

## More Than Money: Grants Facilitate Growth of Juda STEAM Program



Juda School District STEAM Director, Jackie Klar (left) and Juda School Superintendent, Traci Davis (right) accept the \$10,000 America's Farmers Grow Rural Education Grant from Mike Hopke, Bayer, at a recent presentation. (picture taken from Juda School Website as submitted by Kathy Roth)

Amazing opportunities continue to develop as the Juda WE STEAM (When Everyone does Science, Technology, Engineering, Art, Agriculture, and Mathematics) Program continues to grow through the ongoing support of grant programs and community partnerships.

The Juda STEAM program emerged from humble beginnings from the following question posed by science teacher Nancy Samplawski. "What can we do so we get students to think critically and persist through solving a tough problem? Really, can we have students DO?"

The answer came as an initial \$3 per student commitment from Juda school administration. The funding along with flexible thinking about teacher roles, and the daily school day structure launched what has become a WE STEAM culture at Juda School. Despite the humble beginning, the program had immediate impact.

"The opportunity to try, fail, and revise was a critical component in the first attempt of STEM inclusion," states math instructor Scott Anderson. "The STEM TEAM knew it was important to find a way to make this happen district-wide."

The timing for the development of the program was perfect as partnership funding and professional development opportunities unfolded. A core group of staff attended a two week, grant-funded professional STEM development program organized by Jodean Grunow and Tim Dies at UW-Platteville. Initially, Samplawski, Anderson, Traci Davis (administrator), Mary

Larson (curriculum director), Amanda Prigge (middle school math and science), and Jackie Klar (middle level educator) attended the training. This group along with Juda agriculture teacher, Ralph Johnson, made up the Juda STEM Team. Commitment to the program included Saturday trainings as well and would continue for three years for most of the team; four for Klar and Prigge.

“The STEM team developed a vision about what STEM should look like in our school. We already had administrative and professional support, what we needed was financial support because our small school budget was already spoken for,” states Klar. It was at this time that Juda School was nominated by local farmers for the *America’s Farmers Grow Rural Education* (AFGRE) Grant.

“The connection former Juda agricultural instructor, Ralph Johnson, made between our nominating local farmers and Mary Larson was critical to the process. Without that connection who knows what would have happened,” informs Klar. “Then Mrs. Larson’s clear description of needs, vision, and identifying responsible use of the grant funds must have had an impact. We received the first grant and have been moving forward in significant ways ever since.”

Then STEM became STEAM; Theresa Wyss (arts) and James Pickett (business and technology) joined the team. With the first AFGRE Grant, Tetrax Robotic were purchased for the high school who competed in in a Robotics Rumble. The Middle School competed in a solar car competition. All students grades 6-12 had an additional gear challenge.

“We felt very fortunate to receive the AFGRE grant a second year. The team was at the STEM training in Platteville when it was announced. Let’s just say there was a great deal of joy that day,” comments Larson. With that grant Arduinos were added to the high school program and Lego Mindstorms were added to eighth grade. Klar previously had been teaching science and the decision was made to move the rocketry unit (materials all have been funded by a grant and now private partner) to the seventh grade STEAM program, and sixth grade competed with solar cars.

Incredibly, Juda received the AFGRE grant the third year. The STEAM team expanded Penny Ramos (fourth grade), and Lucy Stuckey (fifth grade). In the third year of the grant, the objectives were two-fold. Include every child in the district in STEAM applications and Train the Trainers. With the grant from year three Snap Circuits, Coding Caterpillars, Coding Mice, and Rokenboks were purchased. Klar became the District STEAM Coordinator and a full 4k-12 program was implemented. Most members of the WE STEAM Team presented and trained others multiple times.

This past summer, Anderson completed the NSF Low Cost Mechatronics Training. Klar completed the Raspberry Pi training; a tool that allows students to build and program computers from the ground up. AFGRE funds were used to purchase the Raspberry Pi equipment. In house tech leader, Deb Thompson, was instrumental in securing keyboards and monitors. Davis, Larson, Pickett, and Williams attended the ISTE Conference in Chicago.

And this year? “I just can’t believe it,” Larson responded when hearing Juda had won the \$10,000 AFGRE Grant a fourth year. “This is just incredible.”

“I feel very fortunate to be part of such a great community of people who have consistently shown support for our children,” stated Klar as she and Davis gave Monsanto representative and presenter, Mike Hopke, a tour of the newly remodeled Juda School. “You can see that we never take for granted the gifts that we have been given. Careful consideration was given to the purchase of sustainable, cross categorical, twenty-first century orientated spaces and supplies.”

Additional growth is evident in STEAM Team’s goals for the year; add school to community outreach, continue collaboration and growth in the classrooms, continue professional collaboration, and develop a school garden. Pencil Box Engineering has already been added to classrooms grades k-8. A Family STEAM Night per quarter has been planned. Take home STEAM backpacks are in development with plans to implement this year. Wyss will

be presenting at Art Educators Conference, Klar will present at the Wisconsin Rural School Conference.

Klar voiced an idea shared by many at Juda School. "We aren't really investing in the future. We are investing in now. Students of all ages are great thinkers and can contribute to society. It is exciting to be part of a program that allows them to see that and use their skills. I'm proud of our little school with big ideas and the community that supports them."

List of

- Staff training of Maker Spaces - [Boat, Hands On](#)
- Part of NSF Low Cost Mechatronics Training Program - [Training Building Trainer](#)
- Continued All Student 6-12 STEAM projects (outside of graded class) - allowing students to experience Real Life Trial & Error, Revisions [2017 Project](#) [2018 Project](#)
- Setting up 2019 Project for all MS and HS students to start in October
- Professional Development in-house for local school districts
- Started Introduction to Engineering Course with dual enrollment with UW-Oshkosh CAPP program. Some projects include [Catapult](#) [3D printing](#) Energy Efficiency Projects [Wizard of Oz Tornado](#) Rube Goldberg
- STEAM Staff Team has been part of UW-Platteville's STEM summer course work for 4 straight summers. Have trained about 15% of the teachers.
- Continue After School Rocket Club grades 6 -12
- Developed and implemented a 4K-5 weekly STEAM curricula
- Created a District STEAM Coordinator position
- Run a Family STEAM Night [https://docs.google.com/presentation/d/16D\\_EmMRlrRtD-H0U-l6ZiqZj3bhAQhEnCNmtTpOkqpk/edit#slide=id.g3665e821e9\\_0\\_6](https://docs.google.com/presentation/d/16D_EmMRlrRtD-H0U-l6ZiqZj3bhAQhEnCNmtTpOkqpk/edit#slide=id.g3665e821e9_0_6)
- Mrs. Klar trains and becomes Raspberry Pi certified; materials purchased to move forward
- Staff members attend ITSE in Chicago
- Staff members present at WTI Conferences [https://docs.google.com/presentation/d/1EmQRHE7tzxY\\_xjGpyapsa0fXheH5jwBS1FHZtFYakvl/edit#slide=id.g2405e3af49\\_0\\_4](https://docs.google.com/presentation/d/1EmQRHE7tzxY_xjGpyapsa0fXheH5jwBS1FHZtFYakvl/edit#slide=id.g2405e3af49_0_4)
- Staff members present at WMC [https://docs.google.com/presentation/d/1E9f3SUqLFJppg9Zc5uCQq8AluXtDkCyWSCRx-qGhjqc/edit#slide=id.g2405e3af49\\_0\\_4](https://docs.google.com/presentation/d/1E9f3SUqLFJppg9Zc5uCQq8AluXtDkCyWSCRx-qGhjqc/edit#slide=id.g2405e3af49_0_4)
- Create 100 Pencil Box Engineering Kits; grades k-8; pencil boxes donated by Wal-Mart, Mrs. Klar, and community member Nancy brooks



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- Mrs. Klar's notes from 2017-2018 school year  
<https://docs.google.com/document/d/1A7MOKqrUWVILKdMv9xwFZGATNCSXvc6Gbt-0Hv4TCxU/edit>
  - STEAM TEAM Meeting Notes
  - Activities
  - Presentations
  - Keynote speaker Thomas Goudreau, Lockheed-Martin
  - Systematically develop Growth Mindsets for students and Staff
- Miss Wyss to present at Art Conference
- Mrs. Klar to present at Wisconsin Rural Schools Conference