



GOVERNOR'S STEM ADVISORY COUNCIL

dedicated to building a strong STEM education foundation for all Iowans

Iowa STEM BEST® programs of the Governor's STEM Advisory Council

2014

Bettendorf/Pleasant Valley: Bettendorf and Pleasant Valley School districts are developing an internship Academy structure with local business on authentic computer science problems and solutions.

Contact: Tammy Chelf at tchelf@bettendorf.k12.ia.us

District Superintendent: Dr. James Spelhaug- spelhaugjim@pleasval.k12.ia.us ; Michael Raso- mraso@bettendorf.k12.ia.us

Cedar Rapids/College Community (or Iowa BIG): Iowa BIG is an option for earning core academic credit through project-based learning in real-time with 100+ partners from business, nonprofit, and government agencies.

Contact: Shawn Cornally at headmasteriowabig@gmail.com

Kirkwood CC/Univ. of Iowa/Clear Creek Amana/Iowa City/Regina/Solon/Tipton/West Branch/College Community:

STEM Innovator course offered at the Kirkwood Regional Center at the University of Iowa research park open to students from seven partner school districts to engage with STEM industry partners to develop solutions to problems of student and community interest. Students earn high school, Kirkwood Community College, and University of Iowa credit.

Contact: Leslie Flynn at leslie-flynn@uiowa.edu

Northeast Community School District in Goose Lake: The Northeast STEM program provides students with an innovative, problem solving, and discovery-based environment created in partnership with Lyondell Bassell that focuses on authentic, real-world problems through the infusion of technology and curriculum.

Contact: Alicia Christiansen; Alicia.Christiansen@northeast.k12.ia.us;

District Superintendent: Neil Gray; neil.gray@northeastcsd.org

Rock Valley (or Rocket Manufacturing): Rocket Manufacturing is a fully-functioning, student-run manufacturer that works with local businesses by crafting metal machined parts and tools that businesses or individuals request. Students do the marketing, accounting, design, production and customer communications as well.

Contact: Chad Janzen; cjanzen@rvcsd.org

2015

Iowa BIG North: A four-district consortium of Charles City, New Hampton, Osage and Rudd-Rockford-Marble Rock opted to brand as Iowa BIG North. Partners include Zoetis, Cambrex Corporation, Valent BioSciences Corporation and more, to immerse high school students in a half-day professional-based learning model.

Contact: Dr. Dan Cox, Charles City Community School District Superintendent, dcox@charlescitieschools.org

Hoover High School, Des Moines: Hoover High School's STEM BEST program pairs students with higher education partners Grand View University, ISU's Center for Biorenewables in Chemistry (CBiRC) and local businesses Accumold, DuPont Pioneer, EFCO, Storey Kenworthy, and United Way of Central Iowa, to provide students with opportunities to conduct research at a university or a business.

Contact: Maureen Griffin, School Improvement Leader, maureen.griffin@dmschools.org

District Superintendent: Thomas Ahart, Ed.D, at superintendent@dmschools.org

Davenport Community School District, Davenport: Davenport Community School District's "INSPIRE" program partners with local businesses MA Ford, Alcoa, Phoenix Closures and more, to immerse high school students in the business environment and explore manufacturing curriculum and pathways in their community.

Contact: Jennifer Boyd, boydje@davenportschools.org;

District Superintendent: Dr. Art Tate at tateart@mail.davenport.k12.ia.us

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2016

Assumption High School in Davenport: The school works with Victory Enterprises to develop a Virtual Reality STEM Career Exploration program for students that introduces them to STEM careers in Iowa and across the U.S.

Contact: Andrew Craig, President, at andy.craig@assumptionhigh.org

Boone Community School District: Boone CSD is implementing a grades 3-12, work-based learning continuum of awareness (early years), exploration (middle years) and training (high school) in partnership with a variety of employers and higher education institutions. *Boone CSD is one of four schools piloting a Quality Pre-Apprenticeship, building on grades 10-12 work-based learning experiences. They offer semester-length, project-based opportunities through the School Career Connections and vocational rehabilitation programs initially in plumbing and electrical fields in partnership with Kruck Plumbing & Heating Co. (a Registered Apprenticeship Program) and ABC of Iowa Apprenticeship & Training Trust. A goal is to expand these options with the growth of community apprenticeship partners over time.*

Contact: Kris Byam, Boone High School Principal, at kbyam@boone.k12.ia.us
District Superintendent: Brad Manard at bmanard@boone.k12.ia.us

Fort Madison Community High School: Students experience co-taught STEM courses of educators alongside industry partners in innovative learning spaces that introduce them to careers in their community, leading to job shadows and internships.

Contact: Greg Smith, Principal, at greg.smith@fmcsd.org
District Superintendent: Erin Slater at erin.slater@fmcsd.org

IKM-Manning Community School District: A learning environment focused on two important employability skills – communication and problem solving – where students, teachers and community leaders come together to brainstorm business project ideas and pursue them on teams.

Contact: Thomas Ward, Superintendent, at tward@ikm-manning.k12.ia.us

Muscatine Community School District “STEAM Into MCC”: Fourth and fifth grade students in all of Muscatine’s elementary schools take part in a five-month-long, afterschool program of hands-on projects led by community experts, held at MCC. *Muscatine CSD with MCC is one of four schools piloting a Quality Pre-Apprenticeship. Their program in the Manufacturing and Culinary Arts Academies is in partnership with MCC and aligned to the Iowa Core, leading to certificates in electronics and up to 38 credits toward an Engineering Technology Electromechanical Diploma (manufacturing pathway); or certificates in culinary arts and up to 32 credits toward a Culinary Arts Diploma. Partners are Chef Brad Scott for the culinary pathway, and companies HNI and Allsteel for the manufacturing pathway. All three are engaged in Registered Apprenticeship Programs.*

Contact: Dr. Jerald Riibe, Superintendent, at jerry.riibe@muscatine.k12.ia.us

North Cedar Elementary School in Cedar Falls: Students work hand-in-hand with Sidecar Coffee (local chain) to learn about the science of roasting and brewing coffee in order to create their own product and market it to the community.

Contact: Jennifer Hartman, Principal, at Jennifer.hartman@cfschools.org
District Superintendent: Dr. Andy Pattee at andy.pattee@cfschools.org

Spencer High School: Students travel to workplace sites for training and experiences that align with the community’s industry demand in construction, health care, manufacturing and entrepreneurship. *Spencer High School is one of four schools piloting a Quality Pre-Apprenticeship. Their program expands on the Construction Extended Career Experiences whereby students are at the job site receiving on-the-job training for an average of 12.5 hours a week. They also achieve their 10-hour OSHA certification in concert with the Quality Pre-Apprenticeship. Established Registered Apprenticeship Program partners include Milford Electric and Midwestern Mechanical.*

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Contact: Elli Wiemers, Principal, at ewiemers@spencerschools.org
District Superintendent: Terry Hemann at themann@spencerschools.org

Story County Consortium: Eight school districts in the consortium, including Ames, Boone, Ballard, Collins-Maxwell, Colonesco, Gilbert, Nevada and Roland Story, join forces to create a shared STEM BEST model that provides students with work-based learning opportunities with businesses in their communities.

Contact: John Kinley, Director, at jfkinley@dmacc.edu

Waukee APEX: Through a collaboration between education, business, and the community, Waukee Aspiring Professional Experience (APEX) develops highly skilled, adaptable, global innovators and leaders. Waukee APEX draws on the expertise of Des Moines-area business partners to bring real-world experience to high-schoolers. Through passion-based learning, authentic projects and experiences, students add value to business partners while exploring career possibilities identified by economic trends within their metro area and state. *Waukee APEX is one of four schools piloting Quality Pre-Apprenticeships. Their program guides high school seniors in learning past the initial APEX course in the manufacturing, construction and technology fields. Students will gain valuable experience, earn credentials and college credits and connect to business partners in the community. Waukee APEX's dissemination plan has been well-tested as a STEM BEST premiere model site for schools across Iowa.*

Contact: Michelle Hill, Director, at mhill@waukeeschools.org

West Delaware County Community School District: Students work directly with business leaders in the community to design and implement authentic projects for that business that also satisfy and align with state standards and teach students the professional skills necessary in the industry.

Contact: Tim Felderman, West Delaware High School Principal, at timfelderman@w-delaware.k12.ia.us

2017

Albia Community Schools: The Albia Community Schools will commence a collaborative learning model between business, community and education in the fall of 2018. This model will bring relevant, rigorous and authentic learning experiences to life for students while working with business partners and Indian Hills Community College. Students will be immersed in community projects with a STEM focus that will solve real problems in the Albia area, thus improving the living and working conditions for our citizens.

Contact: Kevin Crall, Albia Community School District Superintendent, at kevin.crall@albia.k12.ia.us

Alburnett Schools: The Alburnett Community School District developed and implemented a program called the Pirate Collaborative in 2016-2017 to bridge the needs and issues of businesses with increased applicability and relevance in learning for students. The Pirate Collaborative aims to aid students in the work they do for businesses in their school projects, and these businesses provide career awareness, preparation, and exploration to their students.

Contact: Matt White at mwhite@alburnettcsd.org

District Superintendent: Dr. Dani Trimble at dtrimble@alburnettcsd.org

Ankeny Schools: Ankeny created a college and career readiness program called Orbis that exemplifies the STEM BEST model, with a need for a full-time Director of College and Career Readiness to implement this program. The district also needs to begin pilot projects for Orbis which include meeting with local businesses, nonprofit organizations, and students to engage in collaborative project planning and design, along with a collaboration space for all of this to occur.

Contact: Dr. Jill Urich, Director of College and Career Readiness, at jill.urich@ankenyschools.org

District Superintendent: Dr. Bruce Kimpston at bruce.kimpston@ankenyschools.org

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Atlantic Community Schools: Atlantic Community Schools' STEM BEST® model is a pre-apprentice approach to the construction trades. Their business partners will provide support and expertise (Master Licensed contractors) as they create and implement a robust construction trades program. The Atlantic School Board has purchased a facility that can house such a program allowing room to develop more in years to come. Incorporating a comprehensive exploratory program at the middle school is another part of this project. The curriculum taught will include hands-on experiences in modeling and construction applications and 21st Century Skills, which will focus on employability skills, technology and financial literacy.

Contact: Heather McKay at hmckay@atlanticschools.org

District Superintendent: Steve Barber at sbarber@atlanticschools.org

Cedar Falls Community Schools: Cedar Falls is further developing a CAPS program in Engineering Technology, Communication and Design, and Education. The community partnerships will involve students working on projects that fulfill needs for businesses, job shadowing opportunities, access to resources and equipment for students and fresh, creative minds for businesses.

Contact: Kenton Swartley at Kenton.swartley@cfschools.org

District Superintendent: Andy Pattee at andy.pattee@cfschools.org

Chariton Community Schools: Chariton Community Schools in partnership with the Lucas County Development Corporation will implement the REAL (Relevant – Engaged – Applied – Learning) program in the 2018-2019 school year. The program will engage high school students in on-site, work-based, career-specific projects providing experience in STEM careers. Students will be exposed to high-demand fields such as design/engineering, diesel mechanics, IT, nursing, coding, finance, and supply chain. Initially, nine businesses, including Hy-Vee, Johnson's Machine Works and the Lucas County Health Center, have partnered to provide career awareness, exploration and preparation & training opportunities for students through tours, speakers, career course development committees and hosting students in the workplace.

Contact: Tracy Hall, Chariton High School Principal, at tracy.hall@chariton.k12.ia.us

District Superintendent: Paula Wright at paula.wright@chariton.k12.ia.us

Charles City, New Hampton, Osage and Rudd-Rockford-Marble Rock Community School: This is the second full year of operations for their Iowa BIG North consortium, which has been a catalyst for strengthening their business and school district partnerships. Within these districts, many local businesses have plans for incorporating student learning and relevance to their programs.

Contact: Dr. Dan Cox, Charles City Community School District Superintendent, at dcox@charlescitieschools.org

Davenport West High School: Davenport West High School purchased a Haas CNC Mill under the STEM BEST® award in 2015 and is expanding its Advanced Manufacturing program with the purchase of a Haas CNC lathe. Working with business partnerships and focusing on Advanced Manufacturing, Davenport West HS plans to revitalize manufacturing in the Quad Cities by creating a high tech area of students learning CNC programming and operating. Davenport West HS will work to expand student internships with M.A. Ford for students wanting to pursue careers as engineering technologists and engineers.

Contact: Greg Smith at smithgr@davenportschools.org

District Supervisor: Dr. Arthur Tate at tateart@davenportschools.org

Des Moines Hoover High School: Hoover's STEM Academy implemented in 2012 is a school-within-a-school model that focuses on providing robust experiences for all students who connect the Hoover learning community with businesses and institutes of high education in authentic, collaborative and challenging ways. This award expands upon a previously awarded STEM BEST® award and focuses on two goals: (1) providing students with opportunities to conduct research at a university or internship with local businesses and (2) providing teachers with ongoing, in-depth professional development.

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Contact: Maureen Griffin, STEM Administrator, at Maureen.griffin@dmschools.org
Kathie Danielson, Hoover High School Interim Principal, at Kathie.danielson@dmschools.org
District Superintendent: Dr. Tom Ahart at superintendent@dmschools.org

IKM-Manning Community School District: IKM-Manning wants to develop their Middle School SPARK program and repurpose a classroom into a Makerspace environment. This would help engage more students in project-based learning and with community business partners. The IKM-Manning Foundation GALA brings together many invested partners and has shown to be a sustainable source of funding in years past.

Contact: Sharon Whitson at swhitson@ikm-manning.k12.ia.us
District Superintendent: Trevor Miller at tmiller@ikm-manning.k12.ia.us

Iowa City Community School Schools: Iowa City community school district wants to scale all of their current STEM-driven programs to provide the experience to all students that connects each individual program. Many businesses have been involved with the individual programs for years and continue to support the school district.

Contact: Matt Degner, Assistant Superintendent, at degner.matt@iowacityschools.org
District Superintendent: Stephen Murley at murley.stephen@iowacityschools.org

Marshalltown Learning Academy: Marshalltown schools created the Marshalltown Learning Academy to provide a personalized learning environment for students several years ago; due to great success, they want to scale up the program and include apprenticeship programs with area businesses that are often already in partnership with the school district.

Contact: Eric Goslinga at egoslinga@marshalltown.k12.ia.us
District Superintendent: Dr. Theron Schutte at tschutte@marshalltown.k12.ia.us

Muscatine Community Schools with West Liberty Elementary and Muscatine Community College: STEAM into MCC was a recipient of a 2017 Iowa STEM Best grant. In the spring of 2017, all six elementary schools in the Muscatine Community School District (MCS D) and teachers from MCS D and Muscatine Community College (MCC) partnered to offer a unique after-school program for 4th and 5th graders. 28 kids participated in the inaugural program: 15 girls, 13 boys and 16 minorities. While much was accomplished in our first year, work remains to meet all of the outcomes and the ongoing support of the Iowa Best STEM Council is greatly appreciated. In 2018, we will double the number of students served and expand into a new elementary school with 54% Latino students.

Contact: Jerald Riibe, Superintendent, at jerry.riibe@muscatine.k12.ia.us

Newton High School: Newton High School's program is called Fledge Innovator, a partnership between the high school, businesses, and the community. Area business partners will provide authentic projects for students to work collaboratively on their assigned projects on site or at the new NHS STEM Innovation Center called "The Incubator." The course supports STEM initiatives and follows the University of Iowa's STEM Engineering or Biz Innovator Curriculums. The class will be open for juniors and seniors and will meet for 1.5 hours for nine weeks.

Contact: Bill Peters, High School Principal, at petersb@newtoncsd.org
District Superintendent: Bob Callaghan at callaghanb@newtoncsd.org

North Iowa Community School District: Partnering with a primary local partner, NGT (Next Generation Technology), North Iowa CSD plans to develop Next Generation Kits (NGK's), providing hands-on student-led learning opportunities that engage students while aligning to NGSS and other CORE standards, to be used in their Solution Center. NGK's will foster creativity, innovation and problem solving skills. Initial kit topics will include build a PC, Drones, Networking, Web Development, Robot Vacuums, Smart Homes, Security Cameras, 3D Printing, Astronomy and App Design.

Contact: Cory Myer, Superintendent, at myer@northiowa.org

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Oelwein Community Schools: PROJECT ONE was created by the Oelwein Community School District in conjunction with the Oelwein Economic and Area Development to create opportunities for students to flourish in robust Project and Work Based Learning Environments. With support of local businesses, authentic learning opportunities will provide students with a rich opportunity to explore interests, learn in cross-curricular classrooms and develop skills of the Universal Constructs. Pedagogical professional learning will be provided to teachers as OCS D prepares for this Project and Work Based approach to education. Oelwein Community School District believes EveryONE will have an opportunity to engage in: PROJECT ONE: ONE PROJECT, ONE BUSINESS, ONE STUDENT AT A TIME.

Contact: Deb Kaepfel at dkaepfel@oelwein.k12.ia.us

District Superintendent: John Ehn at jehn@oelwein.k12.ia.us

Southwest Valley Middle School of Villisca: Before the station closed, Villisca's local train station used to be a collaboration space for all community members. With the STEM BEST Grant, Villisca will regain that intellectual common place and it will be known as the Career Stop. Collaboration between community members and students will problem-solve real world situations. Our vision is to create a Career Stop which is a learning space where area businesses can come in to teach our students some of the skills they use on the job. Teachers and businesses will work together to create curriculum units that integrate entrepreneur and apprenticeship skills and hands-on learning job skills for students.

Contact: Lora Top at ltop@villiscaschools.org

District Superintendent: Willie Stone at wstone@corningcsd.org

Spirit Lake Middle School: The goal at Spirit Lake Middle School is to create a multipurpose educational makerspace that connects school with community. The makerspace concept provides hands-on, creative ways that allow students to innovate while engaging them in deep learning in all academic disciplines. Connecting with local businesses and nonprofits to raise STEM career awareness and job skills are also a priority. The end goal is to establish a public asset Makerspace that will deliver STEM opportunities not only to Spirit Lake students but also to the community.

Contact: Rick Reinking, Director of Strategic Partners and K-12 STEM, at rreinking@spirit-lake.k12.ia.us

District Superintendent: Dr. David Smith at dsmith@spirit-lake.k12.ia.us

West Liberty Community Schools: The goal of the project is to bring an innovative technology experience involving virtual reality to the students. Shaking Earth Digital, LLC (SED) will design a program for students to create their own virtual reality (VR) game or experience. Students will create a project in an after school program. "I'm beyond excited. We have a unique opportunity to not just expose students to future technology, but to shape future itself." - Jens Zalala, owner of Shaking Earth Digital. "We wanted students to be creators behind VR. We are thrilled to bring this experience to our students and grateful for partnering with Shaking Earth Digital!" - Jackie Henderson, West Liberty Community Schools teacher.

Contact: Jackie Henderson at jhenderson@wl.k12.ia.us

District Superintendent: Joe Potts at jpotts@wl.k12.ia.us

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