

Examples of STEM Teacher Externships



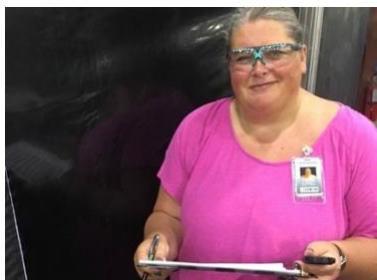
Engineering and Manufacturing: Grant Housman, Pleasant Valley High School Industrial Technology Teacher, worked on a manufacturing engineering team that designed an assembly line for a combine during his externship with John Deere Harvester Works. Some of his main duties included updating operator instructions with the correct tool information, designing multiple fixtures to hold sub-assemblies before they are put onto the main assembly and performing safety work orders.



Field Sciences: Lauren Buffington, Southeast Polk Junior High Science Teacher, assisted Neal Smith National Wildlife Refuge in reconstruction work, which included, planting native species, identifying and removing invasive species, taking detailed data on species present on the Refuge, collaborating with other interns and biologists on a Monarch research endeavor, completing frog, bird and plant surveys and monitoring the bison and elk populations. The team at Neal Smith is also collaborating with Lauren to bring some of these experiences to Southeast Polk's environmental learning center, where junior high and senior high school students have been working on prairie and stream reconstruction.



Laboratory Sciences: Caleb Grulke, Ankeny High School Chemistry and Biology Teacher, worked on the Kemin Industries specialty crops improvement team on phytochemical extraction from plant biomass. He worked on several different projects using distillation and solvent extraction to isolate the desired molecules from the plant mass. They used the analysis methods to determine the yield of their sample harvest. This helped Kemin determine the efficiency of the current harvesting and extraction processes used at the industrial scale as well as determine what new projects may be profitable.



Technology and Mathematics: Terri Cuttell, Spencer High School Mathematics Teacher, was an extern at Rosenboom Machine & Tooling and helped develop standard work for specific hydraulic cylinders being produced in a specific area of the plant. Standard work is a plan to be followed in production that will allow any worker coming into that area to produce a quality product efficiently.