

## **PDCCC Virtual Welding Lab Pilot Installed**

Paul D. Camp Community College took an important step toward meeting the critical needs of Virginia workers and employers on July 21 by installing the virtual welding lab pilot on the PDCCC Franklin campus. According to Randy Betz, education program coordinator at the Regional Workforce Development Center, it is the first virtual welding lab created in partnership with Northrop Grumman Newport News to be offered at a community college.

"There is a need across the region for skilled welders. With retirements anticipated in the next few years, the need has become critical. This virtual welding lab at Paul D. Camp provides a safe environment for the first stages of training activities," said Dr. Douglas Boyce, PDCCC president.

The virtual welding lab pilot, the next generation in computer based training program, was made possible through a partnership with Northrop Grumman Newport News, Advanced Science and Automation Corporation of Smithfield and Paul D. Camp Community College's Workforce Development Center.

Thanks to a \$20,000 grant funded by the Virginia Community College System's Institutes of Excellence, the virtual welding lab will allow the college to help meet the need for the growing shortage of trained welders in Virginia.

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**Photo by Larry Riposa**

Dr. Doug Boyce, Paul D. Camp Community College president (left), Brian Burroughs, Northrop Grumman Newport News training administrator (center), and Carolyn Crowder, vice president of the Workforce Development Center (right), watch as Dr. Ayman Wasfy, vice president of engineering at Advanced Science and Automation (seated) installs the first virtual welding lab program on several Franklin campus computers. The new technology will be blended into the welding classes taught this fall.

In addition, “In the future, the simulation can also serve as an assessment tool for personnel at Northrop Grumman Newport News to get a quick look at the skills of prospective employees,” said Boyce.

“The program offers a highly realistic web-based safe training environment where students can interactively learn about welding and access hands-on training on a virtual welding machine without risk of injuring themselves or damaging expensive equipment,” said Dr. Ayman Wasfy, vice president of engineering at Advanced Science and Automation in Smithfield.

Wasfy, along with Terri Zurfluh, Regional Workforce Development Center education program coordinator, co-wrote the grant proposal and welcomed the addition of the program to the college because, according to Wasfy, the lessons are adjustable to fit individual levels of expertise as students work at their own pace.

“Dr. Wasfy and his staff have done an outstanding job in creating this amazingly real lab setting to help meet the assessment and training needs of students, employers and college personnel,” Boyce said.

In addition to the efforts of Wasfy, Northrop Grumman Newport News welders under the leadership of Gary Roy, Gary McCrickard, and Brian Burroughs provided critical information about the welding puddle, welding rod angle, amperage, tip work distance, and travel speed, essential elements of the shielded metal arc welding process, Wasfy explained.

On hand to trouble shoot and assist with the installation of the program was Jackie Howell and Russ Powell, PDCCC network support specialists.

According to the program’s literature, the virtual tutor provides a high quality multimedia experience in general welding as well as lectures on specific welding equipment. Three-dimensional characters provided by Haptek, Inc. give a highly realistic look. Wasfy explained that the learning experience includes a hierarchical outline, synchronized speech, highlighted text, and animated graphical illustrations. The program’s framework allows for easy content modification.

The program installed at PDCCC teaches shielded metal arc welding and will be incorporated into the welding classes beginning this fall, but the ultimate goal of the virtual welding lab is to allow students to master welding safety and operation techniques before entering an actual welding booth, which will also save on welding supplies.

Another advantage to the program is more students will be able to train at one time with unlimited lab hours.

For more information on the virtual welding lab call Randy Betz 569-6064. For information on how to register for welding classes beginning August 22, go to [www.pc.vccs.edu](http://www.pc.vccs.edu) or call 569-6700.

Virtual Welding Lab - Microsoft Internet Explorer

### VIRTUAL WELDING LAB

**OUTLINE**

- Play Stop Pause
- Arrange windows for lecture
- Help
- Introduction to Welding
  - Most Common Welding Processes
    - Arc Welding
      - Shielded Metal Arc Welding
      - Gas Shielded Arc Welding
      - Gas Welding
    - Welding Safety
  - Shielded Metal-Arc Welding
    - Shielded Metal Arc Welding Process
    - Warm Ups
      - 1.Strike an Arc and Stringer Beads
      - 2.Horizontal 1/4" Fillet Welds
      - 3.Horizontal 3/8" Fillet Welds
      - 4.Horizontal 5/8" Fillet Welds
      - 5.Vertical 1/4" Fillet Welds
      - 6.Vertical 3/8" Fillet Welds
      - 7.Vertical Practice and Qualification Test
      - 8.Vertical 5/8" Fillet Welds
      - 9. Overhead 1/4" Fillet Welds
      - 10. Overhead 3/8" Fillet Welds
      - 11. Overhead Practice and Qualification
      - 12. Overhead 5/8" Fillet Welds
      - Weld Puddle
- Arrange windows for virtual environment

**MEDIA SCREEN**

Previous Next Stop Pause

**Virtual Welding Lab**

**Arc Welding**

**VIRTUAL ENVIRONMENT**

**VOICE COMMANDS**

- Views
- Viewing Parameters
- Agents/assistants

**SPEECH**

arc welding is often more practical and economical than gas welding . In gas welding the flame spreads over a large area, sometimes causing heat distortion . The source of heat in arc welding is produced by the arcing of an electrical current between two contacts . The power source is called a welding machine or simply, a welder, the welding machine is either electric or motor-powered . In Naval Construction, there are two main types of arc-welding processes with which you should become familiar . They are, shielded metal

Sample Screen Shot of Virtual Welding Lab