



Edina Public Schools Receives 2019 Environmental Leadership Award



Edina Public Schools

Edina Public Schools (EPS) has received the 2019 Environmental Leadership award for adopting “cutting edge techniques” for snow and ice management. The district was recognized during the 2019 Road Salt Symposium.

In 2014 the District Buildings and Grounds team observed considerable inefficiencies with salting. Instead of relying on equipment to clear snow and ice, staff were using substantial amounts of salt for walkways and parking lots. “We used 84 pallets of salt in 2012 and we simply did not have the storage capacity for them,” Curt Johan-

The reduction in salt has allowed EPS to decrease the harmful effects it has on groundwater. Johanson is proud that he is doing something great for the environment. “I know that when I go home, excessive salt is not going through the grass or waterways,” he said. “I feel like I’m contributing to making our world a better place to live.”

son, buildings and grounds manager, said. Eric Hamilton, director of buildings and ground, and Johanson began by researching new snow removal equipment. EPS invested in a Toolcat and a Ventrac with broom attachments for most of the district sites. The new equipment allows staff to clear paths to the concrete or tar surface.

Along with the equipment, Buildings and Grounds staff attended Smart Salt training offered by the Minnesota Pollution Control Agency. The training helps to improve operator effectiveness and reduce chloride pollution. Grounds staff and building heads were able to receive Smart Salt certification through the training.

The efforts to reduce salt usage even inspired Brent Kaley, district-wide grounds supervisor, to create his own salt brining system. “We saw the city using a salt brine on the ground, which led my former supervisor and me to create a tank and our own system for applying salt brine,” said Kaley. “Initially

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CATE Can't Wait at Albany Area Schools

Steve Stromme
Communications Specialist/
Work-Based Learning
Coordinator
Albany Area School District

Located in the heart of Central Minnesota, the Albany Area School District is composed of five rural communities: Albany, Avon, Farming, Saint Anthony, and Saint Martin. With over 1,750 students K-12, the district has a strong tradition of preparing students for life after high school, whether they are headed off to the world of work, a two-year college, or a four-year college experience. It is a school district that boasts of exceptional community support for its children’s future. The evidence? In 2015, district voters passed a \$33 million dollar building referendum—one buttressed by over \$6 million dollars of donations from area businesses — by a vote of 81%–19%.

A winning margin such as this is practically unheard of in school referendums. How did this happen? It’s a good story.

In the spring of 2014, the Albany Area School District held a “listening lunch” and invited all interested school district businesses to share with school officials their hopes and dreams for the education of Albany Area Schools children. That listening lunch was an opportunity for teachers and administrators to hear from a wide variety of district residents and business leaders about what they were seeing—and in some cases were not seeing—in the district’s high school



graduates. Business leaders also warned of a looming, yawning skills gap, directly related to what has traditionally been called “the trades,” and the dire implications for not addressing it in the schools.

New school superintendent Greg Johnson listened carefully, took notes, then organized a referendum campaign that summer that included plans for a dramatic expansion of the district’s Career, Agriculture, and Technical Education (CATE) facilities and a head turning bolstering of its curriculum. That bold move caught the attention of many in this school district community, a community with deep agricultural, automotive, construction, and manufacturing roots. In a time when many school districts are being forced to shutter these vital departments, Albany Area Schools decided to go to its voters in August of 2015 and ask them to not only support its traditionally strong core academics, but also the classes needed for

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Aviation Taking Flight at Johnson Aerospace and Engineering High School



Johnson Aerospace and Engineering High School, Saint Paul Public Schools

It's a typical Tuesday morning in early December. Malik, A 10th grade student at Johnson Aerospace and Engineering High School in St. Paul, is flying across the San Francisco landscape in a small twin engine airplane. It's partly cloudy and the morning sun shines across the bay in spectacular fashion. His mission is to navigate a way,

together with his co-pilot, Mai Lia, an 11th grader, to the Golden Gate Bridge and Alcatraz Island to take the best possible photos of the famous landmarks. They'll shift their flight path towards wine country and end their flight at the Napa Valley airport.

Of course, these high school students were not actually flying, nor were they in San Francisco. They were in the school's ultra-realistic flight simulator lab. Their

class, Introduction to Flight, has introduced the duo, along with 20 other students, how to fly airplanes and get down the basics of air traffic control. The class is one of three different flight simulator classes, all built around a standard private pilot curriculum. It is part of the Aerospace career pathway at the school and will give students a head start in multiple careers of the aviation field — ranging from pilot, air traffic control, airport management and aircraft maintenance.

Within the school, the word has gotten out about the class. It's become a school favorite — not because everyone is interested in flying, but because it is the most unique educational experience a high schooler could ever imagine having. Students are immersed in a simulated environment to a level that they feel the motion of the airplane even though there are no moving parts to the simulators. Students also get to view the world from a different perspective (the air) going to all the corners of the world. One of their instructors, Scott Shaffer states, "Having such a diverse student body gives students the opportunities to fly around the various areas of their decedents, which is a very enlightening for them. Not only that, but students get an opportunity to see some of the world's greatest wonders of the world — like the

Eiffel Tower, Sydney Opera House, Great Wall of China and the Pyramids of Egypt to name only a few".

Of the 7 simulators in the classroom, students works in teams of 3 — all of whom rotate between pilot, co-pilot and as an air traffic controller. Teams need to work together to complete flight missions that correspond to a given learning objective. Each new flight mission builds on the previous missions learning objective and it isn't long before cheers of encouragement fill the classroom as students complete their first landing without crashing!

The school has become one most advanced high school aviation programs in the nation. As the school looks to the future, using sponsorships and grants, they hope to expand the program to the St. Paul airport where students can gain greater experiences in aircraft maintenance, airport management and even actual flight in obtaining their private pilot license.

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Shelly.Lopez@mspmac.org.



Farnsworth Celebrates 15 Years of Aerospace



Saint Paul Public Schools

Late last spring, Farnsworth Aerospace proudly celebrated its 15th year of aerospace and engineering education on the east side of Saint Paul.

To mark the occasion, Farnsworth hosted a special event. Attendees enjoyed dinner, dessert, prizes, a “15 Years of Aerospace” program and music by Copper Street Brass.

“The Farnsworth traditions that started 15 years ago are still going strong today,” said Laura Saatzer, principal for Farnsworth’s PreK-4 Campus. “Our students love our extended field trips and learning from aviation experts who visit our school.”

Since 2001, Farnsworth has infused aerospace into every aspect of curriculum. As a “Home of Future Leaders,” the school inspires students to expand their imagination through hands-on learning and character building.

“I want every student to know that when they come to Farnsworth, they are coming into a

special place,” said Hamilton Bell, principal for Farnsworth’s 5-8 Campus. “I always challenge students to see themselves as leaders by respecting themselves and gaining respect from their peers.”

One of those experts is astronaut and St. Paul native Lt. Col (Ret.) Duane “Digger” Carey. “Out of the hundreds of schools I have visited, Farnsworth stands out as an inspiring success story,” he said.

Farnsworth has created a culture that values teamwork when solving problems. Students are able to experiment, present ideas, gain confidence and become leaders. The school encompasses a wide range of disciplines, from

designing airplanes to writing stories about space flight. In fact, many students are able to experience many “firsts” – plane rides, visits to a space museum and time in the cockpit of an on-site flight simulator. In many cases, these “firsts” inspire a student’s earliest career goals of scientist, engineer or even an astronaut.

Here’s to many more years of inspiration, imagination and commitment to help our future leaders soar into the future.

For more information about Farnsworth Aerospace and its 15th Anniversary Celebration, please visit spps.org/farnsworth.

Farnsworth Aerospace through the years:

- 2001: Proposal to change the focus of Farnsworth Elementary to aerospace
- 2002: Farnsworth Elementary Magnet School becomes Farnsworth Aerospace Elementary Magnet
- 2004: Farnsworth Aerospace becomes a NASA Explorer School
- 2008: Farnsworth Aerospace expands to PreK-8 and takes over the former Cleveland Middle School building. Dr. Troy Vincent becomes the principal of both campuses, PreK-4 and 5-8.
- 2011: Dr. Vincent retires and Hamilton Bell takes over as principal
- 2013: Officially recognized as Farnsworth PreK-4 Lower Campus and Farnsworth 5-8 Upper Campus. Laura Saatzer becomes the

first PreK-4 Principal and Hamilton Bell solely the principal at the 5-8 campus.

- 2014: Longtime aerospace coordinator Jill Wall retires and Cindy Schreiber takes over for both campuses
- 2018: Farnsworth celebrates 15 years of aerospace

Some of Farnsworth’s programs include:

- On-site flight simulators
- Engineering classes (Project Lead the Way)
- Engineering and aerospace family resource nights
- Lego Robotics
- The Learning Jet (a former Federal Express cargo airplane transformed into a classroom)
- KidWind Renewable Energy Challenge Team
- Aerospace field trips to:
 - Johnson Space Center in Houston, Smithsonian Air and Space Museum in Washington D.C., Space & Aviation Camp in Huntsville, Alabama and many more.

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Your Career Aspirations and the Steps You Need to Take to be Successful in the Aviation Industry or any Industry!

Ken Polovitz

Assistant Dean, Student Services

John D. Odegard School of

Aerospace Sciences

It appears easy enough:

- Begin solidifying your career aspirations (what you want to be when you grow up!) generally during your high school years.
- Work hard in high school to build a strong academic and social foundation to prepare you for the rigors of postsecondary education.
- Begin your college search based on a number of variables but certainly those schools that have the major you are seeking to launch your career.
- Select a college or technical school.
- Challenge yourself academically and graduate in a major that prepares you for a job that begins your career.

If it was only that simple!

These steps seem straight forward enough. However, all the variables attached to each of these make for some of the most complex and important decisions a young

person will make in a lifetime! I’d like to focus on the first and fifth steps and offer some insights I have observed from almost 40 years of advising prospective and currently enrolled students pursuing a career in aviation. However, regardless of the specific profession, it’s important that students thoroughly explore what needs to be accomplished to successfully get from step one through step five.

Many students select a specific career because they think it would fun, financially rewarding, prestigious or because the job opportunities are numerous. Certainly, these are all good reasons to consider when identifying any career. But once again, these “reasons” need to be thoroughly explored. For example, just because a career may pay well, doesn’t mean it will result in a meaningful fit for you as an individual. Students need to thoroughly and carefully analyze all the variables that make up a successful and enjoyable career. In other words, it needs to get “personable”.

Currently, and for the foreseeable future, career opportunities within the aviation industry are wide open. Whether it’s professional flight, air traffic control, management and

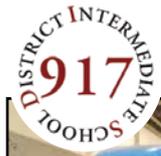


technical positions or the ever emerging fields of unmanned aircraft systems, the need for qualified people is greater than it’s ever been. Since the job opportunities within the aviation industry are so in demand, does that mean a student preparing for a career in aviation can “throttle back” because the demand for them is so great? Absolutely not!!

Regardless at what level a student is at with preparation for entering the career, they still need to work extremely hard, stay focused and not take shortcuts or skip any step that is

needed to get them from point A to point B successfully. Employers are not going to hire candidates that haven’t built a strong foundation on to which erect a successful career. The “choice” careers will always be competitive.

Begin in earnest identifying how you are going to successfully navigate through all the variables within these five steps. If you do and stay committed to reaching your career goal, you will be successful. Best wishes with your journey!



ISD 917 Total Auto/HDT



Intermediate School District 917

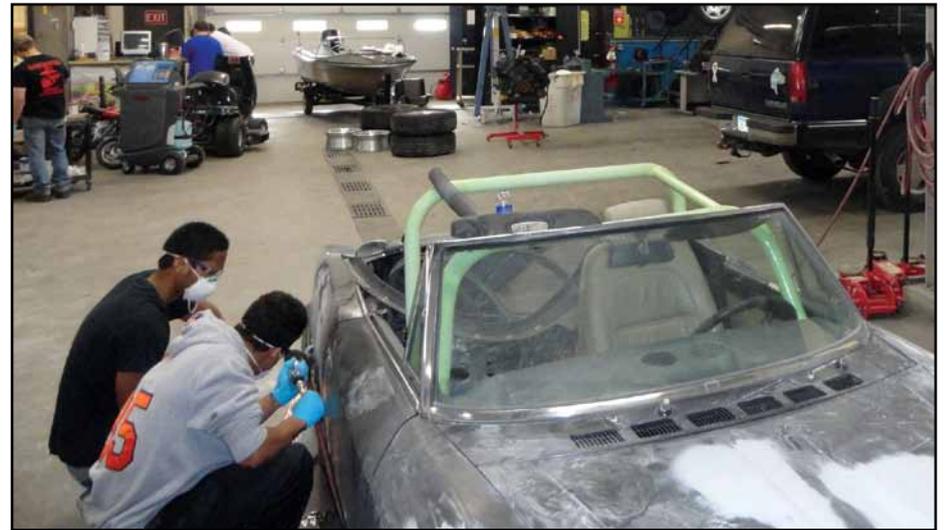
Intermediate School District 917 provides increased opportunities for personal and career skill development and provides educational programs that meet the individual and technical needs of students. The District serves students from our 9 member school districts: Bloomington, Burnsville, Lakeville, Farmington, Randolph, Hastings, Inver Grove Heights, South St. Paul, and West St. Paul/Mendota Heights.

As part of our services we provide tremendous opportunities for Career and Technical Education programs that are located on the campus of a county technical college in Rosemount, MN. Two of our unique offerings our Total Auto Care and Heavy Duty Truck Technology. These two programs provide relevant hands-on learning opportunities for students interested in transportation and vehicle main-

tenance careers. Our two instructors and 1 technical tutor provide past industry experience for all students.

Our Total Auto Care program, taught by Tony Vilelli and supported by Danny Hoffman combines both automotive repair, auto body and welding that is related to these areas. Students perform all types of services and repair in the automotive industry, focusing on safety, maintenance, tires, brakes, steering systems, suspension systems and alignments with modern equipment. Testing of computer control emission systems along with heating and a/c systems with state of the art equipment will be presented. Students will repair automotive bodies, fenders and frames. Metal straightening, shaping, rust repair and spot painting. Skills in welding with oxy/acetylene gas, mig welding and plastic welding, along with cutting with oxy /acetylene gas and plasma cutting will be performed. Applying and finishing plastic fillers and fiberglass repairs. Primers, paints and vehicle detailing will also be performed.

“We feed the 3 big programs at the technical college: Auto Body, Auto Repair, and Welding each year. We try to run as close to a real-world auto shop as possible,” said Tony. “Working with kids and seeing them in college or on the job within the transportation industry is my biggest thrill.”



Within our Heavy Duty Truck Technology program, taught by Tom LeDoux, students will overhaul various parts of a semi-truck diesel engine and drivetrain components. They will perform vehicle safety inspections, heavy truck engine troubleshooting diagnostics and preventative maintenance procedures as well as cover different welding procedures while practicing with each method. Students may have an opportunity to drive a diesel-powered semi and drive with a trailer if they do well with the truck. Students must have a driver's permit or license to drive the truck.

The true reward for both of these programs is how they impact the lives of young

people as they move forward with career interests. Both Tom and Tony see many of their past students who now work in the industry. Because of the opportunities to learn and grow in such a place as ISD 917, these students feel success before they graduate. In some ways the CTE programs within ISD 917 are the best kept secrets in Dakota County. We hope that can change!

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Saint Paul Automotive Programs Leads to High Wage, High Demand Jobs



*Kathy Kittel, Supervisor, Department of Post Secondary Partnerships
Saint Paul Public Schools*

Saint Paul Public Schools Career and Technical Education programs have the tagline “We fill the skills gap.” This is where the automotive program comes into play for these high wage, high demand, non-outsourcable jobs. By having a full-fledged automotive center, an auto garage and several courses in other schools, students are being exposed to and trained for the Industry.

The flagship program takes place at the Saint Paul High School Automotive Center, located at the Linwood-Monroe school, where over 50 students attend one of two, three-hour classes. This 12 bay facility boasts the same high-tech tools and equipment that are currently found in industry, making this a real-world learning environment. For many of the students this is their first exposure to working



with tools and on vehicles.

“What really sets our program apart is the ASE student certification,” said instructor Henry Velasquez. “Students are trained to national industry standards set by the Automotive Service Excellence (ASE) Foundation”. The Saint Paul High School Automotive Center has been accredited for 15 years.

Having this accreditation has meant

working to maintain compliance. Every five years the Saint Paul High School Automotive Center goes through a rigorous accreditation process where every aspect of the program is examined, from the curriculum, facility, tools, and safety protocols to instructor credentials. Instructor Ron Rybicka says he is constantly upgrading the curriculum as national standards change. “We want our students to be

held to these high industry standards.”

The latest change has been to modify the three ASE Foundation courses of Maintenance & Light Repair. In these courses, students train in the fundamental areas of Engine Mechanical, Drivetrain, Hybrid Vehicle, Electrical/Electronics, Suspension, Steering and Brakes. Jason Emrick, former technician turned college instructor and active Advisory Committee member, adds that in these courses, “Students learn important problem solving skills and, even more importantly, perseverance and resilience.”

Former students have commented on the quality of the program. One says the courses are “experiential and well taught, giving me an early start [to my career].” Another student followed his passion to attain an Automotive Applied Associate Degree. He has since graduated from Dakota County Technical College and is happily working in the field—with no college debt.

Another automotive program with a series of courses is located at Central High School, where students train in a recently refurbished off-site garage. Community members and students bring in their vehicles for service. “One student bought a truck and is busy rebuilding it,” says instructor Matt

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Anoka-Hennepin Technical High School Helping One Student Pursue Big Dreams



Anoka-Hennepin School District

George Bogar has always liked cars. When he was a kid growing up in Monrovia, Liberia, he'd visit a garage close to his home all the time.

"I knew some of the people there and I learned some automotive stuff being there all the time," he said. "I like autos."

So in 2017, when Bogar moved to the United States to be with his mother who had moved earlier, he had a plan in his head. He had always been a good student and enjoyed school. So Bogar figured he would move here, graduate high school, then go to college to focus on an automotive degree, then get to work in the automotive industry.

"I came thinking I'd go to school here for a year and then go to college. I was excited," he said. "I thought I would start right away, and maybe be self-employed doing this. But it went a little differently than I expected."

The long and the short of it is that the United States hasn't perfected a way to match credits a student in a foreign country like Liberia earns while in school. The result for Bogar is that when he began classes at Coon Rapids High School in 2017, it became clear to him and his counselor that it was going to

take longer to graduate than he had expected because he was going to have to take a lot of classes over again.

"I'm already a little old," he joked. Bogar is going to be 20 years old this spring. "I was going to be much older than other students graduating."

So he worked with his school counselor and decided to enroll at Anoka-Hennepin Technical High School (AHTHS), Anoka-Hennepin's diploma completion program, located on the technical college campus that offers 18 to 21-year-olds who don't or can't graduate with their peers a chance to get their high school diploma and transition into college or a career.

"It's been a great experience at this school," Bogar said. Not only is Bogar on track to earn his diploma this spring, but he's going to do so with 29 college credits under his belt, including the 13 college credits he's taking this semester.

"It's amazing," Bogar said. "Now I'll be able to finish my degree in 2020 and then I hope to do some more college — maybe a four-year degree, and then work for a year or two."

But it's his plan after working a year or two that has him, and his teachers at AHTHS so impressed. Bogar wants to go back to Liberia, both to open a garage, but also teach students like him.

"I want to help people do things the right



way," he said. "Nowadays in Africa, in my country, they can't teach things the right way. They don't have material and stuff to teach the right way. I want to help. Where I'm from, a lot of kids — they don't want to do auto."

Dave Larson, who teaches auto classes at the college, says George has a knack for cars and all that goes into working on them.

"He's kind of blown us away," Larson said. "(George) is the kind of student we wish we could see more of."

Larson said it used to be that the college would see a lot of tinkerers — students who would pop open the hood of their own car and tinker on the car and self-teach how to fix them. "We don't see that anymore because the cars are so complex," Larson said. "The afternoon tinkerer is outside their range."

So Larson said students nowadays need to have other skills, in addition to being able to work on a car. "We need kids with technical aptitude, and who understand computers and

technology and can make a diagnosis. George is one of those kids."

Last fall, Bogar began using some of the skills he's learned at school when he started working at an auto dealership in Elk River as a Quick Lane tech. There he changes oil and does brake jobs and other auto repairs.

"It's a lot of fun," Bogar said. But he wouldn't have it, he said, if it wasn't for Patty Halsey, the work experience coordinator at AHTHS, who he says helped him get the job.

"She was a lot of help," he said. "All of the staff at the school is really helpful. The teachers are so supportive."

Learn more about AHTHS by visiting: ahschools.us/ahtech.

www.ahschools.us
(763) 506-1000



Saint Paul Automotive Programs

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Lijewski. These courses, along with courses at Harding and Humboldt High Schools, bridge to the program at Saint Paul High School Automotive Center.

The automotive industry and school district see an increasing need for work-based learning and leadership opportunities. Working with the City of Saint Paul's Right Track program, students are able to earn paid summer internships by working on Saint Paul Parks & Recreation vehicles. Participants are often asked to return the following summer or even to stay on during the school year.

Students experience what it is like to work with customers: taking a service order, communicating the vehicle problems or needs, and notifying them of work completion. Students must also place orders with vendors for parts or supplies. They also practice public speaking skills when they give presentations to district counselors and teach elementary students about the industry at career fairs.

SPPS has made articulation agreements with the area's community and technical colleges. This means students can earn high school credits and apply them to Dunwoody College of Technology, Saint Paul College or Dakota County Technical College upon enrolling. This saves time and money.

Community support for the Auto pro-

grams is evident in the number of people who regularly attend Program Advisory Committee Meetings. Steve Reinarts, who chairs the committee (and also serves as a college dean of automotive programs), affirms, "The advisory committee represent a wide range of stakeholders such as employers, technicians, state organizations, school administration and post-secondary contacts. The committee supports curriculum development, recruitment, tools and equipment purchasing, automobile donations and career presentations to the students." Tours in the field have included the Females in the Automotive Industry to grow this non-traditional career. Members also play a key role in the accreditation process by reviewing compliance prior to inspections. As the demand for automotive technicians continues to grow, Saint Paul Public Schools is striving to meet the industry's needs by producing students who have a firm grasp of both the technical and soft skills needed to succeed.

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Edina Environmental Leadership

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we used a spray painting tank to contain the salt brine, but now we have to use bigger tanks because we are expanding the use of salt brine to all district sites." The salt brine is used as a melting agent and allows district staff to easily sweep off the snow.

Buildings and Grounds staff now have a four-step process to ensure the walkways and parking lots are safe. A salt brine is applied overnight, then snow is cleared with a snow blower, followed by a broom on surfaces. Lastly, drop spreaders are used to apply salt to ensure it is spread in an even, efficient manner. Currently, EPS on average uses 14 pallets of salt annually, resulting in a cost savings of \$10–12,000 per year.

The reduction in salt has allowed EPS

to decrease the harmful effects it has on groundwater. Johanson is proud that he is doing something great for the environment. "I know that when I go home, excessive salt is not going through the grass or waterways," he said. "I feel like I'm contributing to making our world a better place to live."

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Logistics and Transportation Spotlight

The Logistics and Transportation Industry in the United States



Overview

The logistics and transportation industry in the United States is highly competitive. By investing in this sector, multinational firms position themselves to better facilitate the flow of goods throughout the world's largest consumer market. International and domestic companies in this industry benefit from a highly skilled workforce and relatively low costs. Spending in the U.S. logistics and transportation industry totaled \$1.4 trillion

in 2016 (7.5 percent of U.S. GDP that year). Analysts expect industry investment to correlate with sector-specific growth in the U.S. economy. America's highly integrated supply chain network links producers and consumers through multiple transportation modes, including air and express delivery services, freight rail, maritime transport, and truck transport. To serve customers efficiently, multinational and domestic firms provide tailored logistics and transportation solutions to ensure coordinated goods movement from origin to end user

through each supply chain network segment.

Industry Subsectors

Logistics services: This subsector includes inbound and outbound transportation management, fleet management, warehousing, materials handling, order fulfillment, logistics network design, inventory management, supply and demand planning, third-party logistics management, and other support services. Logistics services are involved at all levels in the planning and execution of the movement of goods.

Air and express delivery services (EDS): Firms offer expedited, time-sensitive, and end-to-end services for documents, small parcels, and high-value items. An \$87 billion industry in the United States, EDS firms also provide the export infrastructure for many exporters, particularly small and medium-sized businesses that cannot afford to operate their own supply chain. Recent EDS industry growth has been generated by the expansion of electronic commerce use by businesses and consumers.

Freight rail: High volumes of heavy cargo and products are transported long distances throughout the United States via rail network. Each day, this 140,000-mile system

delivers an average of 5 million tons of goods and serves nearly every industrial, wholesale, retail, and resource-based sector of the economy. Freight rail moves more than 70 percent of the nation's coal, about 58 percent of its raw metal ores, 1.6 million carloads of wheat, corn, and other agricultural products, and 13.7 million intermodal containers and trailers that transport consumer goods.

Maritime: This subsector includes carriers, seaports, terminals, and labor involved in the movement of cargo and passengers by water. Water transportation moves nearly 70 percent of all U.S. international merchandise trade, including 72 percent of U.S. exports by tonnage.

Trucking: Over-the-road transportation of cargo is provided by motor vehicles over short and medium distances. According to the American Trucking Associations, trucking revenues were \$676.2 billion in 2016. That year, trucks moved more than 10 billion tons of freight.

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North Park Elementary School Awarded a Green Ribbon

Blooming to Great Heights in Every Pillar

Columbia Heights Public School District

North Park Elementary School, in the Columbia Heights Public School District, has been on an environmental stewardship journey to reduce its environmental impact and operational costs for many years. Its dedicated staff and students have committed to creating a learning environment that reduces impact on the environment, improves student and staff health, and provides effective environmental and sustainability education.

Approximately 20 years ago, North Park's green journey began when the building organized all school paper recycling in each classroom and office area. North Park's mission to help the environment went a step further when the school district joined a program called Schools for Energy Efficiency (SEE). North Park led the district in reducing their operation cost of energy by educating staff and students on ways to reduce energy usage. North Park Elementary reduced its energy use by nearly 10 percent, and was recognized in the top 25 percent in the nation for efficient operations with an ENERGY STAR rating of 92. While participating with SEE, the school installed light motion sensors to ensure that lights would automatically turn off when

there is no motion detected within a 10-minute period.

North Park's awareness and commitment to the environment continues to grow each year. To complement the North Park school recycling program and energy conservation efforts, the school implemented a cafeteria composting program in 2012. Along with all food scraps, students and staff also compost paper towels from the restrooms. Due to the success of this environmental program, North Park received an award from Anoka County Board of Commissioners for an innovative recycling and composting program that has reduced overall landfill waste by over 90 percent.

In 2013, North Park's third grade project-based learning approach helped students develop plans to transform an idle weed-infested courtyard into an engaging all school edible garden. Within a year, a team of dedicated staff members wrote several grants and created a 1,800 square-foot garden active learning space over the summer. North Park's courtyard garden beds are made from composite recycled plastic. The soil brought in is organic, and the landscape fabric (weed block) under the wood chips is made from post-consumer plastic bottles.



Each grade level, as well as the developmental cognitive disabilities program, has its own raised bed. Throughout the garden, there are educational signs, several flip benches that quickly can be converted into tables, and a corner garden composting area. The garden also has a bench made from 1,000 plastic milk containers next to a wildflower pollination area.

Along with the courtyard garden, North Park students and staff have access to the district's Blooming Heights edible schoolyard and outdoor classroom. Columbia Heights Public Schools has a full-time agricultural specialist who provides instruction and resources to promote academic achievement and healthy nutrition for all students. The agricultural specialist also visits North Park on a regular basis to work with all students in the courtyard garden and in the classroom, with lessons focusing on nutrition, sustainable gardening, and the environment.

Organic matter created by worms in the school science lab is brought to the courtyard garden to enrich the soil. North Park also collects its gray water. Uncontaminated water from experiments, aquariums, crayfish bins, et cetera, is poured down a science lab table with a sink and collected in eight liter containers. This water is used to water indoor plants. These plants provide aesthetic beauty throughout the school and help provide cleaner air for students and staff. In addition, the Tower Garden, a vertical, aeroponic growing system, allows students to grow up to 28 vegetables, herbs, fruits, and flowers in less than three square feet. Throughout the school year, students can grow and eat produce right in the science lab.

Also in use in the science lab is an aquaponics aquarium that combines raising aquatic animals (fish) with hydroponics (cultivating

plants in water). The natural fish waste fertilizes the plants, and the plants clean the water. This is a perfect tool to teach closed systems and an excellent example of sustainable farming techniques. In addition, for all science units that require batteries, the lab only uses rechargeable batteries, eliminating waste and saving the school money.

Through several districtwide health improvement partnership grants from the state, students are served a fruit or vegetable snack three times a week, and enjoy a daily salad bar. The grant has also facilitated a Yoga Calm initiative, which has assisted many teachers in successfully redirecting student energy and helping students to gain a stronger ability to focus and demonstrate self-control.

Finally, the most recent addition to North Park has been one of the most exciting. The school now features a 60 kilowatt solar array system on its roof. One year of production is the equivalent of the offset of carbon dioxide emissions from burning 56,250 pounds of coal. During science classes, students often will climb to the top of the steep hill behind the school to look down on the solar panels, and discuss with their teacher the impressive power of the photovoltaic arrays harnessing the sun's energy.

North Park is committed to continuing its environmental stewardship journey and to creating a learning environment that improves student and staff health as well as provides effective environmental and sustainability education.

Source – The U.S. Department of Education

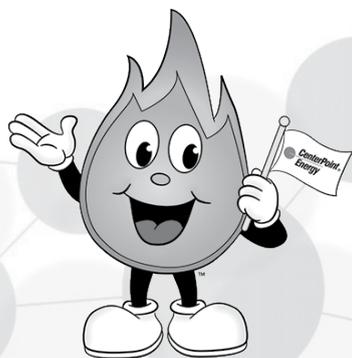
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Calling MN STEM High School Educators: Attend Free Energy Workshops!



Minnesota High School Agriculture, Mathematics, Science, and Technology Education Teachers are encouraged to register for and attend one or more of the four free Energy Workshops this summer.

Workshop 1: June 10 & 11

Marshall, MN

Topics: Ethanol, Powerline, Solar & Wind

Workshop 2: June 12 & 13

Bemidji, MN

Topics: Hydropower, Solar, ATE, Wind & Dream It Do It

Workshop 3: June 17 & 18

St Cloud, MN

Topics: Anaerobic Digestion, Solar & Wind

Workshop 4: June 19 & 20

Rosemount, MN

Topics: Electric Vehicles, Powerline, Solar & Wind

Teachers attending the free E3 workshops will receive for their schools:

- Classroom Presentation Materials
- Curriculum Resources & Lab Kits

Also included in the Workshop:

- Industry tours
- Lunch and snacks both days
- One night's stay at a nearby hotel
- An opportunity to book the Energy Trailer for your school during the 2019-2020 school year.

Included in the trailer are lab activity kits for solar, wind, and hydro energy generation and much more. The trailer itself is equipped with a cabin size solar generation system. Instructional materials are included to make lessons easy along with multiple resources for additional projects and learning activities.



These workshops provide opportunities to experience the energy production and distribution at industry sites. Presenters will share



insights into the changing energy landscape in Minnesota and resources to use for classroom research projects.

Past Presentations Have Included:

Anaerobic Digestion, Biofuels, Biomass, Energy Crops, Hydropower, Nuclear Power Generation, Power Transmission, Solar, Wind, and an introduction to the Energy Trailer.

Participants will receive a certificate for 16 hours upon completion of any workshop. Teachers may attend more than one workshop of the four if interested in subject areas at other sites.

For additional information, contact Rose Patzer at rose.patzer@mnwest.edu or Bruce Peterson at bruce.peterson@mnwest.edu

Register at: energycareersminnesota.com/energy-education-for-educators-2109

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

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.

All schools will participate in an Earth Day clean on school grounds. Pilot Knob LIVEGREEN students will be Plogging, picking up litter while jogging. It is a trend

that started in Sweden, when asked about it, Emily Natrop Pilot Knobs LIVEGREEN leader said, "what's not to like, its a fun name and kids love to run"!

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Solar Energy in District 192

Farmington Area Public Schools

Farmington Area Public Schools, District 192, made a commitment to Minnesota's clean energy future by installing a solar electric system at Dodge Middle School in 2017. Since then they have added similar systems to Riverview Elementary School, Boeckman Middle School, and most recently Farmington Elementary School. The solar facility was designed and installed by a Minneapolis-based solar energy developer.

The solar facility at Dodge Middle School alone is comprised of 2,200 solar modules installed on the roof of the building. The energy provided by the solar arrays on Dodge Middle School annually reduces emissions by an estimated 834 tons of carbon, which is the equivalent of taking 179 gasoline-powered cars off the road, or planting 21,271 trees. Solar energy provides approximately 60% of the total electrical use at the school.

The costs to install solar energy have gone down dramatically in the last several years. Although it does not pay taxes, Farmington Area Public Schools worked with a third-party investor who is able to capture the substantial federal tax benefits. The investor owns the system for at least seven years, selling the energy to the School District while taking advantage of the tax credits and depreciation. The District then has the option to purchase the



arrays after seven years. This approach results in a price for the solar energy that is below the rates charged by the utility. It also locks in a fixed-rate schedule that removes the uncertainty of future rate increases.

"Our District is committed to holding down long-term energy costs while also reducing the environmental footprint of our operations," said Superintendent Jay Haugen. "This investment in solar energy reflects our District values and we believe it also reflects the values of our community."

www.farmington.k12.mn.us
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4 **Session**
Opportunities

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Session I: June 10–11

Merit Center, Marshall, MN

Energy Topics: Ethanol, Powerline, Solar, and Wind

Industry Tours: ADM, NextEra Solar Farm, Magellan Midstream Partners, Merit Center



Session II: June 12–13

Bemidji State University

Energy Topics: Hydropower, Solar, ATE, Wind, and “Dream It. Do It.”

Industry Tours: Air Corps Aviation, Beltrami Electric, Ottertail Power, Wells Technology

Funding for these workshops is provided by Minnesota State Colleges and Universities and by the Minnesota State Energy Center of Excellence.



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S Opportunities to Attend!



Session III: June 17-18

St. Cloud Technical and Community College

Energy Topics: Anaerobic Digestion, Hydropower, Solar, and Wind

Industry Tours: Sartell Community Solar Garden, City of St. Cloud A.D. and Hydro Plants, Blattner Energy

Session IV: June 19-20

Dakota County Technical College,
Rosemount MN

Energy Topics: Electric Vehicles, Powerline, Solar, and Wind

Industry Tours: Dakota Electric, KODA Energy, Tesla Dealership



*Space is limited to
16 participants at each
location. Register soon!*

Register at: energycareersminnesota.com/energy-education-for-educators-2109

For Additional Workshop Information, Contact Any of Our Minnesota Energy Center Staff:

Bruce Peterson, Director
bruce.peterson@mnwest.edu
320-267-8872

Carol Hegna, Program Coordinator
carol.hegna@mnwest.edu
320-564-5020

Rose Patzer, Program Coordinator
rose.patzer@mnwest.edu
320-564-5044

Blooming Heights Grows with Successful College Internship Program



Columbia Heights Public Schools

Programming offered as a part of the Blooming Heights Edible Schoolyard & Outdoor Classroom expanded beyond the classroom this past summer when it welcomed two college interns.

Katrina Mraz and Marlee Yost-Wolff served as summer 2018 interns splitting their time between regular Blooming Heights programming and special projects.

“The Blooming Heights college internship is designed to provide interns with experiences working in urban agriculture education and give them a chance to shape Blooming Heights programs with their own unique ideas and experiences,” said Agriculture Specialist Maya Lemon who oversees the two college interns

Mraz was initially drawn to the program by the opportunity to work with and teach a diverse range of students about topics such as

nutrition and the environment. “This program has brought me a love for teaching because I get to see how excited the students are to learn and work in the garden,” she said. “Many students wouldn’t try the dishes we cook in any other setting. However, being part of the process from harvesting to cooking the fruits and vegetables opens their minds to trying these healthy dishes.”

Yost-Wolff cited deeper understanding as a favorite part of her experience. “I’ve enjoyed gaining a better understanding of our food systems through research, garden work and observing my coworkers teach -- I learned so much from them,” said Yost-Wolff. “I feel more confident preparing outdoor education lessons, communicating with students of different ages, and working in [a] garden.”

“It has been such a privilege to work for this program and help foster curiosity for healthy eating and our environment,” said Mraz.

“Our hope is that our interns leave this experience with a deeper understanding of the value of school garden programs and the experience to do this kind of work in the future. Interns will leave behind improved curriculum and infrastructure,” said Lemon, who noted they hope to continue to offer summer college internships in the coming years.

About the Blooming Heights Edible Schoolyard & Outdoor Classroom

Since its inception, the Blooming Heights Edible Schoolyard & Outdoor Classroom has offered unique programming within Columbia Heights Public Schools. Over the past two years, staff has worked diligently with the guidance of students, teachers, administrators and community members to craft a mission statement for Blooming Heights that will reflect and guide the strengths of this program.

The intentionality of the Blooming Heights mission and guiding principles have allowed the program to refine its assessments to align with these values and to measure program outcomes more deliberately. Blooming Heights stands out as an example of the kind of innovative programming made possible with the support of administrators, teachers, families, students and School Board members.

“The Blooming Heights mission and guiding principles strive to embody the last eight years of work and to plant seeds to grow future projects and leaders within Columbia Heights Public Schools and beyond,” said Lemon.

Continued on Page 16

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- February 14, 2020
Ag Bowl Scholarship Invitational
- March 21, 2020
Junior Visit Day

How To Build a Pollinator Garden in Seven Steps



Creating habitat, no matter the size, is helpful for monarchs and pollinators.

Pollinators are in trouble. You can help by planting a pollinator garden! You can plant a garden anywhere - your yard, school, church, business or even in a pot for your front steps.

A simple, native flower garden will attract beautiful butterflies and birds to your yard and help pollinators stay healthy. In addition to nectar from flowers, monarch butterflies need milkweed to survive, so if you notice the leaves on your milkweed have been chomped,

don't worry, it's a great sign!

Before gardening

Gather your supplies and research what varieties of milkweed and wildflowers are native to your area. You can also look up pollinator-friendly plant lists for your region. If you're starting from seeds, find a local seed supplier.

What you'll need:

- A yard, raised bed or some flower pots
- Garden tools to break the soil or build a raised bed
- Extra dirt and mulch
- Native milkweed and nectar plants

Seven easy steps

Choose your location: Butterflies enjoy basking in the sun. Gardens should be planted in sunny spots, with some protection from the wind.

Take a look at your soil: Break ground to see the consistency of the soil in your yard. Soil may influence the kinds of plants you can grow, or may require special considerations. If you find that your soil type doesn't match the plants you'd like to plant, you might consider building a raised bed or using flower pots.

Choose your plants: Find a nursery near you that sells native and local plants and milkweed for your area. Native plants are the ideal choice because they require less maintenance and tend to be heartier.

- Choose plants that have not been treated with pesticides, insecticides or neonicotinoids.
- Plant perennials to ensure your plants come back each year and don't require a lot of maintenance.



Native wildflower gardens add a pop of color to your garden, help bumblebees and butterflies, and need less maintenance. This purple coneflower attracted both bumblebees and a crab spider!

- Choose a diversity of plants that bloom throughout the seasons to ensure pollinators benefit in the spring, summer and fall. This will also ensure that your garden is bright and colorful for months!

Choosing seeds or small plants: Small plants that have already started growing in a nursery are simple and show instant return on pollinator visits, especially if you are planting in a small space. Seeds are best if you have more time. If you'd like to use seeds, plan ahead to plant in spring or fall, giving the seeds time to germinate. Seeds can also be best if you are doing a very large garden as they tend to cost less. Remember to water your seeds even before you see plants.

Blooming Heights Continued from Page 14

Mission

Blooming Heights is a Columbia Heights Public Schools program that uses school garden and nutrition programming to facilitate equitable experiences that engage all the senses, while building the skills and knowledge necessary for cultivating a healthy life and planet.

Guiding Principles

- We are committed to hands-on teaching and learning that highlights beauty, wonder and joy, and encourages positive risk taking.
- We facilitate interactions with the natural world that value both individuality and mutuality.
- We provide professional development and support to educators involved in experiential education.
- We conduct practice-based nutrition curriculum built on the belief that healthy food should taste good and connect eaters to the earth.
- We teach garden skills and knowledge as a lifelong means for self-advocacy and independence.
- We seek to center marginalized voices and to elevate leadership from all members of our community.

- We provide opportunities for personal and cultural connection with the land.
- We believe learning should feel relevant and urgent, inspiring questioning and curiosity.
- We offer multi-age and multi-discipline learning experiences that utilize techniques such as Social Emotional Learning and mindfulness as well as academic content.

What Do We grow?

We have both ground level garden beds and a number of raised beds for vegetables, fruits, flowers and herbs. In addition to the wide variety of annual vegetables (we had over 100 unique varieties in 2013) we also grow many perennial fruits: raspberries, blueberries, strawberries, hardy kiwi, junberries, honeyberries, gooseberries and currants (a student favorite!). There is a small orchard with apple, pear, cherry and plums trees, as well as a pergola with hardy grapevines.

Who Uses the Garden?

Programming at Blooming Heights includes learners from all ages from the Early Childhood Family Education program to students in grades K-12 and extending into adult enrichment classes. Students in our district start seeds in early spring using

grow labs in their classrooms and transplant the seedlings outdoors before the end of the school year.

Student involvement is integral to the upkeep of the garden and they help with all planting, weeding, watering, and harvesting. During the summer, K-6th grade students in Adventure Club take most of the responsibility for tending the garden. In addition to planting, watering and weeding, they harvest fruits and vegetables for weekly cooking lessons and run a produce stand at a nearby farmer's market. Any produce that is not used for cooking or sold at the farmer's market is preserved for use by the Family and Consumer Science (FACS) classes during the school year or donated to the local food shelf.

For more information on Blooming Heights, including the internship program and volunteer opportunities, contact Lemon at LemonM@colheights.k12.mn.us or 763.528.4508.

[www.colheights.k12.wi.us/
bloomingheights](http://www.colheights.k12.wi.us/bloomingheights)
(763) 528-4500



Despite its namesake, milkweed is not a weed. These beautiful wildflowers are the only source of food for monarch caterpillars and essential for their survival.

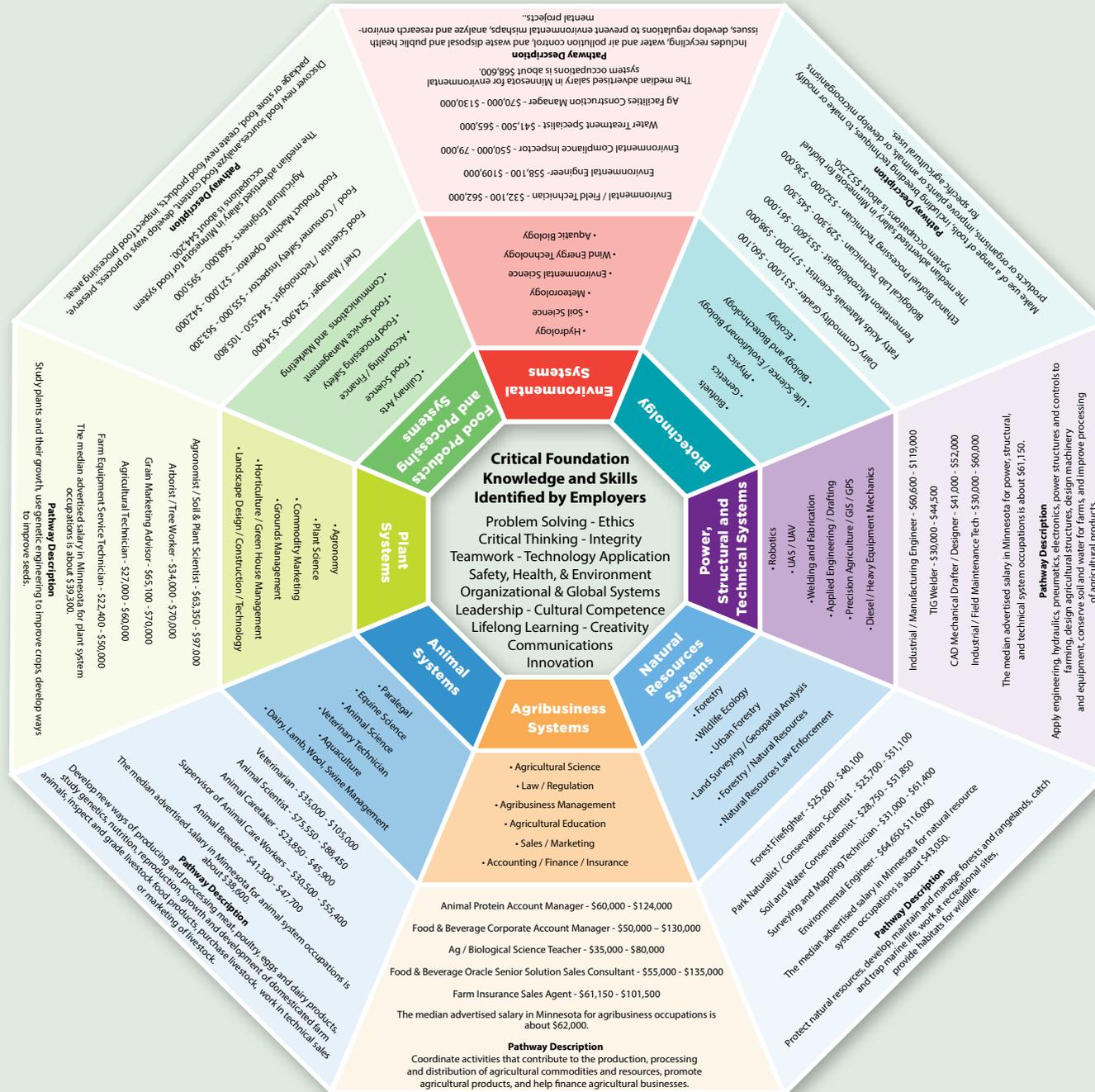
Plant your flowers and milkweed: For small plants, dig holes just big enough for the root system. Cover the roots with dirt and reinforce with dirt or straw mulch to reduce weed growth. For seeding, spread seeds across your freshly prepared garden and cover them with dirt. Consider adding some flat rocks so butterflies can bask in the sun!

Wait, watch, water and weed your garden: It may take some time, but you will eventually see butterflies and other pollinators enjoying your garden. Make sure to weed and water your garden to keep it healthy.

Best of luck, and thank you for helping monarchs, bumble bees and other pollinators!
Source – U.S. Fish and Wildlife Service

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The Academy for Sciences and Agriculture



Becky Meyer, Executive Director
AFSA High School

The Academy for Sciences & Agriculture is excited to announce their expansion to include grades K–4 for fall 2019! A newly renovated second location will offer 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 will be part of an award-winning learning community.

AFSA's K–8 program has been 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 will allow for additional opportunities in the High School offerings as well. Grades 9–12 will benefit from added elective classes, more 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 32 college credits, AFSA partners with UMN-Twin Cities and Southwest MN State University. AFSA also supports PSEO, and will work 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 will 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 5–12 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. Over 250 projects are judged at the school level, each project meets with three different judges, and an average score is calculated. Students who score in the top of their categories move on to state competition. This year 70 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 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 boutonnieres 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, AFSA's R.E.A.C.H. Squad (Racial Equity and Cultural Harmony) hosted an Equity World Café to garner input from the school community in providing an equitable educational experience for all who enroll at AFSA K–12.

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 is bringing agricultural literacy to urban and suburban populations.

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

tion Leadership Council (MAELC) in 2001. AFSA began as a 9th–12th grade high school with 41 students. Currently over 340 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 is preparing 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:

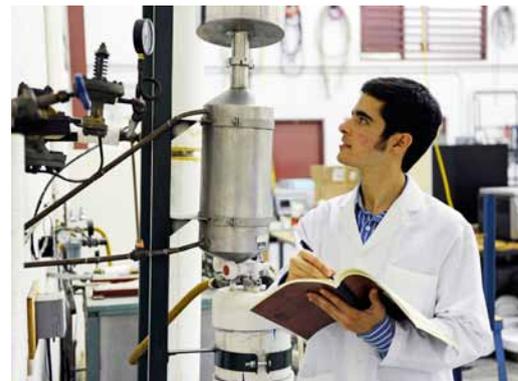
"I came to AFSA High School because of the great experience I had when I shadowed a classmate. There are small class sizes and one-on-one learning with the teachers. AFSA has brought me out of my shell and made me a better student."

—Kara Harstad,
AFSA Class of 2021.

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CATE Can't Wait at Albany Area Schools Continued from Page 1

the one-third of its students who annually seek out a career in agriculture and the trades after high school. The result? A doubling in size of its wood shop and metals shop. A large, new automotive bay with a state of the art paint booth. And soon a NASA inspired windowless greenhouse, using LED technology to grow plants year-round, 24 hours a day, 365 days a year.

As Supt. Johnson notes, "A good school district strives to hit on all cylinders. Here at Albany Area Schools, we are blessed to have a dedicated teaching staff and an amazing community that has come together to fuel our students' dreams, giving them opportunities to prepare for the life they dare to imagine. Whether a student wants to become a doctor, a teacher, a welder, an economist, a cabinetmaker, an electrician, carpenter, or plumber, we're here to make sure they get what they need to reach that next rung of their schooling and/or career ladder."

Of course it all starts with the teaching, and at Albany Area Secondary School that means a tight-knit three person CATE department, with teachers Michael Rien, Duane Lichy, and Amy Zimmermann. Speaking of the CATE department, high school principal Tim Wege notes, "We are fortunate to have three highly-skilled career, agricultural, and technical education instruc-

tors here at our secondary school, teachers who are fully aware of the high-paying, good jobs available now in the automotive, agricultural, manufacturing, and construction fields. Thanks to their dedication and hard work, many of our students leave here already well-grounded in the skills which they will later hone and translate into an enriching career."

Commenting on the exciting changes and growth in his department, Duane Lichy notes, "Now more than ever, we need people to repair our cars, trucks, and industrial equipment, and there are jobs that pay extremely well in those fields. We give students a taste of what to expect in a career like auto body repair, automotive repair, and machine maintenance."

"Also, people will always need to eat. Today we're not teaching all of our kids how to be farmers, because right now less than 2% of the population is involved in production agriculture. However, we do need people to develop food products, create crops that can grow and keep up with a changing climate, and strive to continue to lessen the carbon footprint created when growing food. Regardless of personal preferences, people around the world will always consume meat, milk, and eggs. In our College Animals Science (a four-credit University of Minne-



sota course) students learn what is necessary to pursue a degree in animal science, as this is a freshman level class. We also teach veterinary technology in our companion animals class for those students interested in going the veterinarian route."

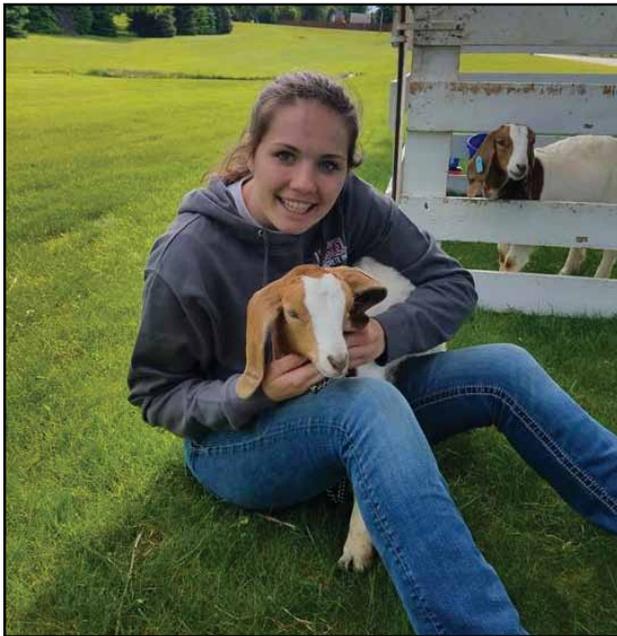
Deep in the heart of Central Minnesota, bold innovation spurred by a swiftly changing career landscape is reaping huge gains for students at Albany Area Schools. Thanks in large part to a school district and com-

munity that believed in the beauty — and urgency — of every student's dream. And then acted on that belief.

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National Agriculture Day 2019!



Farmington Area Public Schools

In honor of National Agriculture Day, we're highlighting some of the agriculture programs in District 192. Although Farmington is growing into a sizable suburb, we have strong roots in agriculture and believe it's important to offer agriculture related learning opportunities to our students. While not

every student, or even most students, will have spent time on a farm, teachers in District 192 want them to know that agriculture is an important part of their lives. "Agriculture is a part of everyday life whether you think about it or not, everything is produced through agriculture," said Karli Savaloja who teaches Animal Science at Farmington High School.

In addition to Animal Science, students at FHS have the option of taking classes in Landscape and Horticulture, Wildlife, and Machinery (small engines). Outside of the regular school day they may choose to participate in an active FFA chapter, a youth organization with the stated mission of "preparing members for leadership and careers in the science, business and technology of agriculture."

Students involved in our agriculture programs say they enjoy it because it keeps them engaged with nature. They get outside, they

interact with animals and they learn practical skills they can use both now and in the future. Some students want to be farmers or veterinarians but many of them just enjoy plants, animals and machines. They want to be better gardeners and pet owners. They want to fix their own lawnmowers.

FFA members regularly compete in career development events where they test their skills against students from around the region, the state, and even the country. There are also more casual events like a fishing field trip they took last fall. Next year they plan to take on some landscaping projects around the school building.

Alumni involved in agriculture have gone on to study and work in a wide variety of fields such as food science, farming, mechanics (specializing in AG equipment), and even animal-assisted therapy. Agriculture isn't just



for farmers, it's for everyone. We're proud to offer these classes, clubs and activities in District 192.

www.farmington.k12.mn.us
(651) 463-5000



Making Her Mark in the Middle

Albany Area Eighth Grade Teacher Carrie Schmitz Named Minnesota Middle School Teacher of the Year



Steve Stromme, Communications Specialist/
Work-Based Learning Coordinator
Albany Area School District

In a ceremony at the recent 2018 Minnesota Middle School Association Annual Conference in Bloomington, Albany 8th grade Language Arts instructor Carrie Schmitz was honored as the 2018 Minne-

sota Middle Level Educator of the Year.

In this her eighth year of teaching at the secondary level, Mrs. Schmitz is currently an 8th grade English Language Arts instructor at the middle school. She earned a bachelor's degree in English in 2009, and recently earned a master's degree in literacy education.

Commenting on her performance in and out of the classroom, Albany Area Middle School principal Paul Conrad had this to say:

"In the classroom, Mrs. Schmitz has a way of working with all students that is something special.

Her class is a true learning community that is collaborative and inclusive, while personalizing the needs for each individual student. It is commonplace to see students

hanging out in her room before school, during passing time, and after school. Relationship building is a real strength with her. One only needs to see how students greet her, how students decorate her room, how students write her notes on the board, and how students work in her class to recognize how important she is in their lives."

Principal Conrad went on to say that Mrs. Schmitz's passion for education goes beyond the classroom. For example, her colleagues chose her to be a member of the

middle school building leadership team, and she took the initiative to start the AAMS Knowledge Bowl team as well as the school's Novelists of Today and Tomorrow Club because, as Conrad points out, "She understands that learning happens in many different arenas."

Asked to comment on her recent honor, Mrs. Schmitz simply stated, "While I'm still not sure that I am deserving of any sort of award, these kids that I work with make it

so easy to shine. My students know that I always say 8th grade is the best grade, and I am simply so honored and grateful to represent them."

"It is commonplace to see students hanging out in her room before school, during passing time, and after school. Relationship building is a real strength with her."

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PUBLISHER/EDITOR: Renee Feight
EDITOR: Andria Reinke
PAGE COMPOSITION: Andrew Clausen
WEBMASTER: Scott Bayerl
SPECIAL ASSISTANT: Allie Zacharias
Please direct articles, advertising, questions or comments to:

Teaching Today MN™
PO Box 1704
Eau Claire, WI 54702
Phone/Fax 715-839-7074
www.teachingtodaymn.com

Please direct all inquiries to:
renee@teachingtodaymn.com

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Art Works: Arts Education

Arts Education funding is focused on students. Projects are for prekindergarten through grade 12 students, the educators and artists who support them, and the schools and communities that serve them. Applicants should consider what role their proposed project plays within this system, and how their project impacts students. Awards range from \$10,000 to \$100,000. Applications are due July 11, 2019.

Roads to Reading Literacy Initiative Grants

The Roads to Reading Literacy Initiative (RTRLI) provides grants of new children's books as educational resources to schools, child-care centers, and nonprofit organizations serving children in need from birth to age 16.

Applications are accepted from April 1 through June 1, annually.

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Teacher of the Year Candidate Field Narrowed to 40 Semifinalists

2019 Minnesota TEACHER of the YEAR 55th Anniversary

The field of possible candidates for this year's Minnesota Teacher of the Year honor has been narrowed to 40. A selection panel of 23 community leaders chose the semifinalists from an initial field of 168 candidates from across the state.

The panel will review the semifinalists' portfolios again and review semifinalist video submissions in late March and will select about 10 finalists from among the group. The current Minnesota Teacher of the Year, Kelly D. Holstine, will announce her successor at a banquet May 5 at the Saint Paul RiverCentre in St. Paul.

Education Minnesota, the statewide educators union, organizes and underwrites

the Teacher of the Year program. Candidates include pre-kindergarten through 12th-grade and Adult Basic Education teachers, from public or private schools.

Semifinalists for 2019 Minnesota Teacher of the Year are listed below, including the district, school, subject area and grade taught:

.....
Joe Beattie, *Hastings Public Schools*, Hastings High School, Biology, 9–12

Stephen Booth, *Laporte Independent School District 306*, Laporte School, Elementary, 4

Myriam Castro-Franco, *Roseville Area Schools*, Little Canada Elementary, Spanish immersion, 3–4

Joshua Coval, *Bloomington Public Schools*, John F. Kennedy High School, English/Language Arts, 9, 12

Jeffrey Davies, *Roseville Area Schools*, Roseville Area High School, Industrial technology – Woods and Trades, 9–12

Jessica Davis, *South St. Paul Public Schools*, South St. Paul Secondary, Math, 11–12

Sharon DeLisle, *Minneapolis Public Schools*, Anwatin Middle School, Math, 7–8

Anna Edlund, *Eastern Carver County Schools*, Bluff Creek Elementary, Gifted services and STEAM Lab, K–5

Eric Erickson, *Saint Paul Public Schools*, Como Park Senior High School, Social studies, 11–12

Emily Firkus, *Minnehaha Academy*, Minneapolis, Science, 6, 8

John Fitzer, *Delano Public Schools District*, Delano High School, Spanish, 10–12

Julie Frawley, *Chisago Lakes Schools*, Chisago Lakes Middle School, Math, 8

Mandy Gallant, *Wadena-Deer Creek Public Schools*, Wadena-Deer Creek Elementary, Kindergarten

Bernetta Green, *Saint Paul Public Schools*, Eastern Heights Elementary, Elementary, 5

Jana Hedlund, *North St. Paul-Maplewood-Oakdale School District*, North High School, Special education, 9–12

Cindy Houle, *Anoka-Hennepin Schools*, University Avenue Elementary, Elementary, 3

Katie Johnson, *Elk River Area Schools*, Prairie View Elementary and Middle School, Elementary, 1

Katie Juul, *Bloomington Public Schools*, John F. Kennedy High School, English language arts and AP language and composition, 9, 11

Tark Katzenmeyer, *South Washington County Schools*, Woodbury High School, Instrumental music and band, 9–12

Molly Keenan, *Saint Paul Public Schools*, Harding High School, Social studies, 10–12

Julie Kirchner, *Wayzata Public Schools*, Meadow Ridge Elementary, Library media and information skills, Pre-K–5

Benjamin Lathrop, *Saint Paul Public Schools*, Harding High School, English, 10–12

Brian Meyer, *Moorhead Area Public Schools*, Horizon Middle School East, Health, 8

Heather Mortinson, *Elk River Area Schools*, Compass Transition Program, Special education, Ages 18–21

Nora Nutt, *South West Metro Intermediate District 288*, Reflections Day Treatment, Language arts, 9–12

Luke Olson, *South St. Paul Public Schools*, South St. Paul Secondary School, Math, 9–12

Stephanie Olstad, *Jordan Public Schools*, Jordan Elementary, Kindergarten

Theresa Pearson, *Winona Area Public Schools*, Winona Senior High School, English, 9, 11, 12

Eugenia Popa, *Saint Paul Public Schools*, Harding High School, English as a second language, 9–12

Ryan Rapacz, *Lakeville Area Schools*, Lakeville North High School, English, 10–12

Timothy Riordan, *Anoka-Hennepin Schools*, Blaine High School, Biology and environmental sciences, 11–12

Marcela Roos, *Eden Prairie Schools*, Eagle Heights Spanish Immersion, Elementary, 1

Steve Schmitz, *St. Louis Park Public Schools*, St. Louis Park Senior High School, Instrumental music, 9–12

Kaarin Schumacher, *South Washington County Schools*, Woodbury High School, AP Biology, 9–12

Kristen Seeger, *Albert Lea Area Schools*, Lakeview and Sibley Elementary Schools, Media literacy and technology, K–5

Emily Seppmann, *Mankato Area Public Schools*, Futures, Special education, 6–12

Jesse Smith, *Proctor Public School District*, Proctor High School, Chemistry, 9–12

Lucas Staker, *Osseo Area Schools*, Birch Grove Elementary School for the Arts, Elementary, 5

Cory Wade, *Bloomington Public Schools*, Hillcrest Community School, Elementary, 3

Wilbur Winkelman, *Robbinsdale Area Schools*, Lakeview Elementary, Elementary, 5

For more information, contact:

Doug Doohar
651-292-4820 (work)
651-245-6141 (cell)
Chris Williams
651-292-4816 (work)
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Source — Education Minnesota press release

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Robert Asp Teacher of the Year Supports Students and Colleagues



Moorhead Area Public Schools

Jennifer Dahl wants her students to feel respected and loved.

“I want my students to know that even when I see them at their worst, I know that their potential is still there, and I will never give up on them,” Dahl said.

Dahl, named this year’s Robert Asp Teacher of the Year, has been an emotional/behavioral disorders teacher for K-4 students at Robert Asp Elementary School since 2015. She also serves on the district staff development and Positive Behavioral Interventions and Supports committee, and the Robert Asp

building leadership team, school improvement committee and climate committee.

A teacher for 12 years, Dahl began teaching grade 5 at Tate Topa Tribal School in Fort Totten, N.D. She taught grade 8 special education at Cheney Middle School in West

Fargo from 2008-2013 before transferring to West Fargo’s South Elementary to teach elementary special education. In 2015, she followed her passion for teaching elementary students with emotional/behavioral disorders to the position with Moorhead Area Public Schools.

As a young child, Dahl had a desire to be a teacher, but as a young adult she was encouraged to pursue other career choices.

“After exploring several career options, nothing seemed to come as natural to me as teaching did,” Dahl said. “Despite all of the influences, I decided to pursue my degree

in elementary education. I truly believe that being an educator is my given path in life. It is my mission to ensure that all of my students feel respected and loved.”

Dahl graduated from Minnesota State University Moorhead with a bachelor’s degree in elementary education and a K-8 mathematics endorsement. In 2007 she received her special education endorsement from MSUM. Dahl earned her master’s degree in special education from MSUM in 2017. She also holds a master’s degree in teaching and technology.

After losing a former student to suicide, Dahl made the decision to teach elementary students with emotional/behavioral disorders and dedicate her effort to making sure her students feel loved and supported.

“I want my students to know there is a person who always believes that they have potential and can do anything,” Dahl said. “I encourage my colleagues and students to express kindness in unconventional ways. I want to provide a school environment that fosters learning and emotional well-being.”

According to Chris Triggs, principal at Robert Asp Elementary, Dahl is deserving of selection as Robert Asp Teacher of the Year, because of her love for the most challenging students.

“She brings such a positive energy to

her classroom and works very hard to engage her learners and help them believe they can be good students,” Triggs said. “The positive attitude in her classroom is contagious, and students love her and respond very well to her.”

As she designs lessons, Dahl considers the students and their experiences, their academic level, their preferred learning style, and their Individual Education Plan (IEP) goals and objectives.

“When I think about my lessons and concepts that I am teaching, I want to make them interactive and engaging,” Dahl said. “I am able to do this through singing, acting, using body movements, and using humor.”

Dahl wants her students to love coming to school, so she creates activities that actively involve and inspire them. She engages her students in collaborative learning projects that focus on the 4Cs of communication, critical thinking, collaboration and creativity.

“In my classroom, my students learn respect and responsibility through independent learning, group projects, and problem solving,” Dahl said. “When students leave my classroom, my goal is that they take the skills they’ve learned and apply them in all

Continued on Page 23



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John Awsumb, Bay View Elementary School, Selected MN National Outstanding Assistant Principal



John Awsumb, Proctor Public Schools assistant principal of Bay View Elementary School in Duluth and a member of the Minnesota Elementary School Principals' Association (MESPA) and the National Association of Elementary School Principals (NAESP), is Minnesota's 2019 NAESP National Outstanding Assistant Principal. MESPA and NAESP present this prestigious annual award.

The National Outstanding Assistant Principal program was established in 2011 to honor

assistant principals who are doing a superb job in their roles. MESPA and NAESP are committed to preparing assistant principals to step into the principal role. This program promotes educational excellence for pre-kindergarten through eighth grade (PreK-8) schooling and calls attention to the fundamental importance of the assistant principal.

"I have never in my 25 years in education nominated someone for an award of this caliber, but I felt compelled to do so in regards to my assistant principal, John Awsumb," wrote Diane Morin, principal of Bay View Elementary School, in her letter of recommendation for Awsumb. "He is truly one of the best administrators I have ever had the privilege to work with. His enthusiasm and positive attitude are contagious. One of his greatest strengths is his ability to communicate in difficult situations. He has the unique ability to validate what someone is saying and then work together with them to come up with a solution. He is never defensive and has the innate sense to react the right way in all situations. Our school culture has become so much more positive since he has arrived at our school. Students, parents, and our community have embraced him and he is a total game-changer for our district."

Awsumb's work creating and implementing a multiple-tiered system of Positive Behavioral Interventions and Supports (PBIS) is one of his most significant accomplishments at Bay View Elementary, which serves approximately 600 students in grades PreK-5. The implementation of PBIS has drastically reduced behavior referrals and contributed to a positive and vibrant school community. "Our students understand our behavioral expectations, and they continue to use our mantra of Appropriate, Safe, and Kind (ASK) to guide themselves throughout the day," Awsumb writes. "Parents are fully informed of the interventions and appreciate the results that [the interventions] have on their children." The interventions provide students with "a platform to share their coping strategies with their peers, as well as building positive relationships with one another."

Another of Awsumb's accomplishments is the creation of the Bay View Community Garden thanks to a \$25,000 grant he secured from the Northland Foundation. The garden "has become a focal point of our campus for students to enjoy and study nature," Principal Morin wrote. Throughout the fall, students helped tend the garden, and teachers regularly brought students out to the garden for a variety of learning opportunities. A bounty of vegetables was harvested from the garden, and a "garden reveal" in September attracted hundreds of people from the community as well as media outlets. The garden will continue to host a wide variety of inter-disciplinary, multi-generational experiences that will enrich the lives of Bay View's students for years to come.

"If you walk the halls with Mr. Awsumb, you would know in an instant how well

respected he is among our students, faculty, and staff," wrote John Engelking, Superintendent of Proctor Public Schools, in his letter of recommendation for Awsumb. "But his leadership doesn't stop there. He is also a key team member for leading innovations in how we grade and assess students. John is articulate, well-read, and a leader who brings out the best in his staff. He has a wealth of experience, he's bright, has a terrific sense of humor, and is dedicated to doing what is best for kids."

MESPA President-Elect Eric Skanson, principal of Cold Spring Elementary in Cold Spring, chaired the MN National Outstanding Assistant Principal selection committee. "We had a number of very strong applications this year, but John's really stood out," Skanson said. "The glowing recommendations from his supervisors, his obvious passion for students and learning, and his history of innovation alongside concrete achievements make him the perfect person to be named Minnesota's National Outstanding Assistant Principal. If anything, this honor seems long overdue. I can't wait to see what else John does in his career."

Prior to working at Bay View, Awsumb served as assistant principal at Columbia Academy in Columbia Heights, MN from 2011-2017.

Source – MESPA press release

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The College of
St. Scholastica

Jennifer Dahl Continued from Page 22

settings. When my students are able to regulate their emotions and feel proud about themselves, they are able to be academically successful."

Dahl wants not only her students to love school, but she also wants all students to love school. Each year she brainstorms ideas with her colleagues about how to allow learning to come to life.

"My students and I create activities that invite different grade levels into our classroom," Dahl said. "Each school year my students and I host exploration days for all of the students receiving special education services. My students and I create interactive centers that allow students to explore different concepts."

Triggs said Dahl is a great support to her special education colleagues, whether it is celebrating their birthdays by decorating their rooms or by wearing a costume on a

special occasion at school.

"She also works with administration and completes the paraprofessional scheduling each year, making sure we use our support people to the best advantage for kids," Triggs said.

Dahl is honored to be named Robert Asp Teacher of the Year.

"With the support of my colleagues, administrators, parents and students, I am able to be a positive role model and lead through kindness and perseverance," she said.

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