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Hometown Heroes: Knight Foundry Teaches Machining Skills

Sarah Spinetta
Apr 10, 2022



Volunteer Jerry Meredith with some of this year's students.

COURTESY PHOTO

Amador High School students now have the valuable opportunity to learn the art of machining and metal fabrication, introducing them to the basics of the trades through a

partnership with Knight Foundry volunteers.

Taught by Ron Edgar and Jerry Meredith, the Knight Foundry's participation in Mr. Mendosa's Agriculture Mechanics class teaches students the basics of machining and crafting their own tools.

Edgar started his career in machining just like these students he now helps teach, through a high school/trade school program as a sophomore. "I started my career at the age of 16 attending Thaddeus Stevens Trade School in Lancaster, Pennsylvania," he said. "I worked for a year after graduation then was drafted into the army for two years, moved to California and then was hired by Hewlett Packard and worked there for 14 years, receiving my journeyman certificate." He continued in the industry with Computer Cabinet Corporation, manufacturers, designers, prototypers and fabricators of precision sheet metal products, working up to General Manager, then President and Part-Owner before selling the company and making the move to Sutter Creek in 2002.



COURTESY PHOTO

Jerry Meredith watches on as student Anthony Rosa turns a thread on the lathe.

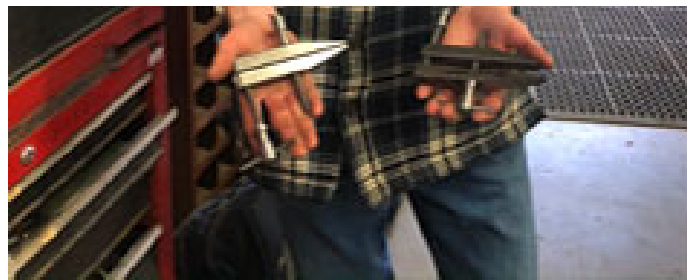
Sutter Creek introduced the lifetime metalworker to the historic Knight Foundry, where Ron quickly became involved in their many programs. When the opportunity presented itself to start an introductory program at Amador, he jumped at it. "Bill Braun, Chairman of the Amador Sawmill and Mining Association, suggested that Jim Hall and I start this program. Jim has since passed away and I am now working with Jerry Meredith, another Knight Foundry Volunteer, who is



a journeyman machinist with 53 years of experience working with seven different companies.”

“The Machine Shop program at Amador High School started in 2013, first as a Machine Restoration program,” Ron continued. “We collected old and discarded machines (saws, drill presses, wood lathes and etc.) and each student was given one to refurbish, rehab and rebuild. They learned how to take them apart, clean them up, repair whatever was broken, and paint the individual parts before reassembly. At the end of this program, they were allowed to keep these machines.”

The Restoration program continued until 2017, when the machine shop space began to develop. Today, the student’s shop is found in the former auto shop building, which has since been converted to host the Ag Mechanics/woodworking /metalworking instruction. “The Knight Foundry Restoration group had acquired enough machinery to support a Machine Shop class at the school, and we have a corner of this building where we work. In 2018, we started teaching the students how to operate machinery (lathes, mills, drill presses, belt sanders and grinders) and how to use precision measuring equipment.”



Last year’s project had students make a pair of parallel clamps, while this year, they are finishing up a chipping hammer.

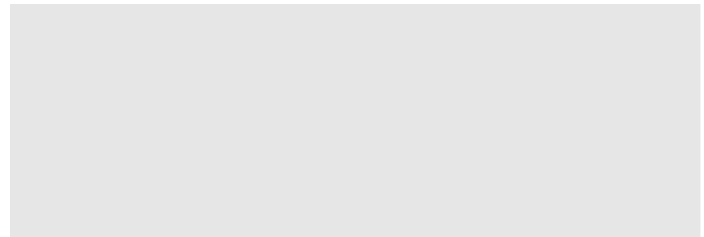
COURTESY PHOTO



Cole Bauduin on the grinder.

COURTESY PHOTO

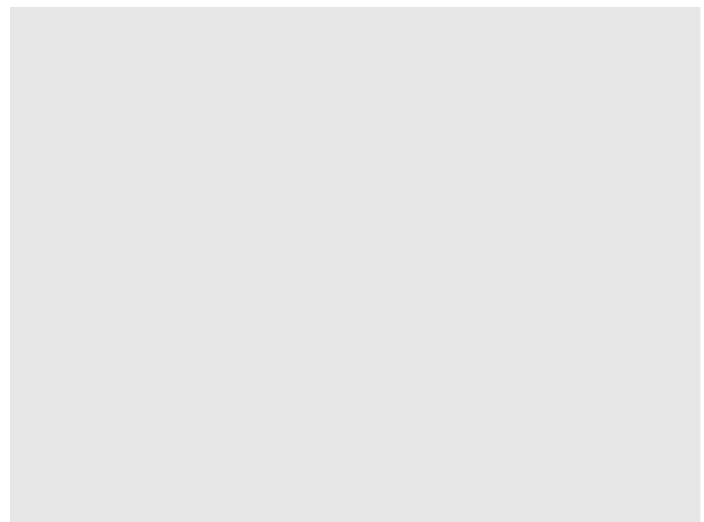
With the Machine Shop program, participants learn more than how to operate the range of equipment, but how to handcraft their own tools. Schematics are presented to the students, designed by the Knight Foundry Alliance, and they craft each individual part of the tool from scratch before assembly. Past projects included a chipping hammer, a set of parallel clamps and a return to the chipping hammer, and bonus nut and bolt for the 2021-2022 school year.



Nigel Misuraca on the lathe, turning his hammer handle.

COURTESY PHOTO

Amador's Career/Technical Education Department's Introduction to Ag Mechanics gives a base foundation of the workings of a shop, from tool identification and use to hands-on woodworking, metalworking and power machine operation, which the Knight Foundry volunteers build upon. "Students in Ryan Mendosa's Ag Mechanical program have the option of taking our class, who are usually the advanced students, juniors and seniors, that have already learned the basic welding and wood working skills. Jerry and I do lot of one-on-one training, a benefit of small classes. We try to expose them to many of the machine shop operations; engine lathe and vertical mills are the primary machines but we also spend time teaching them to do layouts, grinding drills and tool bits, tapping, heat treating, and finish sanding. Our program does not make these students machinists but it does expose them to the trade and adds to their capabilities, with several of our students ending up buying their own machines. One student is planning to go to a trade school after graduation."

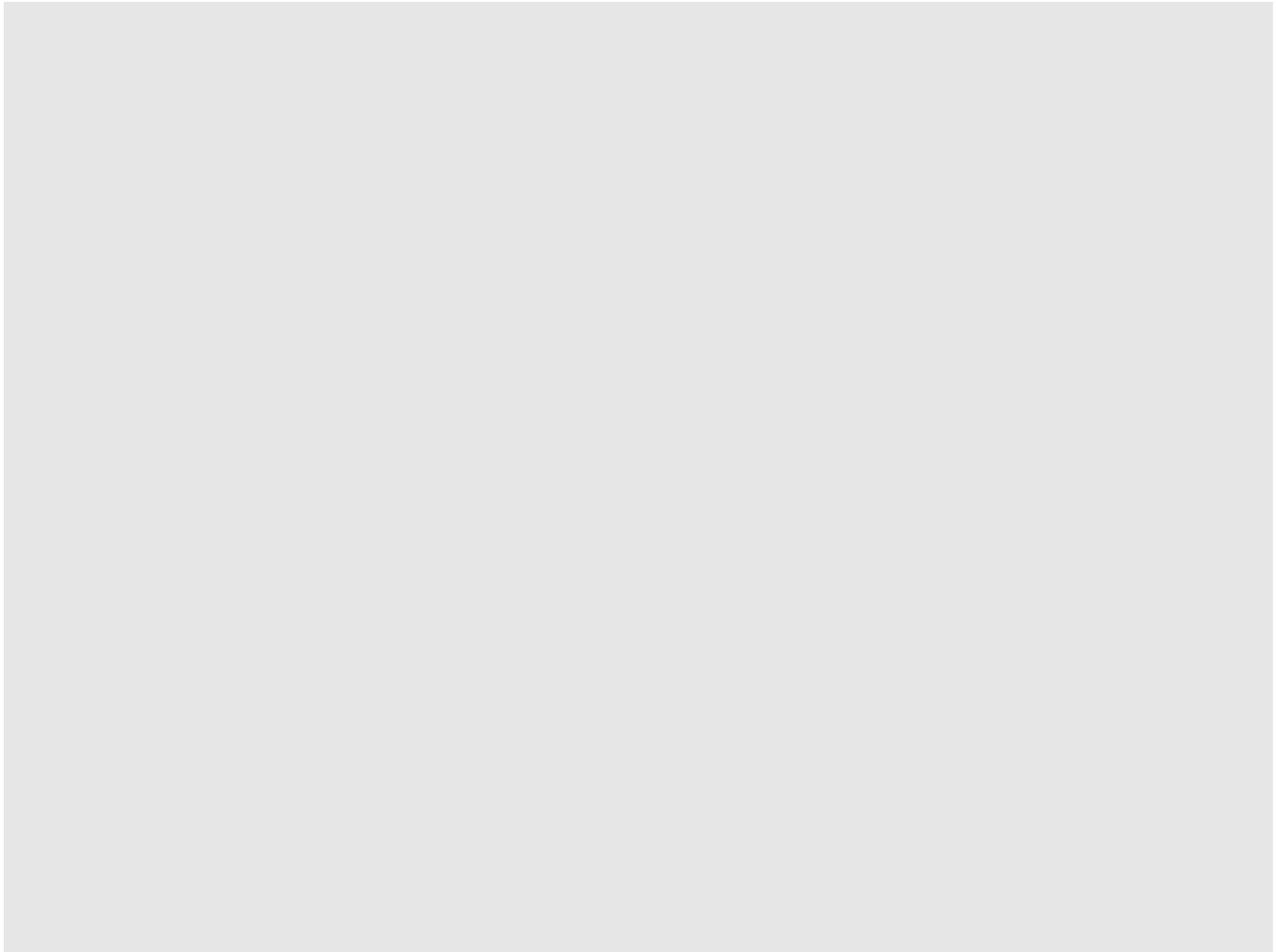


Collin Halleran on the milling machine.

COURTESY PHOTO

Through their years of experience with machining, Ron and Jerry enjoy giving back to local youth by teaching them skills that could lead to a future career path. "Now that I'm retired it's about giving back and helping others learn new skills," Ron said. "In my career I had many

wonderful people that helped me learn my technical trade and also how to work with people. My management style has always been one of teaching people how to improve their skills. The students at the high school volunteered to be there, it's a pleasure to introduce them to the world of machining. Jerry and I both feel very strongly that many people contributed to our knowledge and helped us be successful, and we would like to pass this on to others."



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"We are always looking for volunteers...the more volunteers we have, the more students we can have in our program," he finished. "All potential volunteers for this program should have some machine shop experience. If anyone wants to volunteer at our Knight Foundry restoration shop, where we work on repairing all things mechanical, mostly machinery, they can get in touch with me."

The Knight Foundry, the last operational water-powered foundry and machine shop in the US, is supported by their various events, tours and programs like their restoration shop's flipping and repairing of donated equipment which is then put on to the open market. To learn more about the Knight Foundry, to find their refurbished equipment or to make a donation to support their operation, visit their website at knightfoundry.com. The Foundry's restoration group meets weekly on Wednesdays at 9 a.m. at the Foundry, located at 81 Eureka Street, Sutter Creek, CA 95685.

For those with machine shop experience interested in volunteering with the Machine Shop program at Amador High School, or to volunteer at the Knight Foundry Restoration Shop, contact Ron Edgar by email at 4edgars@msn.com or call 209-304-7483.