetites, it appears to be true that children who grow their own vegetables are more likely to eat them!

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## Waconia Students Learn Their A's, Bees and C's Continued from Page 1

plants that make up a considerable portion of the foods we consume, but also producing honey, a sweetener with surprising health benefits; honeycomb, a wax that can be eaten, made into candles, and used in lip balm, moisturizers and cosmetics; and royal jelly, a substance secreted by honeybees that contains a variety of nutrients and can be applied to heal burns and wounds.

The bee colony at the middle school was acquired in April and the hive, or apiary, has been placed on a sheltered section of roof facing the southeast for the best chance of survival, according to Melius.

The colony was purchased from Nature's Nectar, a bee supply dealer in Stillwater,

Minn. Two varieties: Carniolan, a western honeybee, and Saskatraz, a Canadian variety that is northern hardy and Melius hopes will adapt well here.

The Waconia colony started out at about 3,000 bees. But during her peak, a queen bee can lay up to 2,000 eggs per day, so Melius estimates that during the active season the population could reach up to 50,000 before dropping off dramatically during the colder seasons. Bees live an active but short life — about 5–8 weeks.

During the first cold, welcoming spring days, Melius sustained the hive with sugar water and a pollen patty. But with warmer temperatures and sprouting trees and flowers,

worker bees are now reaching out to neighborhoods and fields up to five miles away. And they should soon be lighting in the school garden to fertilize the fruits and vegetables that are planted there, which will end up in school cafeteria larders by next fall.

The hive could also yield more than 100 pounds of honey. Most of that will stay in the hive to enable to the bee population to survive, but possibly 40 pounds, or four gallons, could end up available for school use, according to Melius.

Meanwhile, middle school students have been studying the bees up close as they go about their business.

Not to fear though, parents. Students

won't get stung in their studies. The bees are outside. The students can observe and learn through an observation window in a bee resource corner on the second floor of the middle school.

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Priority Registration



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# Solar Schools: A Bright Idea For Education and Cost Savings

By Peter Lindstrom,  
Clean Energy Resource Teams

## “All Schools in Minnesota Utilize Solar Power.”

Imagine this headline in the near future. Wouldn't it be amazing if solar energy powered the education of our state's 845,404 students? It might not be so far off.

Most schools in Minnesota do not currently have solar, but there has never been a better time for them to take advantage of clean energy opportunities. A dramatic drop in the cost of solar panels, combined with new financing choices, has now made solar widely available.

Why now? There are many compelling reasons, and here are the most common:

- **Financial.** The cost of solar panels has dropped 65% over the last decade, and schools can avoid the upfront investment and ongoing maintenance requirements through third-party ownership.
- **Educational.** Access to solar allows students and teachers to connect STEM education with new technology on school grounds and with one of the fastest growing job markets in the state.
- **Environmental.** Solar schools offset an estimated 1 million metric tons of carbon dioxide annually, equivalent to the greenhouse gas emissions from nearly 221,000 cars.
- **Community Leadership.** Schools are at the center of the community. A solar array is a great way to communicate that sustainability is a key value and inspire others.

Ok, so you've decided this sounds like a good idea, but then you're faced with lots of decisions: Buy it outright or enter into a power purchase agreement (PPA)? Rooftop, ground-mount or carport? How can we work with our electric utility? What rebates or other incentive can we tap into? When and how should we engage the school board?

That's where the Clean Energy Resource Teams—or CERTs—swing into action.



Red Wing Community Solar Garden in Red Wing, MN. Credit: IPS Solar

CERTs has been working with schools across the state to make solar a reality for years, and in the process, has developed unbiased tools and resources for other schools to utilize free of charge. Tools for site selection, requests for proposals, State contracts, calculators, and more are online and ready to use at:

[cleanenergyresourceteams.org/public-solar-procurement](http://cleanenergyresourceteams.org/public-solar-procurement).

Even after tapping into these tools, it's always nice to talk to a human to ask questions, learn who else has installed solar, and get help all along the way. Peter Lindstrom with CERTs is ready and willing to help your school move forward with solar. He can be reached at 612-625-9634 or [plindstr@umn.edu](mailto:plindstr@umn.edu).

## Case Studies

### Red Wing Public Schools

Red Wing Public Schools in Minnesota generates up to 120% of its district-wide energy consumption through a 6 MW community solar garden on school district property. The energy produced by the 15,520 solar panels is shared by the district's six schools and the community. Over the next 25 years, the school district is projected to save \$7.7 million in energy costs and to earn \$1 million in lease revenue.

“It was really fun for me to go before the school board because you're usually asking

for money,” shared Kevin Johnson, Director of Buildings and Grounds with Red Wing Public Schools, and an important player for moving the solar installation forward. “It's huge, because the millions of dollars the solar is generating goes not into my budget, but into the general budget where it can be used for books and stuff for kids.”

### Chisago Lakes School District

Chisago Lakes School District flipped the switch on five rooftop solar projects in the district along with a Community Solar subscription. The solar panel systems will not only save energy dollars but also provide

science learning opportunities for students and help to meet the district's sustainability goals.

“Chisago Lakes Schools are projected to save \$3-\$6 million in energy costs over the next 25 years with these solar projects. That's a lot of car washes and bake sales,” said Pat Collins, a Science Teacher at Chisago Lakes Middle School who was instrumental in making solar happen there. “But the really great part is that the students are learning about where power comes from and how clean energy will be part of their future.”

### Pine River-Backus Schools

The field and track behind Pine River-Backus High School is now home to a large solar array expected to cover about 80 percent of their electricity needs, at a discount to their typical electricity rates.

“Not only is the new solar array saving our school district money,” said Pine River-Backus Superintendent Dave Endicott, “it's providing direct STEM educational opportunities for our students and getting them thinking about their own career opportunities in the quickly-growing clean energy industry.”



Solar installation on top of Chisago Lakes Middle School in Lindstrom, MN. Credit: The Power of Minnesota






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## LIVEGREEN at District 197

### School District 197

What do you get when you put together an energy efficiency program and an environmental club? LIVEGREEN, School District 197's sustainability program.

LIVEGREEN promotes energy saving, recycling and a lot more throughout the school district. District 197 serves about 5000 students from the communities of Eagan, Inver Grove Heights, Lilydale, Mendota, Mendota Heights, Sunfish Lake and West St. Paul, MN.

Each school in the District has a LIVEGREEN Team that consists of students and a teacher. These teams help implement low-cost or no-cost strategies to reduce energy use, promote recycling, composting, and focus on conserving resources.

West St. Paul-Mendota Heights-Eagan Area Schools (School District 197) has been a longtime Dakota County partner and a state leader in sustainability initiatives. The district sustainability manager, Lisa Johnson, supports each school's LIVEGREEN team.

School District 197 achievements include:



- Implementing organics collection district-wide and improving Breakfast in the Classroom recycling through the School Recycling Program. Recycling increased throughout the district by 30 percent and hauler costs decreased 20 percent during the first program year.
- Receiving U.S. Department of Education Green Ribbon Schools Award for five schools: Moreland Arts and Health Sciences Magnet (2018); Pilot Knob STEM Magnet (2017); Henry Sibley High School (2016); Garlough Environmental Magnet School (2012) and Heritage Environmental-STEM Magnet School (2013). In addition, District 197 was named a Green Ribbon Schools District

Sustainability awardee in 2015.

- February 2016, the School Board approved a resolution declaring District 197 as a "Pollinator Friendly School District" – the first district in the state to pass such a resolution. Small steps each year to protect and promote pollination will include, minimize the use of insecticides and pesticides, establish lawn mowing schedules that protect pollinators and promote pollination, use native plants to support pollinators in landscaping, when possible.
- Installing rooftop solar panel systems on five schools, which are expected to offset nearly 360,000 pounds of carbon dioxide emissions each year and save the district about \$750,000 in electricity costs over the next 25 years.
- Through sustainability efforts, the district has avoided more than \$1.9 million in utility costs since 2003. All 8 schools have earned an Energy Star label from the U.S. Environmental Protection Agency.

[www.isd197.org](http://www.isd197.org)  
(651) 403-7000

### Three More Schools in District 197 Add Solar Power

Last fall, Mendota Elementary, Garlough Environmental Magnet and Heritage E-STEM Magnet added solar panels to their rooftops. Now, five schools in District 197 are generating solar energy to partially power their buildings. Friendly Hills Middle School and Moreland Arts and Health Sciences Magnet had solar panels installed in 2017. All of the solar projects were funded by Made in Minnesota grants through the Minnesota Department of Commerce. In total, the panels at the five schools are expected to offset nearly 360,000 pounds of CO2 emissions annually and save the district an estimated \$750,000 over the next 25 years. Solar is just one the energy saving initiatives in District 197.

In fact, the district was recognized for its efforts to conserve energy, earning a 2018 Best of B3 Benchmarking award. The Best of B3 awards are given to organizations and projects that have shown leadership in lowering their energy consumption through their participation in the B3 programs. Buildings, Benchmarks and Beyond (B3) is coordinated by the Minnesota Departments of Commerce and Administration.

## Careers in Energy

### Engineering

An engineer is someone who likes to solve problems. They can help make the nation's electricity usage more efficient and more reliant on clean fuels.

### Architects

Plan and design structures like homes, offices, theaters, factories, and other buildings.

### Civil Engineers

Use engineering to plan and design construction projects, like roads, bridges, airports, water and sewage systems, and other facilities.

### Electrical and Electronic Engineering Technicians

Work under the direction of engineers. Design, build, or repair electrical equipment, like circuitry or components. As companies look for ways of reducing utilities costs, new employment opportunities may arise for engineering technicians who can recommend solutions for improving production efficiency.

### Electrical Engineers

Use engineering to research, design, develop, or test electrical equipment and systems. May oversee the manufacturing or installation of systems. Talents may be applied to connecting wind farms and solar panels to the grid.

### Industrial Engineering Technicians

Work under the direction of industrial engineers to design processes to make better use of resources at work sites. Design the layout of an industrial or manufacturing workplace to make production more efficient.

### Mechanical Engineers

Use engineering principles to design tools, engines, and other mechanical equipment. Oversee installation, operation, and equipment repairs. Can identify efficiency opportunities in commercial and industrial facilities and calculate estimates of savings.

### Installation and Repair Careers

Installers and repairers are essential to the energy industry. They install, inspect, test, and repair electrical or mechanical equipment.

### Electrical Power-Line Installers and Repairers

Install and fix cables and wires that are used in electrical power or distribution systems. May put up poles and transmission towers, identify and fix defects.

### Heating, Air Conditioning, and Refrigeration Mechanics and Installers

Work on heating, cooling, and ventilation systems in home and office buildings. May repair or install HVAC equipment. As demand for energy-efficient equipment grows, HVAC mechanics can become

involved in the installation and maintenance of small scale renewable technologies.

### Industrial Machinery Mechanics

Repair, install, or adjust manufacturing equipment. As demand for energy increases, new employment opportunities can arise for machinery mechanics that can repair, install, or maintain wind farms and pipeline distribution systems.

### Solar Photovoltaic Installers

Install and maintain solar photovoltaic systems on roofs which convert energy from the sun into electricity for homes and businesses. PV Power Systems engineers drive the development and implementation of highly efficient grid-connected systems for Concentrated PV technologies.

### Wind Turbine Service Technicians

Inspect, adjust, or repair wind turbines. They may correct electrical, mechanical, and hydraulic problems.

### Production Careers

Production workers in energy are mostly employed in power plants, often combining the duties of operators and technicians. Due to their high technical skills and union contracts, these workers can earn double the salary of what their counterparts in other industries earn.

### Chemical Equipment Operators

Operate equipment to control chemical changes or reactions during a production process. May work on devulcanizers, steam-jacket kettles, or reactor vessels.

### Gas Plant Operators

Distribute or process gas for utility companies by controlling compressors to maintain specified pressures on gas pipelines.

### Nuclear Power Reactor Operators

Operate or control nuclear reactors. May start and stop equipment, monitor controls, and record data. Use emergency procedures when necessary.

### Power Plant Operators

Operate machinery to generate electric power. Monitor power plant equipment to watch for problems. Adjust controls to regulate the flow of power between generating stations and substations.

### Welders, Cutters, Solderers, and Brazers

Weld or join metal pieces together using hand-welding, flame-cutting, or brazing tools. May fill holes, dents, or seams of fabricated metal products. May be employed in the construction of gas pipelines, new power plants, and maintenance of existing facilities.

Source: O\*NET Online: [www.onetonline.org](http://www.onetonline.org)

# Lineworker Students Aim to Climb High at M State

## Hunting, Fishing Lured Niemela to Baudette



Every morning when Cameron Niemela looks out his window, he's reminded why he opted for M State's Electrical Lineworker Technology diploma program in Baudette.

"When I wake up, I'm looking right at the Baudette River," Niemela says. "You can't beat my view."

Niemela, a 2018 graduate of Crookston High School, says it was the hunting and fishing opportunities that led him to the northern Minnesota community, near Lake of the Woods.

He spent the previous year in M State's Construction Management program in Moorhead, but "I'm not one to sit in an office. I enjoyed the classes, but I want to be outside, to work with my hands more than a computer."

Niemela says the instructors and the 14 students in his program have developed an "awesome bond" — if someone is struggling, fellow students and instructors are quick to help with whatever is needed.

"You're always learning something new, a new trick or a new tool. Teachers are awesome — I'd give them a 10 any day of the week. They're friendly and just like one of us, except they've got a lot more knowledge."

While Niemela likes the wages that lineworkers can earn — from starting salaries of \$40,000-\$50,000 and upwards to more than \$100,000 — it's the adventure that also inspires him. He hopes someday to work installing power lines from a helicopter in the Pacific Northwest.

## McHugo Drawn to Small-Town Life

Ryan McHugo did his homework before he enrolled in the Electrical Lineworker Technology program on M State's Wadena campus.

After graduating from high school in Thompson, N.D., in 2017, he worked as a grain inspector for a year while he considered his career options. Once he decided to enroll in a lineworker program, he followed the advice of recent graduates who told him "you definitely want to go to Wadena."

"I'm from a small town in North Dakota, and this has that same small-town feel where everybody knows everybody," he says. "You're going to make friends here."

Because of the added potential for future advancement, McHugo opted for the two-year associate degree in ELT rather than the one-year diploma. Most of his first-year courses were on campus, but this year nearly all his time is



spent on the lineworker training field, where he and his classmates were already working atop 29-foot power poles by October.

"I really like climbing," says McHugo, who uses the word "exhilarating" a lot when he talks about the training he and his fellow students are getting. His goal is to work some day in the industry in Montana.

"We have three great instructors who all worked in the field," he says. "I'm learning everything here — this is the story of my career. This program is really preparing me for that."

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## Solar Panels the Newest Addition to ROCORI Schools Outdoor Classroom

### Collaboration Blossoms with CERTs Support

By Emma Allan, West Central, MN

#### How did this all get started?

The idea of using the courtyard space between the ROCORI High School and Middle School buildings as an outdoor classroom started with principal Mark Jenson and blossomed into an amazing collaboration. The pollinator garden, native grasses, a greenhouse, and a couple compost barrels are already installed and maintained by various groups, including the Area Learning Center students, Anita Hendrickx, and her Art classes, students and staff in the ELL program, and interested volunteers. The solar array is a great addition!

#### Meeting ROCORI's energy needs

The solar panels were initially installed to possibly provide power for lighting or watering, as well as an educational opportunity for students and staff, but wiring them to use the energy for specific purposes was too awkward and expensive, so they were installed to meet the general needs of the schools.

#### Making solar energy production even more visible

Aaron Busse with Minnesota Renewable Energies, Inc. met with the group and Brent Neisinger, the head of buildings and grounds

at ROCORI, and together decided to install a monitor that shows the energy being produced in real time as well as over time, so it could be viewed by staff and students and used for educational purposes, as well as saving the district money. The schools are also going to post information by the panels or monitor to promote awareness of the district's participation in off-site community solar gardens and the related energy cost savings.

#### What lessons learned should other schools consider?

The schools would advise others to collaborate regularly with all parties involved. They had great collaboration with their principal, Mark Jenson, and the ROCORI district head of buildings and grounds, Brent Neisinger, as well as with MN Renewable Energies consultant, Aaron Busse. The school did not initially consult enough with the science department, the people most likely to use the installation for educational purposes. They had a couple science teachers on board at the start, talking with them about possible uses of the solar panel information in their classrooms, but to improve the project they would have liked to involve the science department more from the start.

#### What's next for ROCORI Schools?

"We plan to work with ROCORI Middle School and High School science departments to see if they would be interested in presentations to their students about solar energy," said Barb Omann. "We will also be working to make sure that the teachers know what information is available and how to access it so they can incorporate it into their lessons."

"The core goal of this project was to improve the outdoor classroom environment with solar while also educating the community about the many benefits of renewable energy," shared Barb Omann, ROCORI English teacher and Environmentalist Club and Youth Eco Solutions (YES!) Team advisor.

"The most direct beneficiaries are students in the school district—ROCORI has already reached 800 youth with the solar array," Barb continued, "and we're currently working with teachers to incorporate solar into their science curriculum."

"Students enjoyed being part of promoting clean energy, so thanks for helping make this solar panel project possible!"

#### Project Snapshot

- Technology: Solar PV
- West Central CERT Seed Grant: \$1,200
- Total Project Cost: \$4,469
- Other Funds: Youth Eco Solutions (YES!) grant, McKnight Foundation grant



- Project Team: Aaron Busse (MN Renewable Energies), Brent Neisinger (ROCORI Head of Buildings & Grounds), Mark Jenson (ROCORI High School/Middle School Principal), Barb Omann (ROCORI Environmentalist Club & YES! Team Advisor)
- People Involved and Reached: 855
- Annual Energy Generated: 1,783 kWh

Article courtesy of CERTs Clean Energy Resource Teams — [www.cleanenergyresource-teams.org](http://www.cleanenergyresource-teams.org)

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# The Benefits of Partnering with IPS Solar



For the past decade, IPS Solar has helped school districts and universities all across Minnesota transition to solar power. Over 50 schools are currently saving on energy costs each month, reducing their carbon footprint, and providing their students with unique educational opportunities.

## New ways to support clean energy

Rooftop solar arrays can be a perfect solution for school districts with ample usable roof space, but they aren't the right fit for all organizations. Community solar is a great way to combat those concerns. Community solar subscriptions offer districts guaranteed energy

savings without the upfront cost or design & installation process of rooftop solar.

The community solar program is quite simple. IPS develops solar arrays throughout the state and sends all of the energy produced to Xcel's grid. Xcel then adds a bill credit onto the subscribing school district's bill. The subscriber pays IPS slightly less than the credit value, saving the difference on the energy produced.

With Xcel's 'Value of Solar' pricing model, bill credit rates and energy costs are defined for the life of the subscription. There is zero risk, and as energy rates increase over time subscribing school districts will continue

to pay the same lower rate. This allows IPS to completely guarantee district's savings for 25 years.

Kevin Johnson, Director of Buildings & Grounds at the Red Wing School District, has seen the value of solar first-hand since partnering with IPS Solar:

"I have been working for years to get solar into our schools. With school budgets as tight as they are, going green was a very hard sell when the dollars would have to be taken from the classroom. This was a wonderful project, one where I was able to tell our School Board that we could make \$7.7 million over the next 25-years, and spend no district dollars! (\$6.6 solar garden subscription & \$1.1 land lease). What a wonderful way to help our district and the environment! Win-win for everyone!"

## Creating a sustainability-conscious student body

Schools have an enormous incentive to go solar, not just to save money, but to create an energy and sustainability-conscious student body. Schools serve as stewards of sustainability and cornerstones of green initiatives that benefit their community by educating their students on the environmental challenges we are facing.

## IPS Solar's Sunrise Program

IPS Solar embraced the opportunity to educate the next generation of energy leaders and created the Sunrise Program. They offer schools complete STEM programs designed to spark students' curiosity and give them the tools they will ultimately need for success. Their Sunrise Program offers schools three approaches — classroom presentations, fully developed STEM curricula and professional development — that can be mixed and matched to best serve each community.

Another educational benefit for the schools: live online monitoring. Mike Cartwright, science teacher at Mounds View High School, reports:

"We use data from our rooftop solar in many ways and in a variety of classes at Mounds View High School, from economics analysis to particle physics. Our students get a hands-on education on how weather and other environmental conditions impact the school's electricity production. Our environmental science students are researching the economic comparisons of the cost of solar versus fossil fuel options. There are many other far-reaching educational opportunities presented by having solar on site."

## Spend Money On Your Students, Not Electricity Bills

Schools have an enormous incentive to go solar, not just to save money, but to create an energy and sustainability-conscious student body. With a solar system or subscription from IPS Solar, schools can save upwards of \$1 million on energy costs over 25 years.

*"The savings are huge because they go not into my budget but into the general budget where they can be used for books and stuff for kids." - Kevin Johnson, Director of Buildings and Grounds, Red Wing School District*

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## Minnetonka Schools Commits to Sustainability and Environmental Responsibility



*Daniel Campbell  
Content Marketing Strategist  
Minnetonka Public Schools*

Minnetonka Public Schools has made sustainability a top priority. From ensuring buildings are powered using renewable energy to offering courses that focus on sustainability, the school district is taking steps every day to be a leader in environmental responsibility.

In 2013, Minnetonka Schools earned the Environment Protection Agency's

ENERGY STAR Leader status, a rare designation that recognizes energy efficiency across all district buildings. Today, Minnetonka is working toward getting all of its energy from wind and solar sources through the power company's Energy Renewable Connect Program. So far, district buildings including Minnetonka High School, Minnetonka Community Education Center, the District Service Center and the District Technology Center have converted to 100 percent renewable energy through

the program. Additionally, six elementary schools and two middle schools are in the midst of signing off on renewable energy contracts with Community Solar Garden providers. Once finalized, 100 percent of Minnetonka Schools' kilowatt hours will be sourced entirely from wind and solar, and the district will save money in the process.

The district has also significantly reduced its overall energy usage by converting to LED lighting. First, lights in district parking lots were switched from 480-watt metal halide bulbs to 90-watt LED bulbs. Next, outdoor security lights were converted and then elementary classrooms. As of January 2019, all six elementary schools and Minnetonka Middle School East and West have converted to LED lighting. About 50% of Minnetonka High School has been converted to LED lighting—such as hallways, gyms, and the cafeteria—with the remainder in process. Data shows that our E-12 buildings are using less electricity in Fiscal Year 2019 than was used in Fiscal Year 2010, even though building square footage has increased and enrollment has increased.

Minnetonka takes its commitment to the environment a step further by offering courses like AP Environmental Science and Global Studies and Economics. Available through the high school's innovative

VANTAGE Global Sustainability program, these courses help students learn valuable concepts and perspectives, and then apply what they've learned to solve real-world problems. Through hands-on, project-based assignments with local companies and organizations—and by working one-on-one with a mentor in the community—students get a meaningful, inside look into this growing field of study.

In VANTAGE Global Sustainability, students learn to combine physical, biological and information sciences to the study of the environment and global economics. They are also presented with the unique opportunity to hear from guest lecturers at the forefront of the fields of corporate sustainability, food science, food security, food safety, water systems, waste system, energy conservation and others.

Students spend a year working on a variety of industry-driven projects, solving research problems and learning about the challenges of project-based work. They also learn about economic and policy implications of food sustainability, with an emphasis on the global nature of food production and its impact on communities and the environment.

Outside of the classroom, Minnetonka

**Continued on Page 16**



## SSP School Board Gives Go-Ahead for Installation of Solar Panels



*South St. Paul Public Schools*

At their meeting on Jan. 28, the South St. Paul School Board approved entering into an agreement to install solar panels at Kaposia Elementary. The action is the culmination of nearly a year of research and negotiation to assess the viability and sustainability of such a project.

In April 2018, the South St. Paul School Board approved a non-binding letter of intent to work with the State of Minnesota, Department of Administration – Office of Enterprise Sus-

tainability (OES) to share information, evaluate potential options, and perform site visits on the subject of installing solar panels in the district. Through this process, the district identified Kaposia Education Center as a potential site of solar panels, given the age and structure of the building.

Last fall, interested solar developers were required to submit proposals to OES, which then identified a preferred vendor, IPS Solar. South St. Paul Public School representatives from district administration and school board,

met frequently with IPS Solar to determine the viability of the project and alignment with district strategic directions and resources.

Director of Finance Aaron Bushberger and Director of Buildings and Grounds Glen Birnstengel were involved in many of the conversations over the last year about whether solar was a good option for South St. Paul Public Schools (SSPPS). "We have participated in many meetings with the Solar Possible team and IPS Solar, and engaged with our architects, roofing companies, insurance agent and other school districts who are participating in a solar program, to determine whether this was a good decision for our district," Bushberger said. "Overall, we were impressed with the knowledge, experience and passion the representatives from IPS showed, and we are excited to be able to move forward."

The School Board reviewed the proposal and engaged in extended discussions about the proposal. According to Birnstengel, in the end, it was determined that "there are projected cost savings by implementing this project, with very limited downside risk. Not to mention an improvement in energy efficiency with a commitment to more sustainable and environmentally conscious energy production." He noted that the panels are lightweight, compact and will not be visible from the ground level. And when asked about negative impacts to the

roof of the building, company representatives noted that in their almost 30 years of experience, they have not had any roof issues after installing solar panels.

According to Superintendent Dave Webb, the benefits of the project reach beyond operational savings. "IPS has a number of school clients, and as a result, has developed a curriculum and professional development program around solar energy specifically tailored to schools," he said. "And there is a potential alignment with our STEM and IB curriculum and focus areas, engaging our students in real-world learning experiences."

SSPPS has been participating in the solar initiative through CERTS (Clean Energy Resource Teams). CERTS is a joint venture between the University of Minnesota, the Minnesota Division of Energy Resources and the Great Plains Institute. The initiative is for a collaborative solar purchasing program for State agencies, local governments and school districts.

The new solar panels are expected to be installed in the spring of 2020.

[www.sspps.org](http://www.sspps.org)  
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## CIS Students Conduct Science Show



Paul Downer, Communications Coordinator  
Superintendent/School Board Assistant  
Delano Public Schools

Flashes of fire, volcanic eruptions and an ear-splitting explosion kept kindergartners entertained as high school chemistry students became the teachers in the first ever Science Show at Delano Elementary on Tuesday, June 4.

With seniors having graduated over the weekend, College in the Schools Chemistry instructor Karen Hohenstein brought her

remaining junior students up the hill to demonstrate some of the wonders of science to their younger counterparts.

"It was fun to be on the other side of it and see their faces," said student Spencer Poll. "After a really rigorous two semesters we kind of get to take a break and have some fun with this."

Hohenstein explained that the show was the idea of kindergarten teacher Meredith Huikko, who asked if the high schoolers would be available to put on the show.

"I met with my students and we brainstormed demonstrations they've done and seen," said Hohenstein. "Then we practiced them and wrote up scripts that would be appropriate for 5-year-olds. We came up yesterday, set up the room, practiced it, and today we're doing the show."

Kindergartners were issued lab goggles as they entered, and alternately gaped in wonderment and laughed along as the demonstrations unfolded during both a morning and afternoon show conducted by two different CIS classes.

"The kids were very excited to have us," said Hohenstein. "The noise level just went up with everything we did, so it was super fun."

Chemistry student Stephanie McClelland said the course wasn't easy, but the show was a fun way to close the year.

"You had to be organized and dedicated and time-efficient, but it was a good challenge," she said. "And now we got to show off some of what we've learned."

Hohenstein agreed that the event was a great opportunity for her students, but said that staging the performance included its own challenges.



"It forced my students to think about how they would explain complicated science phenomenon to younger students," she said. "Breaking down difficult ideas into simpler language isn't always easy, but they did a great job explaining and interacting with the kindergartners. For me, it was just as fun to watch the little kids as it was to watch the big kids."

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## The New Prague Way: Show People You Care by Helping Others Be Successful

### New Prague Area Schools

Sometimes the greatest discoveries are found when you aren't looking for them. For the New Prague Robotics team, a new advisor and team member have brought a vision to the entire team that truly exemplifies The New Prague Way: Show People You Care by helping others be successful.

Team advisor Dan Cross, is a software engineer with over 40 years of experience in the IT world. He has also been involved with Community Theater for many years, helping out with the technical side of things. In 2010, he was hired to run lights and sound for all events held in the HS auditorium. He got acquainted with robotics through this work.

"One of our productions needed a number of 'inventions' for the set," said Cross. "A cast member, who was also in robotics, suggested that the team could design and build some of them. Through those students, I learned about the robotics program and became a mentor." This fall he took on the role of advisor to further help the team.

The purpose of the robotics team is to create a multifunctional robot that will complete a specific task. Every January the team is given a challenge and they have six weeks to conceptualize, design, build, and test their robotic solution. They then compete in a contest held by FIRST Robotics Competition (FRC).

This year's team is 27 members strong. In addition to developing the skills to build a robot, the student-driven group gains hands-on experience by applying real-world skills. Members do their own fundraising, budgeting and marketing each season. "Every single person, no matter how large or small their role is, has a responsibility in making the team successful," Cross said.

This year the team has a new member that is helping them see their challenge in a whole new light. Sam Tupy, a junior at NPHS, joined the team this fall. Most people would consider him a programming genius, but that's not his most valuable contribution to the team. Sam is visually impaired and has always lived without the benefit of sight. It's this visual challenge that has helped his teammates gain clarity on daily, as well as robotic, challenges.

"We take so much for granted," said robotics team member Grace Madson. "It's so cool having Sam on the team. I think he's helped us a lot more than we've helped him."

Grace and teammates Max Redfearn and Stevie Bowman, along with Cross, were trained to be sighted guides for Sam and help him navigate the various meetings and conferences they attend as a team. "At our last conference, we brought components along so Sam could feel what the presenters were talking about," said Cross. "The kids helped Sam with this so he could participate more fully."

"My teammates have been great," said Sam. "It's fun just hanging out with people because most of my social interaction has always been online. I enjoy being able to go places now with the team like Noodles and Co., because before I never got to go places without an adult."

Along with the freedom of hanging out with kids his own age, Sam enjoys the challenge of robotics. "I've always had a fascination with translating computer code to make something physically move," said Sam. His fascination with programming has turned him into an entrepreneur. When he's not in school, Sam creates audio games for the visually impaired and sells them around the world, meeting a need he knows firsthand.

"Sam brings a new perspective that is good for us," said Bowman. "We've had to think about how the visually impaired access computers. We see things and then think about how to describe it to him – this forces us to think about things a lot more. It pushes us as a team and brings greater depth to our process."



The goal of robotics is more than just to make a robot that works, it's to bring together a group of young minds to build a team and a robot that will both compete and work with others.

"That's the kind of kids we have," said Cross. "They want to help each other and in doing so, have pushed themselves to think deeper and grow individually and as a team."

[www.npaschools.org](http://www.npaschools.org)  
(952) 758-1700



## Join the STEM Movement. **Wherever** you are. **Whoever** you are.

**eCYBERMISSION** is a web-based STEM competition for students grades 6-9 sponsored by the **U.S. Army Educational Outreach Program**. **eCM** is looking for educators, community leaders, parents, and professionals interested in STEM to create teams of students.

### REGISTRATION IS NOW OPEN!

Visit [ecybermission.com](http://ecybermission.com) to register and complete your teams by November 20<sup>th</sup> and your students will receive a FREE STEM Kit.

### VOLUNTEERS NEEDED!

Visit the site to learn more.

**Accept the Challenge.**  
**Join the Mission.**



**eCYBERMISSION**  
ACCEPT THE CHALLENGE





## Jessica Lipa, Anoka-Hennepin's Director Of Career and Technical Education, Earns State Award



Anoka-Hennepin School District

Jessica Lipa loves her job, which works out because she's good at it. But winning awards for doing that job — well that makes her a little uncomfortable.

"We have an incredible group of talented teachers here in Anoka-Hennepin," she said. "So to earn an award — it's just surprising."

Lipa is director of Anoka-Hennepin's Secondary Technical Education Program (STEP) as well as career and technical education districtwide. And during a luncheon on Sept. 27, she'll be accepting the 2019 Professional Support: Administration Recognition award from the Minnesota Technology and Engineering Educators Association (MTEEA). The award recognizes an administrator who demonstrates significant commitment and support for technology education.

"It's such a surprise, honestly," Lipa said. "I'm super honored — I'm excited, but here at STEP and around the district, I'm not the one doing the work. I might be guiding our career and technical education work, but the teachers are doing the heavy lifting. They deserve recognition for their hard work, too."

STEP bills itself as a high school in a college setting where students in grades 11 and 12 can explore hands-on technical and manufacturing careers while earning both high school and college credit. It's located on the Anoka Technical College campus, and shares facilities, equipment, and supplies with the college. The school has 700-800 students each trimester, who come from all five of Anoka-Hennepin's five traditional high schools (Andover, Anoka, Blaine, Champlin Park, and Coon Rapids). Most are part-time students, which means they take core classes at their regular high school, and then come to STEP at some point during the day for technical and manufacturing studies.

Over the last few years, the STEP program has garnered a lot of national attention for its career and technical education work. Both U.S. Sen. Tina Smith (D-Minn.) and U.S. Deputy Secretary of Education Dr. Mick Zais visited the campus in 2018 during separate events, intrigued by what makes the program successful and looking for ways to

support and replicate it around the state and nationally.

"I'm honored to get an award like this, but this group of tech-ed teachers — they're super talented," Lipa said. "My job is to be a support system for them. They're the rock stars."

MTEEA as a state organization is dedicated to providing technology and engineering educators with professional development, quality resources and best practices.

[www.ahschools.us](http://www.ahschools.us)  
(763) 506-1000

## Sustainability and Environmental Responsibility at Minnetonka

Continued from Page 10

offers extra-curricular programs like Minnetonka High School's Earth Club to engage passionate students in helping the environment and sharing their enthusiasm with their peers and the community. Under the advisement of science teacher Beowulf Boswell, Earth Club members bring information, and important messages around sustainability, to district classrooms and the community.

"Earth Club is an action group," said Boswell. "We do things that will benefit society and the environment." The Earth Club holds events and leads projects throughout the year. On Earth Day, students handed out strips of paper with tips on how to better care for the environment. And on the back of the strips were seeds that students were encouraged to plant at home.

Boswell knows that Earth Club members work hard to help the world around them. When asked why he likes being the advisor for Earth Club, Boswell said, "It is very refreshing and motivating to be around a lot of hardworking students that put others before themselves."

Sophomores in the club have developed a plastic initiative in which they aim to reduce plastic consumption at the high school. Other activities planned for the year include participating in climate-related educational panels, rallies and service projects

such as the Rake-A-Thon and Trash to Treasure.

"Minnetonka is doing great things for sustainability," said senior Gabi Tan, president of the club. "I love Earth Club because everyone has the same passion and compassion for protecting the world we live on. These shared ideals have built a really strong community between us."

The Earth Club has partnered with other organizations to reach an even broader audience including other schools, Eagle Scouts, and cities. For example, Minnetonka Earth Club and Hopkins Earth Club leaders are working together with the local government to instill programs that will reduce carbon emissions long term. The club also offers reusable bags at grocery stores to help reduce the reliance on plastics.

From buildings and grounds to classrooms and after school clubs, the mission of sustainability runs deep at Minnetonka Schools. The Earth Club's motto perhaps says it best. We are all "people of the planet, for the planet."

[minnetonkaschools.org](http://minnetonkaschools.org)  
(952) 401-5000



## Park High School Inventor Space Celebrates Successful First Year

South Washington County Schools

More than 300 students had the opportunity to learn project-based STEM skills through the new How to Make Almost Anything course at Park High School during the 2018-19 school year. The course began after community partners stepped up to provide the school more than \$167,500 in funding for technology to use in their new Inventor Space.

The Inventor Space features high-tech software and equipment, similar to what is used in workplaces in Washington County. Among the programs students have access to are Adobe Illustrator, AutoCad, Fusion 360, Slicer for Fusion, GrabCAD and Thingiverse. Students in the How to Make Almost Anything class can also use a variety of tools including 4 MakerBot Replicators, 1 Stratasys U Print, 1 MDX - 50 CNC Milling Machine, Vinyl Cutter and Universal Laser Engraver.

"Our goal is to help provide students with opportunities for high-paying, skilled careers in their home communities," said outgoing Park High School Principal Ginger Garksi. "We are grateful for our community partnerships that can help support our students in this way."

"South Washington County Schools is incredibly grateful to our community partners



who made the vision for the Inventor Space a reality," said Superintendent Keith Jacobus. "With the new space, we are confident we will be able to ignite a passion for lifelong learning with personalized lessons in STEM fields."

The *How to Make Almost Anything* course is the first step toward a new Manufacturing Pathway that will eventually be offered at Park High School. The goal of the pathway, is to create opportunities for students to earn certificates, stackable credentials and college credits before earning their diplomas.

[p hs.sowashco.org](http://phs.sowashco.org)  
(651) 425-6300

# Apply for a Grant



## Go Green Minigrants

Peace, Love & Planet awards Go Green Minigrants as seed money for environmental initiatives that are school based and led by students. Projects should encompass the core values of reduce, reuse, recycle, and respect for nature; have measureable outcomes; and be approved by the school principal.

Awards range from \$50 to \$400, with total funding of \$2,500.

**Deadline:** Applications are due November 22, 2019.

**Website:** [www.peaceloveandplanet.org/calendar](http://www.peaceloveandplanet.org/calendar)

## H2O for Life Project Minigrants

The mission of H2O for Life is to improve local and global communities by engaging students as change-makers for a better world. Minigrants are intended to kick-start service-learning projects focused on the global water crisis and to benefit partner schools. Grants may be used for service-learning project expenses.

Awards range from \$250 to \$500.

**Deadline:** Applications are accepted on a rolling basis through December 31, 2019.

**Website:** [www.h2oforliveschools.org/page/kickstart-your-project-with-a-grant](http://www.h2oforliveschools.org/page/kickstart-your-project-with-a-grant)

## Project Produce: Fruit and Veggie Grants for Schools

The purpose of Project Produce is to create planned lunchroom activities to showcase and taste fresh vegetables and fruits. Proposed projects must be planned with the intention of offering activities to all students in the school building. Lunchtime-based projects are preferred because they offer access to all students.

Grants of \$2,500 are awarded.

**Deadline:** Applications are accepted year-round.

**Website:** [www.chefannfoundation.org](http://www.chefannfoundation.org)

## Community Action Grants

AAUW (formerly American Association of University Women), through its Community Action Grants Program, provides funds for innovative programs or non-degree research projects that promote education and equality for women and girls.

One-year awards range from \$2,000 to \$7,000, and two-year awards range from \$5,000 to \$10,000.

**Deadline:** Applications are due December 1, 2019.

**Website:** [www.aauw.org/what-we-do/educational-funding-and-awards/community-action-grants](http://www.aauw.org/what-we-do/educational-funding-and-awards/community-action-grants)

## School Garden Grants

Safer Brand offers School Garden Grants to schools that want to create and start a school garden. Interested schools should explain their reasoning for a school garden and how they would use the grant.

Grants of \$500 are awarded.

**Deadline:** Applications are accepted September 1 through December 1, annually.

**Website:** [www.saferbrand.com/articles/how-to-start-a-school-garden](http://www.saferbrand.com/articles/how-to-start-a-school-garden)

## Shumann Foundation Grants

The Robert F. Shumann Foundation awards grants to programs in education and those emphasizing environmental sustainability, particularly open-space habitats; arts, culture, and humanities; and animals, particularly birds and ornithology studies.

**Deadline:** Applications are accepted year-round and are due February 28, annually, to be reviewed at the annual grant meeting.

**Website:** [www.wellsfargo.com/private-foundations/schumann-foundation](http://www.wellsfargo.com/private-foundations/schumann-foundation)

## Air Force Junior ROTC Grants

The Air Force Association Junior ROTC (AFJROTC) grant program was established to

promote aerospace education throughout classrooms and units. Applications are judged by the importance and the impact the selected aerospace activity will have on students. Funds may be used for any aerospace education related activity from purchasing textbooks or videotapes, to going on a field trip to an aerospace museum, Air Force base, or other aerospace facility.

Grants up to \$250 are awarded.

**Deadline:** Applications are due February 10 and October 10, annually.

**Website:** [www.afa.org/education/air-force-junior-rotc-grants](http://www.afa.org/education/air-force-junior-rotc-grants)

## The Harry Chapin Foundation Education Grant

The Harry Chapin Foundation makes grants in the areas of education, arts, agriculture, and the environment. Priority is given to arts-in-education programs and community education. Previous grants were used to fund high school community outreach, and projects targeting at-risk youth.

Grants up to \$10,000 are awarded.

**Deadline:** Applications accepted year-round.

**Website:** [harrychapinfoundation.org/apply/](http://harrychapinfoundation.org/apply/)

## Webb Family Foundation Grants

The Webb Family Foundation makes grants in the areas of education; youth development; career and workforce readiness; financial literacy; entrepreneurship; science, technology, engineering, and mathematics; digital and blended learning; and youth mentorship.

**Deadline:** Letters of Inquiry are accepted year-round.

**Website:** [webbfamilyfoundation.org/learn-how-to-apply/learn](http://webbfamilyfoundation.org/learn-how-to-apply/learn)

## Japan Foundation Center Grants

The Japan Foundation's Center for Global Partnership offers Education Grants for projects designed to increase awareness and understanding of Japan in the United States by addressing the needs of students and teachers in kindergarten through grade 12. Funds support teacher training, curriculum development, and community outreach efforts.

Grants up to \$5,000 are awarded.

**Deadline:** Applications accepted year-round.

**Website:** [www.cgp.org/education\\_grants](http://www.cgp.org/education_grants)

## Tina B. Carver Fund

Established in memory of a longtime English as a Second Language (ESL) educator, the Tina B. Carver Fund provides grants to teachers for funding student classroom learning materials and teacher materials (e.g., ancillary materials that can be used in conjunction with textbooks or other instructional materials) to support adult ESL education programs in the United States.

Grants up to \$400 are awarded.

**Deadline:** Applications are due January 31, May 31, and September 30, annually.

**Website:** [www.tesol.org/enhance-your-career/tesol-awards-honors-grants/teaching-materials-grant](http://www.tesol.org/enhance-your-career/tesol-awards-honors-grants/teaching-materials-grant)



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## From the Blog

[teachingtodaymn.wordpress.com](http://teachingtodaymn.wordpress.com)

### Updated Master's Program in Educational Leadership at University of Wisconsin-River Falls

The University of Wisconsin-River Falls is pleased to announce the re-launch of an updated educational leadership master's program called MSE-Professional Development Learning Community. By building leadership skills, this Master of Science in education degree readies teachers and other educational professionals to meet the challenges of today's schools and society.

### Lineworker Students Aim to Climb High at M State

Every morning when Cameron Niemela looks out his window, he's reminded why he opted for M State's Electrical Lineworker Technology diploma program in Baudette.

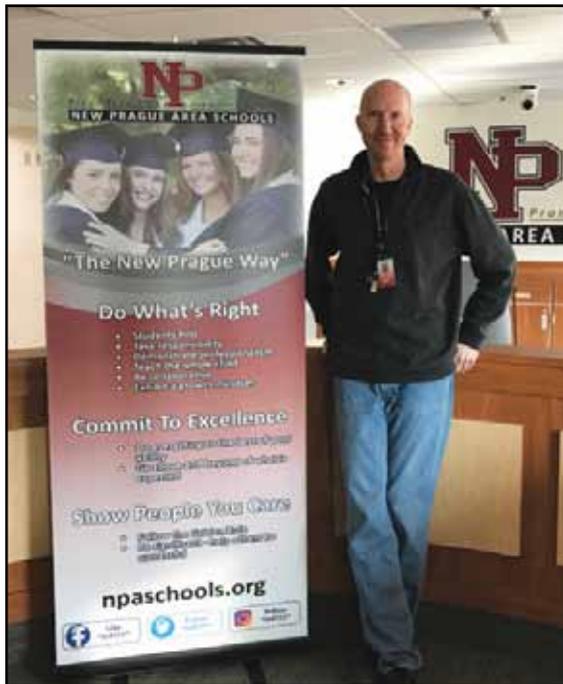
"I really like climbing," says McHugo, who uses the word "exhilarating" a lot when he talks about the training he and his fellow students are getting. His goal is to work some day in the industry in Montana.

### The Benefits of Partnering with IPS Solar

For the past decade, IPS Solar has helped school districts and universities all across Minnesota transition to solar power. Over 50 schools are currently saving on energy costs each month, reducing their carbon footprint, and providing their students with unique educational opportunities.



## From Dish Room to Class Room



New Prague Area Schools

Finding long-term substitute teachers is challenging for any school district. Finding long-term substitute teachers for specialized classes like art can sometimes be almost impossible. When faced with this situation right before the start of school last fall,

NPAS got creative and found a solution in the unlikelyst of places — the dish room.

“We had a high school art position open due to a maternity leave. It was posted for more than six weeks without receiving a certified teacher application,” said Lonnie Seifert, NPHS Principal. “I contacted retired teachers and local individuals to see if they were interested. Local colleges were also contacted for any potential candidates without any luck.”

Not wanting to have to cut classes from the schedule, Seifert worked with Kim Franta, Director of Nutrition Services, to explore the possibility of offering the job to one of her star employees — Eric Schmid, who has an art degree from St. John’s University.

“Eric works in our dish room and helps serve food at lunch time,” said Franta. “He is a wonderful person and the kids love him. I knew he could connect with them in the classroom as well.”

When offered the position, Schmid stepped up to the challenge. “My degree was

not in teaching, so I was a bit nervous but I said I would do my best to help out,” said Schmid.

The district supported Schmid with working through the licensing process. Detailed lesson plans were provided and another art teacher in the building, Barb Prchal, was there to help. “The lesson plans were very well organized and I got a ton of support from Barb and everyone in administration,” said Schmid.

Schmid taught three classes: Ceramics, Graphic Design and Design Foundations, along with a study hall. “My main goal was to have a personal connection with the kids and I think I did that,” said Schmid. “The kids did very well and I enjoyed working with them. I hope they learned something along the way.”

“Mr. Schmid was always super kind and so happy every day. He always asked how our day was going and seemed genuinely interested in getting to know all of us,” said NPHS senior Amanda Vivant. “It was nice to come to class every day to a smiling face. I think he was nervous about teaching but he did a really great job at it! He went with the flow and helped us all out. I think the thing about him that impacted me the most was his kindness and positivity. I never saw him get angry in class and it was a relief knowing we

could come to class and just relax and have fun learning about ceramics with him.”

“The biggest thing Eric did was be himself with his classes,” said Seifert. “He worked to build relationships with his students and share the knowledge he had in the area of art. He was also honest when he didn’t know something and would work to find the answer for them.”

Schmid has since returned to the dish room, where they were happy to have him back. “Teaching was an interesting experience and I’m glad I did it. It’s fun to see the kids that I had in class in the lunchroom now and know them on a personal level.”

“Eric is a gem of a person,” said Franta. “Everything fell into place because of his willingness to help out and he demonstrated perfectly the New Prague Way of going above and beyond what is expected.”

[www.npaschools.org](http://www.npaschools.org)  
(952) 758-1700



## Deaf and Hard of Hearing Students Find Fun and Acceptance Together



Edina Public Schools

Gathered in the North Gym at Edina High School, students circled up after enjoying a dance session with some of the high schoolers on the hip hop team. The district’s deaf and hard of hearing (DHH) students gathered for a day of community bonding and self-acceptance activities. Leading the day was the DDH team: Jennifer Duncan, Molly Krenz, and Hawley Mathieson.

“There used to be a large gathering that happened in St. Paul,” Duncan said. “For a

variety of reasons, the event is no longer happening. But we thought to ourselves, why don’t we host one for our own kids?”

This thought became a reality with a grant received from the Edina Education Fund. The funding supported the day’s activities and they were able to purchase matching t-shirts for every student. “Without the grant, we really wouldn’t have been able to afford to do this day,” Krenz acknowledged.

DHH Day was full of activities, from hip hop dancing, a photo booth and gym games, to

get-to-know-you bingo and a presentation from a speaker. During their time with the speaker, the students wrote some of their worries on balloons and with a tennis racket in hand, smacked away the worry balloon and spoke against their worry. The speaker read one of the balloons. “I’m worried that people will get mad at me if I can’t hear them.” She then encouraged them to brainstorm responses to that worry. “You just have to tell them, I was born this way,” offered one of the students.

Another chimed in, “It’s not weird — that’s just the way it is.” The speaker praised their courage and responses, and the students beamed as they smacked away the worry balloons. “That’s just the way it is!”

Mathieson said these moments are stepping-stones for building self-confidence in DHH students. “Often times, students feel like they don’t belong. Most are the only ones in their grades with hearing loss — a lot of times,

they are the only one in their school.”

Along with their own personal device, students typically bring an FM system to their classes to give to their teacher to use, so the

teacher’s voice goes directly into their devices and they can hear. “When they feel different, it makes it hard for them to feel confident.”

Days like this show students that they are not alone. The leaders encouraged the students to “be the boss of their hearing loss” and “make brave choices.” All day,

students bravely tried new activities, shared specifics about their hearing loss, fought their worries, and found a community of fellow kids like them.

**“Days like this show students that they are not alone. The leaders encouraged the students to be the boss of their hearing loss and make brave choices. All day, students bravely tried new activities, shared specifics about their hearing loss, fought their worries, and found a community of fellow kids like them.”**

[www.edinaschools.org](http://www.edinaschools.org)  
(952) 848-3900





## Just A Carolina Girl Teaching STEM

St. Cloud area School District

Dr. LaChanda McGuire, new STEM (Science, Technology, Engineering and Math) integrationist at Discovery Community School and Madison Elementary School describes herself as just a “Carolina girl” from South Carolina. It’s her roots from the South that stirred her passion for education, particularly in the sciences.

“I grew up in a home where education was valued,” explains McGuire. “My mom ran a daycare out of her our home and it was my first exposure seeing my mom as a mom, but also as a teacher. She had a very strict and rigid structure . . . So, I had a chance to be a part of that experience, and education just grew on me through that experience.”

It was later in high school when McGuire toyed with the idea to be a scientist, doctor and teacher. Her high school biology teacher really captured her attention through lab investigations. She then realized during the transition between high school and college that being a doctor wasn’t a fit for her. The realization came from a summer science program that connected her with Duke University to do research in the neonatal department.

“It was a test of my strength,” remembers McGuire. “During the day we were studying inflammatory diseases with mice,

and at night, we went over to the hospital and saw how that one inflammation was a part of preemies. During that experiment, I thought, ‘Um, maybe I could keep with the science and the research but not so much the medical practice.’”

She graduated from college and moved through many grade levels teaching and then began working at a preschool as its assistant director. She eventually became the director. Through that lens, she noticed the curriculum wasn’t quite full. As a scientist, she felt the experimental science piece was missing. McGuire enlisted the help of one her teachers, and then preschoolers began science investigations in school. It was a success.

“That’s when I realized how much I missed science and how I wanted to be in public education,” smiles McGuire. “That led me to teaching middle school science, and from middle school, I went to a residential high school that was all STEM. In that experience . . . it allowed me to go out to elementary, middle and high schools working with students and teachers to do STEM investigations. I’ve always had that niche for young children.”

Now at Discovery and Madison, she works with kindergarten through fifth-grade piquing curiosity and engaging students through STEM investigations.

“They’re curious!” says McGuire. “They want to know how things work, how it happens, even if they can’t see it. Sometimes they make their own assumptions of how things work based upon their own experiences. For me, it’s so satisfying to see that light bulb come on and their little brains turning and coming up with answers. . . . They get it.”

McGuire runs STEM investigations every day in her classroom. Her kindergartners are just finishing up with wood, and their next unit will be fabrics. On the side, McGuire is a fashionista through and through. She has journals upon journals of fashion sketches she’s done since childhood which she hopes to have in a boutique one day. She has one garment she created that she’ll share in her class.

McGuire feels she is in a position to impact young children just as the need for more STEM professionals is at an all-time high. There are hundreds of thousands of STEM jobs that can’t be filled due to a lack of workers. Her goal this year is to focus on engineering concepts to produce critical thinkers, creative problem-solvers and team collaborators. The future is filled with STEM jobs – some that already exist and some that don’t. McGuire knows that this is the age to get students thinking about their future.



One day these young students will be the next generation who can say “I’m just a Minnesota girl (or guy)” who . . .

[www.isd742.org](http://www.isd742.org)  
(320) 370-8000



## Student Contests and Awards

### *eCybermission Competition*

eCYBERMISSION is a web-based science, technology, engineering, and mathematics (STEM) competition for students in grades six through nine that promotes self-discovery and enables all students to recognize the real-life applications of STEM. Teams of three or four students are instructed to ask questions (for science) or define problems (for engineering), and then construct explanations (for science) or design solutions (for engineering) based on identified problems in their community. Students compete for State, Regional, and National Awards.

**Deadline:** To receive a free STEM kit, register by November 20, 2019.

**Website:** [www.ecybermission.com](http://www.ecybermission.com)

### *National Science Bowl*

The US Department of Energy (DOE) National Science Bowl (NSB) is a nationwide academic competition for middle and high school students that tests knowledge in all areas of science and mathematics. It was created in 1991 to encourage students to excel in mathematics and science and to pursue careers in those fields.

**Deadline:** Regional competition dates vary, but are typically between January and March. See the website for specific dates. The national competition will take April 25 through 29, 2019; and April 30 through May 4, 2020.

**Website:** [www.energy.gov/science/wdts/workforce-development-teachers-and-scientists](http://www.energy.gov/science/wdts/workforce-development-teachers-and-scientists)

### *Toshiba/NSTA ExploraVision Competition*

ExploraVision is a science competition that engages student teams in research and development with a strong emphasis on science, technology, engineering, and mathematics (STEM). Working in teams of two, three, or four members, students study a technology of interest and predict what that technology might be like in 20 years, and then explore what is necessary to make their visions a reality.

Each first-place team receives a prize of a US EE Savings Bond worth \$10,000 at maturity for each student. Each second-place team receives a prize of a US EE Savings Bond worth \$5,000 at maturity for each student.

**Deadline:** Projects are due February 10, 2020.

**Website:** [www.exploravision.org/what-exploravision](http://www.exploravision.org/what-exploravision)

### *World Series of Innovation*

The Network for Teaching Entrepreneurship’s (NFTE) World Series of Innovation, presented by The Moody’s Foundation, is a fun, experiential activity that allows students aged 13 to 24 to think creatively and invent new products or services that address everyday opportunities. All students are encouraged to participate to develop their creativity and innovative thinking skills.

Winning students in each challenge category receive \$1,800; two runners up each receive a \$300 cash prize.

**Deadline:** Online submissions are due December 16, 2019.

**Website:** [innovation.nfte.com](http://innovation.nfte.com)

### *National Geographic Bee*

Each year thousands of schools in the United States participate in the National Geographic Bee (Nat Geo Bee). The contest is designed to encourage teachers to include geography in their classrooms, spark student

interest in the subject, and increase public awareness about geography. Public, private, and home-schooled students, as well as Department of Defense Dependents Schools, in grades 4 through 8 are eligible for this challenging test of geographic knowledge.

**Deadline:** Registrations are accepted August 1, 2019 through January 24, 2020.

**Website:** [www.nationalgeographic.org/education/student-experiences/geobee](http://www.nationalgeographic.org/education/student-experiences/geobee)

### *C-SPAN’s StudentCam Video Documentary Competition*

C-SPAN’s StudentCam is an annual national video documentary competition for students in grades 6 through 12. Individual students or teams of up to three students create a short video documentary on the current theme. This year students are asked to create a short (5-6 minute) video documentary on a topic related to the competition theme, “What’s Your Vision in 2020? Explore the issue you most want presidential candidates to address during the campaign.”

**Deadline:** All entries must be uploaded by January 20, 2020.

**Website:** [www.studentcam.org](http://www.studentcam.org)



## Recipients of 2019 Silver Apple Awards Share a Deep Love of Teaching and the SSP Students They Serve

*South St. Paul Public Schools*

On May 17, South St. Paul Public Schools (SSPPS) students in two different classrooms had some surprise visitors. But the surprise was not just for them, as each teacher — Jessica Splittstoesser, Lincoln Center first grade teacher, and Colleen Volkmann, Kaposia preschool teacher — soon found out when a parade of adults and a photographer walked into the room. The day marked the annual presentation of the South St. Paul Educational Foundation's (SSPEF) Roxanne Bliss Silver Apple Award, which honors SSPPS teachers and staff who “reach beyond classroom walls” in their support of their students.

“What makes this award so special is that the nominations come from the students,” said Cari Vujovich, SSPEF executive director. “The award is a recognition of those staff members who go the extra step to make connections with kids and families in our community.”

South St. Paul (SSP) graduate Don Bliss, Class of 1950, established the Silver Apple Award in honor of his wife, Roxanne Waldhauser Bliss, SSP Class of 1951. The award was created to encourage students to “appreciate educators or support staff who are especially important to them,” Vujovich said. “It was their belief that school employees play

a very instrumental role in the future success of students.”

In February, all SSPPS students are encouraged to nominate a teacher or other employee who makes a significant difference in their lives. Awards are announced and presented in May. Each recipient receives a silver apple commemorating the award as well as a cash stipend.

### 2019 SSPEF Silver Award Recipients

**Jessica Splittstoesser,  
Lincoln Center grade 1 teacher**

The class was all huddled on the floor in front of the Smartboard for their morning meeting and daily discussion when a father of one Splittstoesser's students walked in the door. The first-grade teacher just thought it was another day with Calisi's dad visiting the classroom. But it quickly became apparent, as a parade of adults walked in behind him, that this was not just a normal Friday morning.

After Superintendent Dave Webb and Vujovich explained why they were there, Calisi, the student who nominated her, explained why Ms. Splittstoesser is so great. “She is nice. She always says ‘I love you.’ She also says ‘I want you all to be safe.’” As Calisi read the words, another student agreed out



loud, noting that Splittstoesser had just finished talking with the class a few minutes earlier about how she wanted them to be safe. “I miss her if she is gone” Calisi added. “She is the best teacher.”

Adding to the accolades was Calisi's father, who said, “As a parent, it's awesome to see how much she cares about the well-being,

growth and education of all of her class. It is evident in her words, actions and emails just how much she is invested in the children's future. My daughter feels loved and has grown tremendously this year.”

Splittstoesser, who has taught in SSPPS for five years, was clearly touched by the words of appreciation. Yet she was quick to note that her success and any impact she has is because of her students. “I can't be a good teacher without all of you guys,” she said as the students continued to sit on the carpet engrossed in every word she was saying. “We work hard to have fun and be respectful. We are a community in here. And I cannot do my job without this community. We are all the best!”

**Colleen Volkmann,  
Kaposia preschool teacher**

The four-year-old preschool program was abuzz with singing and dancing when the award presenters made their way into the classroom at Kaposia Education Center. Preschool teacher Colleen Volkmann looked at the group in bewilderment but kept on with the activity.

“Okay preschoolers, we have some special guests so let's take our seats,” she said.

**Continued on Page 21**



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## Maplewood Educator Named Recipient of \$15,000 Award for Excellence



Melissa Sonnek, a principal at Edgerton Elementary School, part of the Roseville Area and located in Maplewood, was surprised April 15 with the news that she is a recipient of a 2019 WEM Outstanding Educator Award for Ethics in Education, an honor that is accompanied by a \$15,000 award.

Sonnek is one of six educators being honored by the WEM Foundation and Synergy & Leadership Exchange for outstanding accomplishments and contributions to student

learning. She is one of two recipients of the WEM Foundation's statewide Ethics in Education Award, which recognizes educators who embody ethical behavior and promote ethical development for students through classroom or school activities, policies or curriculum.

Sonnek has been working in education for 20 years and currently serves as the principal at Edgerton Elementary School. She emphasizes that every student should have the tools they need to succeed. Working with staff, Sonnek helped to create "The Compass Room" – a place where students can go when they need to find their direction or need a break from the classroom. For example, some students need energy output (a trampoline, swing, etc.) while others need a calming environment (sitting in the egg chair or the tent). It is also a place that can protect dignity and privacy for dysregulated students. The school's behavior coach is also available to help students return to the classroom.

"Melissa is an incredibly gifted equity leader at Edgerton Elementary," said Jenny Loeck, director of secondary education for the Roseville Area Schools. "She leads with love, and her focus on building positive relation-

ships holds the key to improving achievement for all students."

In addition, Sonnek, in collaboration with the Maplewood Police Department, started a partnership program that formed a bridge between Edgerton and their local police officers. It includes positive interactions between students and police officers. Police officers are invited to play with students at recess, talk with students, give high fives as they wait for buses at the end of the day, join kindergarten play time, have lunch with students, participate in school assemblies and play games. The Maplewood police have since used this model and expanded this partnership to other schools

in Maplewood as well.

"Principal Sonnek has created many leadership teams so every diverse voice and perspective is heard," shared a colleague. "This encourages everyone to feel pride with our contributions and strengthens our sense of community. She is deeply concerned about students' and staff members' social and emotional development."

[www.isd623.org](http://www.isd623.org)  
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*Synergy & Leadership Exchange is a non-profit organization dedicated to fostering collaboration to advance the development of ethical citizens, providing educational resources, and celebrating achievement and best practices in Minnesota schools, businesses and communities. For more information on the WEM Outstanding Educator Awards Program and Synergy & Leadership Exchange, visit: [www.synergyexchange.org](http://www.synergyexchange.org).*

## 2019 Silver Apple Awards Continued from Page 20



It took a few moments for Volkmann, who has taught preschool in SSPPS since 2016, to realize that the special guests were actually there for her. "I don't even know what to say, this is all such a surprise," she said as Webb and Vujovich presented her with the apple.

Reading on behalf of Garrett, the student who nominated Volkmann, was Connie Garling-Squire, director of early childhood and equity. "She is teaching me a lot," said Garling-Squire speaking as Garrett. "She cares about me, tells me when I am doing good, and gives hugs and thumbs up when I am doing my

job." As the words were read, Garrett flashed a big smile of pride at his teacher. Volkmann returned the smile with tears in her eyes.

Then it was Garrett's mom's turn, saying, "She has been in contact about things to work on, ways to help at home, and really taken the time to make sure Garrett's first time at school and outside of his home environment has been a great experience. He is really enjoying it and learning a lot."

When asked what the award means to her, Volkmann was speechless. But when asked what she enjoys about teaching preschool, she was swift to respond. "I love the innocence and honesty of this age. They help keep me young," she said. "These children are our future. It is incredible how we get to plant the seeds and watch their love of learning grow."

At the conclusion of the pictures with the award presenters and her students, Volkmann insisted on getting a photo with the aides in the room. "I cannot do this without them," she said. "It is our award, not mine." A large group hug soon followed with Volkmann and her colleague — Paige Hillstrom, Shelly Lange and Holly Marchio. "This is yours too," she said to them as the group posed for another picture, each with a hand on the silver apple.

[www.sspps.org](http://www.sspps.org)  
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## Nominations open for 2020 Minnesota Teacher of the Year

Everyone remembers a favorite teacher, someone who motivates and inspires students for a lifetime. Minnesotans have the opportunity again this fall to nominate that unique educator for Minnesota Teacher of the Year.

Nominations are open and can be submitted online through Nov. 15. The 2020 Teacher of the Year will be named at a ceremony May 3, 2020, at the Saint Paul RiverCentre. The Minnesota Teacher of the Year also becomes Minnesota's candidate for National Teacher of the Year.

### Eligibility

Eligible nominees must meet these criteria:

- Teach in a public or nonpublic Pre-K through 12th-grade school or ECPE or Adult Basic Education program, working at least 50 percent of the time directly with students.
- Hold a bachelor's degree and a Minnesota teaching license.
- Have completed five years of teaching by the nomination deadline.
- Intend to teach during the 2019-20 school year.

### Selection Process

A selection panel representing Minnesota leaders in education, business and government chooses the Minnesota Teacher of the Year from individuals who are nominated and who then choose to become a candidate.

The Minnesota Teacher of the Year rep-

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resents the profession as an advocate for education and spokesperson for teachers. The Minnesota Teacher of the Year makes presentations, meets with policymakers and attends frequent meetings.

Peers, school personnel, parents and students may nominate teachers. Many nominees come from school district-level Teacher of the Year programs throughout the state.

Anyone may nominate a teacher. Self-nominations are also accepted.

The state program has been highly successful nationally — Minnesota ranks third in the nation with four National Teachers of the Year.

Once nominated, teachers will receive a packet in the mail containing instructions for moving forward in this process. Learn more about how to become a candidate for MN teacher of the year. Note: Nominees only can accept nominations in any two consecutive years.

Nominations are due by Nov. 15.

For more information or to receive a paper nomination form, call Ashley Behrens at 651-292-4862 or 800-652-9073.

[www.educationminnesota.org/news/awards/teacher-of-the-year](http://www.educationminnesota.org/news/awards/teacher-of-the-year)



## David Law Named 2019–20 Minnesota Superintendent of the Year



### Anoka-Hennepin School District

Anoka-Hennepin School District Superintendent David Law has been named 2019–20 Superintendent of the Year by the Minnesota Association of School Administrators (MASA). Law was presented the award Oct. 7, the first day of the organization's annual two-day conference.

"It's just an incredible honor," Law said of being named Superintendent of the Year "But this is a recognition of the great staff in our system. This is a reflection of the 7,000 employees in our school district doing great things for kids. So I'm hoping to use this to

showcase the great work happening all over our system."

This year's award is the 32nd MASA has bestowed, and it's the first time an Anoka-Hennepin superintendent has won. Any of the state's more than 315 superintendents can be nominated, and in Law's case, he was nominated by five different people.

"It's incredibly humbling when so many people appreciate the work you do and also take the time to nominate you for something like this," he said. "So I felt like I needed to go through the process."

And the application process is intense, which Law said included writing 1,000-word essays that really drilled into some of the work he's led during his time in Anoka-Hennepin, including ways the district has addressed achievement, equity, and culture.

"We've done a lot of things during my time here to make sure every student feels connected to school," Law said. "We've provided different supports for students, we've provided different course work, and we've provided forums to connect with students and ask them what they want from our school system — it's one of the things that I'm really proud of."

Gary Amoroso, MASA's executive director, said he wasn't surprised that Law received the honor.

"Within our association, I interact a lot with him, and David's focus is always to be as inclusive as we can. He wants to make sure all voices are heard," Amoroso said. "And that demonstrates a strong understanding by our members to his commitment to public schools and the students he serves."

All told, eight superintendents were nominated to be superintendent of the year, Amoroso said. Those nominees who go through the application process then have their submissions screened by a number of Minnesota's professional educational organizations which MASA works with, including the state teacher's union, Education Minnesota, both the elementary and secondary principal associations, the school board association, among others.

"When you rise to the top in the eyes of those individuals and those groups that we serve — that's a monumental statement," Amoroso said. "To be selected by such a broad spectrum of constituents says a lot about David."

With winning, over the next year, Law will be asked to participate in speaking engagements around the state that focus on educational topics. In addition, Law will be in the running for the National Superintendent of the Year award, which will be presented in February by the National Association

of School Superintendents, also known as AASA.

Law has been superintendent of Anoka-Hennepin schools since 2014, and is a district alumnus, having graduated from Coon Rapids High School in 1987. From there he earned a bachelor's degree in mathematics from Hamline University, in Saint Paul, and then a law degree. He then completed his superintendent's licensure. During his educational career, Law has been a teacher, assistant principal, principal, assistant superintendent, and superintendent.

MASA is a private, nonprofit member service organization representing Minnesota's educational administrators, including superintendents, directors of special education, curriculum and technology leaders, central office administrators, and higher education administrators and professors. The organization supports excellence in professional practice, enhances the leadership networks of members, and provides members with a variety of valuable benefits.

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Congratulations to Augsburg graduate **Kelly D. Holstine '11 MAE** who was named the **2018 Minnesota Teacher of the Year** by Education Minnesota.



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Abdul Wright '16 MA-Education, 2016 Minnesota Teacher of the Year

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