

# RAVEN IMPACT



FISCAL YEAR 2019

**R** A V E N



## INVESTING IN THE FUTURE

Our top priority at Raven is to provide long-term value and growth from the markets we serve to our stakeholders. We deliver on that commitment by making sound and responsible decisions today, knowing that they will positively impact our future. That same approach is true for our commitment to be a good, responsible corporate citizen. In fiscal year (FY) 2019, we took considerable action to help improve the markets we serve and the communities in which we operate. While the results at times can be immediate, we know that the decisions and actions we take today will have a far lasting impact on the days, weeks, and years to come.

In FY 2019, Raven team members continued to generously give of their time. Our team members receive 10 hours of paid volunteer time a year as part of our benefits package. With that time, our team members volunteer with various non-profit organizations, including several Raven-sponsored events. It's our belief as an organization that when we give back to those in need it creates a ripple effect of positive actions and encouragement for others to get involved.

We continue to responsibly invest in charitable organizations to help strengthen our communities. For example, in FY 2019, Raven provided a charitable investment to The Banquet, a non-profit meal service for people in poverty. The Banquet was looking to expand its services to meet the demands of a growing city and the need to feed those most at risk for being hungry. With the help of our donation, The Banquet is able to serve nearly 200,000 meals each year in its two locations.

We also believe in providing our team members with resources and tools they need to succeed in their career development. In FY 2019, Raven team members participated in nearly 33,000 learning courses and activities. By providing the right development, we are creating a strong and enduring pipeline of Raven business leaders who continue to lead our company towards future success.

In FY 2019, we saw a significant increase in our support of STEM-related education opportunities, partnering with Girls Scouts, Dakota State University, and Agriculture Futures of America to provide unique insight into STEM careers. In addition to STEM-related opportunities, we established the Raven Inspiring Students to Excel (RISE) program, which offers high school students the opportunity to experience a career in manufacturing while still earning high school credit.

We believe in our purpose to Solve Great Challenges — both in the markets we serve and the communities where we live. In order to solve those challenges, we must invest today in order to pave the road for tomorrow. By doing so, we believe our company will have a lasting positive impact.

Sincerely,

Chief Executive Officer & President  
**DANIEL A. RYKHUS**



# VOLUNTEERISM

We are committed to giving back our time, empowering our team members to make significant impacts in areas that align with their interests.

Each year, Raven team members give thousands of hours of non-profit service to their communities. Beyond those efforts, Raven also organizes opportunities for team members to give back in a meaningful way. In FY 2019:

Raven team members volunteered **495 hours** of their time helping The Banquet, Feeding South Dakota, and the Multi-Cultural Center of Sioux Falls fulfill their missions.

**29 Raven team members** served as mentors through Junior Achievement and Lutheran Social Services. Their efforts collectively impacted over **450 students** from kindergarten through high school, helping to develop the next generation of leaders and innovators.



Countless other efforts are put forth by Raven team members outside of Raven-sponsored activities. We thank them for their service and commitment to our communities.

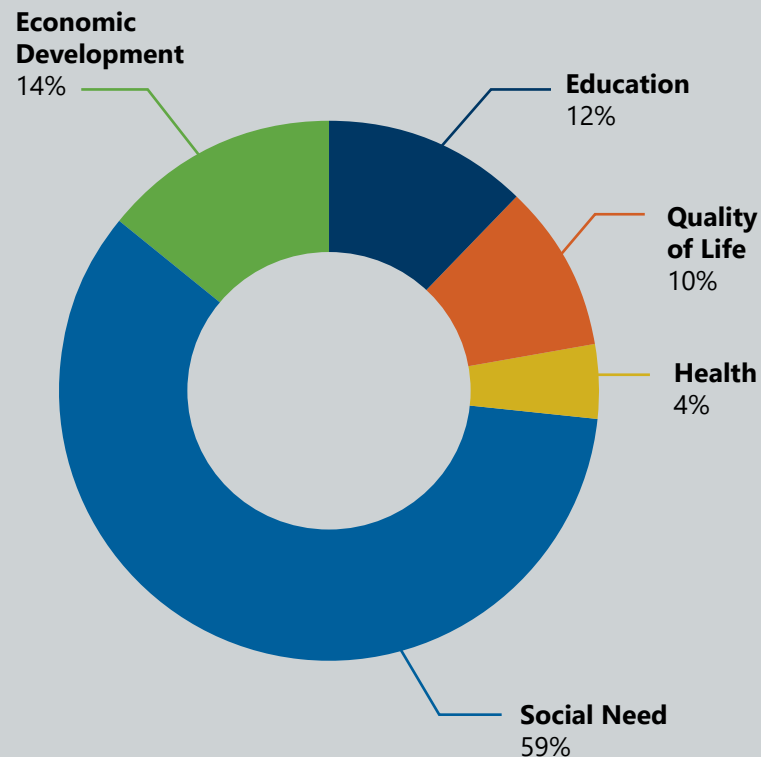


# CORPORATE PHILANTHROPY

We provide strategic investments and charitable contributions to organizations who align with our purpose to Solve Great Challenges, the Raven Way, and our business model. By doing so, we help strengthen the communities where we operate and live.

Our contributions align to five major categories: Social Need, Economic Development, Education, Quality of Life, and Health.

In FY 2019, **over 35 organizations** received charitable donations on behalf of Raven.



In FY 2019, the Company extended charitable giving to include many of our satellite locations, including Madison, SD; Sulphur Springs, Midland, and Pleasanton, TX; and Arlington, VA.

Looking ahead, we are extending our giving to our international communities for FY 2020 and beyond. By extending our charitable giving, we can help and support the quality of life in all communities in which we operate.



## TEAM MEMBER GIVING SPOTLIGHT

Beyond corporate donations, Raven team members also make charitable giving a priority. During the 2018 holiday season, team members across the company chose to make donations of their own:

- The Raven Aerostar team in Sioux Falls donated **three new bicycles** to children in need. The team chose to use a portion of their holiday party funds to purchase the bicycles for deserving families.
- The Raven Applied Technology team in Sioux Falls used a portion of their holiday party budget to donate toward **three non-profit organizations**: Feeding South Dakota, Safe Families for Children, and The Compass Center.
- Our manufacturing operations team donated items to residents of the Adult Day Services program at LifeScope. In total, over **160 items** were given, including stuffed animals, slippers, jewelry, and puzzles. The items were given to individuals without family members to go home to for the holidays.
- Raven team members across eastern South Dakota contributed generously to Spirit Trees — each with the Christmas wish of a person in need. As a result, our team members **fulfilled nearly every wish** left by the Volunteers of America.
- The Raven do Brasil team participated in a campaign called “Papai Noel dos Correios” (or “Santa Claus from the Post Office”). They gave gifts in response to **20 letters** from their local Postal Service in order to help make a better Christmas for underprivileged children around the country.

# SUSTAINABILITY IN OUR OPERATIONS

We believe it is our responsibility to protect Earth's resources to ensure a reliable and sustainable environment for future generations. Dedicated to protecting the environment in all areas of our operations, our goal is to be more efficient with energy use and reduce the amount of waste we send to landfills.

In FY 2019, Raven operations in Sioux Falls, SD\*:

- Recycled **25.5 tons** of material through single-stream recycling
- Recycled approximately **53.08 tons** of cardboard
- Used a total of **29.9 million kWh** of energy
- Consumed **3.0 million gallons** of water

As we continue to grow and expand, Raven consciously plans and seeks LEED® Certification on renovation and new construction projects, and we continue to innovate resource-conservation features into the architecture.



## LED LIGHTING RETROFIT

In FY19, we began replacing old fluorescent lighting with new LED fixtures in key areas of our manufacturing operations. As a part of this project, **over 1,550 light fixtures** in our Sioux Falls, SD and Sulphur Springs, TX locations have been replaced.

Over a one-year period, these LED light fixtures will save about **1.4 million kWh of electricity** and approximately **1,140 tons of carbon dioxide emissions**. Not only will this greatly decrease utility costs for Raven in the long-term, but it will also help preserve our environment by reducing emissions and conserving energy use.

## PRODUCTION WASTE RECYCLING

Raven strives to solve great challenges while not negatively impacting the environment. In addition to reducing waste and recycling materials used in our facilities, Raven Engineered Films operates a state-of-the-art plastic reclaim center, which converts excess materials into reusable plastic resin. In FY19, **over 10.2 million pounds** of film and sheeting were reclaimed.

Raven Engineered Films uses the majority of the reprocessed resin pellets in select film and sheeting products and sells over 2.5 million pounds to customers for use in their products. The products produced with the reclaimed resins help preserve our environment by protecting water resources and acting as barriers to potentially-harmful chemicals.

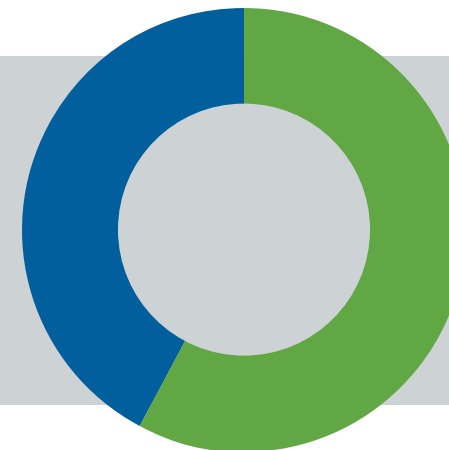
## ENERGY CONSUMPTION

- Derived from Renewable Sources: 8.7 million kWh, 29%
- Derived from Non-Renewable Sources: 21.2 million kWh, 71%



## ENERGY CONSUMPTION

- Derived from Carbon-Free Sources: 17.3 million kWh, 58%
- Derived from Carbon Sources: 12.5 million kWh, 42%



*\*The vast majority of the Company's manufacturing and daily activities take place in Sioux Falls, SD. As such, the environmental impact of these operations is used as the benchmark for the organization.*



# SUSTAINABILITY IN OUR COMMUNITIES

Our commitment to sustainability extends far beyond ourselves — it involves our communities and future generations.

Raven is committed to being a community leader in sustainable practices, helping and inspiring people to learn about and discuss the importance of protecting our Earth.

## 2018 – 2019 SIOUX FALLS GREEN LEADER

For the third year in a row, Raven Industries achieved certification as a Sioux Falls Green Leader. We continue to engage in a variety of sustainable initiatives, including everything from safe waste-disposal initiatives to the use of reusable coffee mugs and dishes for team members.



## STUDENTS LEARN SUSTAINABLE PRACTICES

In July 2018, students participating in a 4D Design Lego Minecraft Camp visited Raven headquarters to experience the ways we have integrated environmental sustainability into our building and landscape design.

Ranging in age from 7 – 14, the students received a close-up look at our native prairie buffer strip along the river and green roof — two tactics used to conserve clean water and minimize pollution runoff into the Big Sioux River. They also toured inside the building and learned how much money and natural resources have been saved since implementing low-volume plumbing fixtures, energy-efficient lighting, and recycling and waste reduction initiatives.

After their experience, the students used this information to propose similar sustainable practices in the redevelopment of a site located just north of our main campus.



# TEAM MEMBER DEVELOPMENT & TRAINING

Raven places a high priority on the continual professional and personal development of our team members. We believe it is our responsibility to help our team members find opportunities for continuous improvement and ongoing success.

IN FY 2019, RAVEN PROVIDED

**\$65,000**

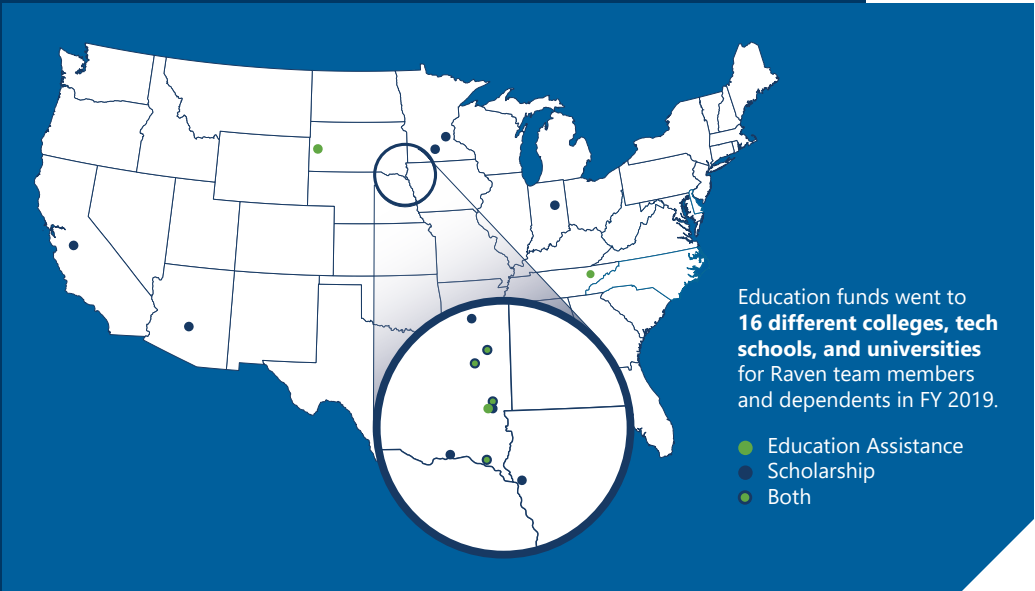
IN EDUCATION ASSISTANCE

To 18 Raven team members pursuing degrees in higher education, both undergraduate and graduate

**\$11,500**

IN SCHOLARSHIPS

To 23 dependent children of Raven team members for college, university, or tech school education



To flourish and remain healthy as an organization, we are continually investing in the personal and professional development of our team members. We provide support and encouragement to those who are clear and focused on their growth.

## RAVEN UNIVERSITY

Raven U is a centralized source for team members to pursue professional development. In FY 2019, **nearly 33,000 learning courses and activities** were experienced in classrooms, workshops, conference, and online by our team members. Topics covered everything from technical training to leadership development and compliance.

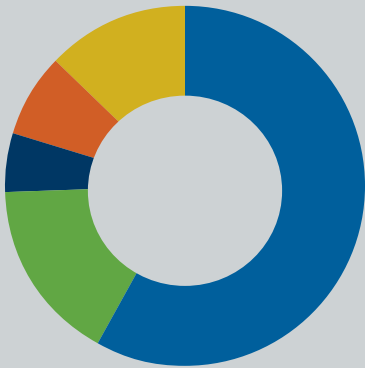
In addition, **125 Raven team members** had a formal Individual Development Plan in place during FY 2019, and **79 Raven team members** were enrolled in one of our Leadership Development Programs.

## PEAK TIME USE

Our Peak Time policy provides paid time for team members to explore opportunities that improve one's mind, body, and spirit. Raven team members use Peak Time to explore wellbeing resources, pursue leadership development activities, engage in a new activity, or embrace a healthy lifestyle change.

## LEADERSHIP DEVELOPMENT PROGRAMS

FY 2019 ENROLLMENT



- Emerging Leaders, 46
- Advanced Leadership, 13
- Organizational Leadership, 4
- Bridge Program, 6
- Leadership Immersion Program, 10

IN FY 2019, RAVEN TEAM  
MEMBERS USED

**3,300+ HOURS  
OF PEAK TIME**



## BUSINESS PURPOSE

PRODUCTS & SERVICES DELIVERED  
MARKETS SERVED

At Raven, social responsibility is part our focus in our every day. Our organizational purpose — to Solve Great Challenges — motivates and inspires us to design and produce technology that leaves positive impacts on people around the world.

Raven has always been an organization that wins by making courageous decisions, doing the right thing, and pitching in on whatever needs to be done. We hold ourselves to high ethical standards, and we expect our business partners to do the same.





## RAVEN APPLIED TECHNOLOGY

It's in our mission: Feed a growing population by improving agricultural efficiency around the world.

Improving efficiency and efficacy has led to the development and launch of premier Raven technology platforms, including the Hawkeye® Nozzle Control System, Raven Rate Control Module (RCM), and Sidekick Pro™ direct injection system. This has also been supported by strong technology agencies that are critical for application and machine control/coordination, including the RS1™ and SC1™ steering systems; Viper® 4 and CRx field computers; and our Slingshot® communication platform.

Raven's acquisition of AgSync in FY 2019 has allowed us to innovate a complete ecosystem which ties together the field and the office for the Ag Retailer, Custom Applicator, or Enterprise Farm. Slingshot® with AgSync improves operational efficiency by helping them better manage both machines and operators.

Slingshot® can enable an Ag Retail location to apply up to **50,000 more acres** a year. It will also notify the operation if they are spraying or planning to spray near sensitive crops, bees, and other environmental elements — promoting better environmental stewardship.



## IMPROVING OPERATIONAL EFFICIENCY

Throughout the company, Raven team members embrace a spirit of continuous improvement. It is a fundamental way we do business and a reason for Raven's continued success. A Japanese term representing this philosophy is kaizen: from the words "kai" — change, and "zen" — for the better.

The true spirit of kaizen adopted from lean manufacturing principles is powerful because anyone can do it. What happens when 1,300 team members each seek to make a small improvement? This can be sourcing a part for slightly less, creating a simple fixture to shave a minute off of build time, eliminating Styrofoam cups, using a smaller box for shipping, putting two work stations closer together, or having the right screwdriver always accessible in an assembly cell. We strive to be continually capitalizing on these small opportunities.

Another powerful form of kaizen is commonly called a "kaizen burst" or "kaizen blitz." The format of these events is typically a week-long stint of a cross-functional team meeting to address a narrowly-focused area and eliminating all the "muda" (waste) as possible in that week.

In FY 2019, Raven Applied Technology executed nine kaizen blitzes in its precision agriculture manufacturing operations. The cumulative efficiency improvements from these projects yielded **over \$100,000 in labor savings** and created floor space for new product capacity.

## RAVEN ENGINEERED FILMS

We're dedicated to providing plastic film and sheeting solutions that preserve and enhance customer investments while protecting Earth's resources.

In California, the Palos Verdes Reservoir has been part of Los Angeles County's extensive water service network since the late 1930s. The avocado-shaped facility provides **360 million gallons** of water storage, offering access to water for **19 million people**.

Geosynthetics play a significant role in the creation and rehabilitation of water resources. In FY 2019, Raven fabricated and installed geocomposite as well as a geomembrane liner and cover to greatly extend the service life of the Palos Verdes Reservoir and keep it operating efficiently.

Throughout the project, Raven:

- Fabricated **2.8 million square feet** of liner and cover for the protection of this precious natural resource.
- Constructed multiple 35-foot-wide lay-flat panels. Once packaged, each finished panel can cover **7,875 square feet** and weighs approximately **3,800 pounds** per roll.

Raven Engineered Films responds to the critical demands of the Geosynthetic industry through targeted product solutions that solve precise application challenges.



## PARTNERSHIP WITH LIFESCAPE: BETTER TOGETHER

Raven Engineered Films has enjoyed a partnership with LifeScape for several years. LifeScape's mission is to "empower children and adults with disabilities to lead fulfilling lives." They offer services in the Midwest that range from inpatient housing to job skills training, improving the lives of about **3,000 children and adults**. The clients served by LifeScape can lead full lives and contribute to our community through meaningful work opportunities.

Raven Engineered Films utilizes the services provided by LifeScape for various projects, including processing materials for distribution. In FY 2019, LifeScape helped Raven fulfill a large order for film in response to natural disasters in the United States. The team at Engineered Films enjoys collaborating with LifeScape on these projects; it is rewarding to see their clients produce quality work with eagerness and compassion for the ultimate customer: those impacted by hurricanes.

*"We are grateful to companies like Raven that see the value in the workforce provided by those people supported at LifeScape. Our workers are passionate about doing fulfilling work and being valued and contributing members of our community. We are grateful for this partnership."*

— Steve Watkins, CEO, LifeScape



## RAVEN AEROSTAR

Committed to connecting, protecting, and saving lives, our mission soars to the stratosphere with the most advanced lighter-than-air technologies.

Super pressure balloons (SPBs) are highly desired by the science communities served by Raven Aerostar. Raven provided the Pathfinder SPB to Columbia Scientific Balloon Facility in FY 2019 in support of a NASA mission in Antarctica. The system was designed to carry **75 pounds** to an altitude of **110,000 feet**, supporting the BARREL 6A science mission.

Launched from an area near McMurdo Station, Antarctica, the Pathfinder SPB stayed aloft for **73 days, 9 hours, and 55 minutes**, making almost **three full revolutions** around the Antarctic continent. The platform also provided valuable trajectory information that supported other NASA Antarctica campaign efforts.

The design and fabrication of the Pathfinder SPB system displayed Raven Aerostar's ability to leverage existing technologies and processes for a very aggressive delivery timeline. Close collaboration and support between facilities and team members fostered this milestone success.

# 6

### RAVEN FACILITIES

*supported design and fabrication efforts for the Pathfinder SPB system*

# 34

### BUSINESS DAYS

*passed from receipt of the purchase order to final shipment of the Pathfinder SPB system*



## FLIGHT OPERATIONS: STRATOSPHERIC ACHIEVEMENTS

In FY 2019, the Flight Services and Operations department in Raven Aerostar made monumental strides in the refinement of the entire stratospheric balloon operation. Beginning with the reduction of the logistical footprint, the need for outside vendors to support a campaign has been almost eliminated. This enables the team to quickly move from one launch location to another to better meet the needs of our customers and support their mission objectives. In the past year, the operation transformed from a collection of shipping crates in semi-trailers, to self-contained operations in shipping containers for maritime operations, to the current operation. Today, the core of the team's operations are done from two customized working and communication trailers.

Throughout the **82 flights** launched in FY 2019, the team streamlined pre-flight and launch procedures, reducing the day-of launch prep time by **35%**. With support from Engineering, pre-flight checks and launch procedures were also simplified. In addition, many components of the launch support equipment were enhanced to increase launch reliability and reduce the manpower needed to launch single or multiple balloons in succession when required by our customers. All these improvements were achieved while significantly increasing the on-time launch dependability.

The Flight Operations team also gained the ability to manage and coordinate the entire operation, from flight predictions and FAA coordination, to monitoring and piloting balloons to desired locations, to completing the flights and recovering the equipment. A variety of backgrounds and experience have been brought together to form a successful team that has been taking on new challenges, which will ultimately allow our customers to solve great challenges using our stratospheric balloons and flight services.

# INVESTING IN THE FUTURE

At Raven, we are committed to teaching the next generation to be effective problem-solvers, innovative thinkers, and lifelong learners. Ever looking forward, we continue to invest in the future of Solving Great Challenges.

In FY 2019, we established an annual partnership with Agriculture Futures of America (AFA), impacting college students in our communities by equipping them with personal and professional development opportunities. Through this partnership, we will further engage and develop students through AFA events, such as their annual leaders conference.

- AFA participants include students from over **200 universities** and **43 states**
- Of all program participants, **65% are female**



## RAVEN INSPIRING STUDENTS TO EXCEL

In the fall of 2018, Raven launched a program called Raven Inspiring Students to Excel (RISE). The RISE program was designed to offer part-time employment opportunities to high school students in the Raven workplace, similar to an internship experience. As part of this program, these students attend their school classes in the morning and then finish their day working on the production floor as a part of our manufacturing operations teams.

In its inaugural year, six students participated, learning a variety of processes within cable processing. In addition to working on the production floor, RISE students also participate in enrichment activities, are paired with a Raven mentor, and attend learning sessions.

*"Overall, the students had very positive things to say about their experience, and they all agreed that Raven has been an incredible learning environment. We look forward to the continual development of this program and thank all of the team members that have been a part of making this an impactful experience for our students."*

— Kiley Vander Maten, Program Coordinator



In October 2018, South Dakota State University broke ground on the **Raven Precision Agriculture Center**. Students who are trained in this facility will provide a workforce that will be uniquely qualified and ready to provide value within the agriculture industry.



**SOUTH DAKOTA  
STATE UNIVERSITY**



# COMMITMENT TO STEM

At Raven, we are proactively investing in STEM education because we believe the need is great, and we believe we have excellent opportunities for students who are interested in STEM employment fields.

In FY 2019, Raven hosted a variety of STEM education activities:

- **5th Annual Engineering Career Day.** This interactive educational program provides an opportunity for high school students to explore real-life applications in a variety of disciplines. **Fifty students** from **15 high schools** attended this year's event, which was also expanded to include the hands-on engineering challenge of building an LED circuit board.
- **3rd Annual Raven Aerostar Balloon Day.** Balloon Day encourages and supports STEM education among South Dakota students while exposing them to the profession of engineering and manufacturing technologies. In FY 2019, over **200 students** across **six middle schools** participated in the largest Balloon Day to date.
- **STEM Outreach.** The Raven Ambassadors established a STEM outreach committee in order to encourage students at a critical age to consider a career in STEM. The team answered the question, "What is Engineering?" during interactive classroom presentations given to **215 students** in **4<sup>th</sup> – 6<sup>th</sup> grade** across **four schools**.

*"We know that when girls are given the opportunity, they change the world! This partnership with Raven allows girls to combine STEM learning with leadership development. By inspiring girls to discover more of what they really care about, we have an opportunity to prepare the next generation of female leaders in the STEM industry."*

— Marla Meyer, CEO of Girl Scouts–Dakota Horizons



## RAVEN AND GIRL SCOUTS– DAKOTA HORIZONS

In FY 2019, Raven entered into a three-year partnership with Girl Scouts–Dakota Horizons to create a cooperative learning environment with hands-on, minds-on activities. Together, the organizations are engaging young women in STEM topics and scientific reasoning while equipping them with leadership skills to take action and make the world a better place.

In October 2018, Raven welcomed **31 Junior Girl Scouts** from Southeast South Dakota to Raven Headquarters for a program called *Solving Great Challenges: Feeding the World with Technology*. At the event, 4th and 5th grade scouts explored and experienced how Raven feeds a growing world population using cutting-edge innovations.



## DAKOTA STATE UNIVERSITY STEM INSTITUTE

In FY 2019, Raven established a relationship with the STEM Institute at Dakota State University. We hosted students for an in-depth tour of Raven Aerostar's engineering and manufacturing spaces. In addition, Raven was invited to present at the university's Space Day, where we shared our stratospheric balloon technology with highly-engaged students from the university's physics, chemistry, and computer science programs.



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*We believe in our corporate responsibility to give back to our communities. Balloon Day represents our past, present, and future. Our goal is to inspire students by exposing them to the technology, products, and services from Raven Aerostar."*

*— Scott Wickersham,  
Vice President & General  
Manager, Raven Aerostar*





We Solve Great Challenges.

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