

Making the Connection

Mechatronics: Manufacturing's new heavyweight champ

Michael Alston describes his path from unemployed manufacturing worker to a project engineer for Volkswagen this way: "It's kind of like a Rocky story." And, similar to Rocky, he credits the support of his wife, Maquita, for making it happen.

When automotive manufacturing and its supporting industries collectively crashed, Alston, the father of four daughters, found himself laid off from his job with BASF: The Chemical Company, where he had worked for 13 years. That's when Maquita Alston, a special education teacher, decided to research her husband's options.

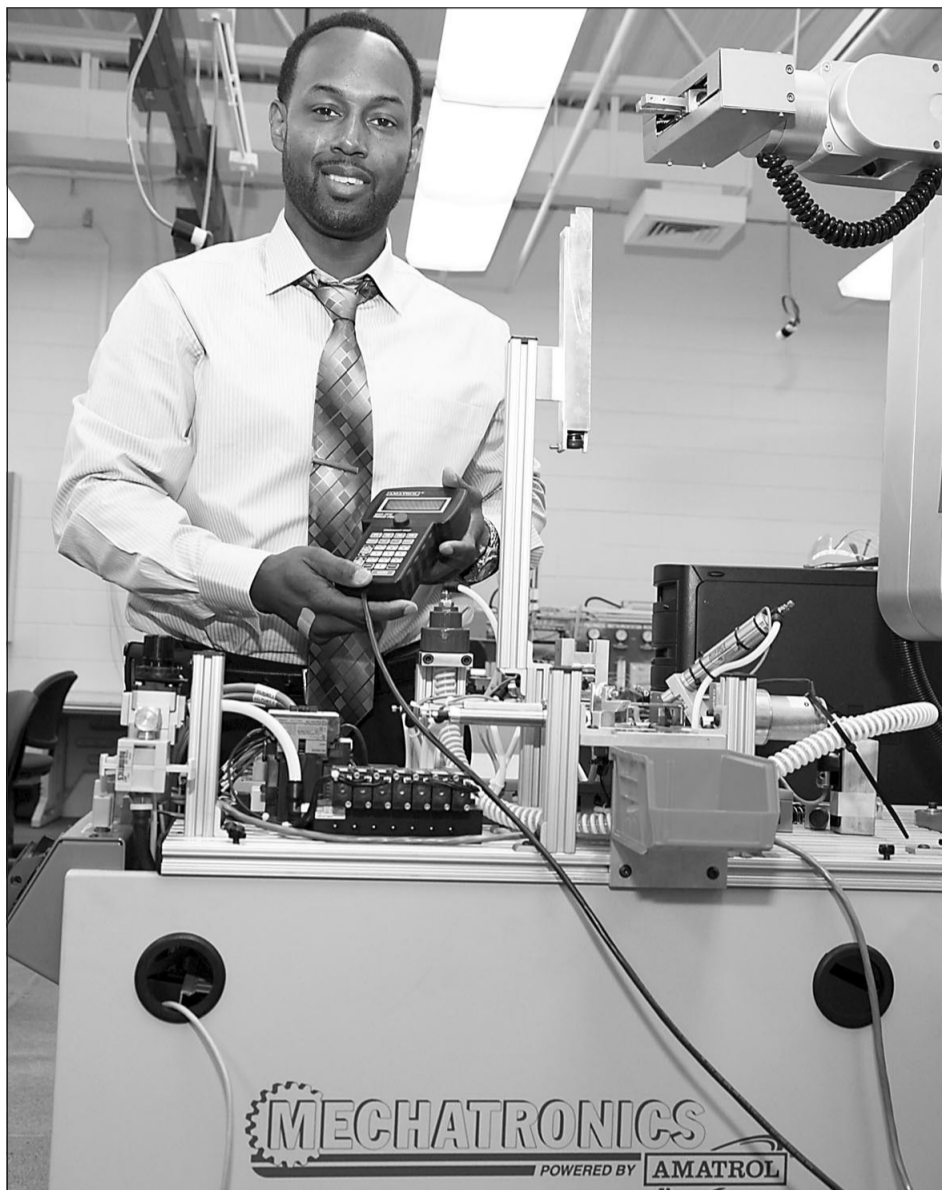
"She went out and found Macomb's program for me," relates Alston. "She said, mechatronics, Mike, that's for you." And Maquita was right.

Mechatronics integrates mechanics, electronics and computer technologies to accommodate the development and design of technologically advanced products and processes. Mechatronics engineers and technicians can be found in automotive and medical manufacturing, transportation, construction, vehicle systems design, communications, heating and cooling, food production, renewable energy and the film industry, to name a few. Macomb Community College introduced its mechatronics program in 2009 in response to the changing face of manufacturing.

"The need for companies to become lean organizations has accelerated the trend to expand employee skills. The manufacturing workplaces of the future will be multi-skilled, with qualified job candidates needing additional education and training in mechatronics to get in the door," says Peter Klein, Macomb's associate dean of engineering technology. "Michael's resume contained the key words *mechatronics* and *robotics*. It is my opinion that these two key words brought his resume to the front of the line. His history and education in mechatronics, as well as his positive personality, enabled him to win over other job candidates."

One of the first to graduate from Macomb's mechatronics program in 2010, Alston, who already held an electronics degree from Schoolcraft College, simultaneously earned a bachelor's degree in mechatronics from Sienna Heights University while attending Macomb.

"When I was laid off from BASF, I vowed I would never let it happen to me again," says Alston, who lived in Can-



Michael Alston, one of the first graduates of Macomb Community College's mechatronics program, returned to the college in April to speak at an advisory board meeting about the program that he credits for his success as a project engineer with Volkswagen. Here he revisits one of the labs he spent much time in as a student at Macomb.

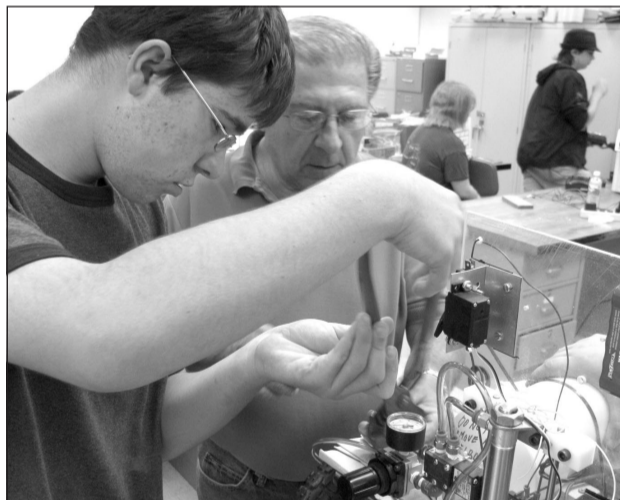
ton when he enrolled at Macomb in 2009. "I aggressively attacked the program and treated it like a 40- to 50-hour a week job. I used all the resources the college had to offer."

Shortly after he graduated from Macomb and Sienna Heights, Alston accepted a job in Huntsville, Ala., with an aerospace firm. When a job as a paint process engineer

opened up with Volkswagen, however, he welcomed the opportunity to work on the launch of the company's newest Passat (think the Darth Vader ad during this year's Superbowl), even though it meant relocating his family to Chattanooga, Tenn. Alston characterizes his work as that of a "troubleshooter," and his success at it has subsequently earned him a secondary role as a trainer at the Volkswagen Academy.

But, if it wasn't for Maquita, Macomb and mechatronics, he maintains, it's a Rocky story that never would have happened.

"I was taught on equipment that is actually used in the field, by faculty who want you to learn, who want you to succeed," offers Al-



Students work with Macomb Community College faculty in the Robotics Career Academy as they learn to design, build and debug robots.

ton. "Macomb's program was really challenging, but really rewarding. It prepared me for what I am doing now."

Hot jobs and how to get them

When it comes to demand, not all jobs are created equal. Certain fields are expected to continue to grow because of a variety of factors, and Macomb Community College has programs that provide a point of entry into several of them. Here's a look some of these programs and the jobs* they prepare students for, with near-term growth expectations in parentheses.

Information Technology, with transfer options to Walsh College and Oakland and Eastern Michigan uni-

versities, preparing for jobs as a computer software engineer (25 percent growth), computer software engineer-system software (24 percent growth) or computer systems analyst (16 percent growth).

Sustainable, Renewable and Alternative Energy, with transfer options to Lawrence Technological and Wayne State universities, preparing for jobs as a civil engineer (11 percent growth) or a solar energy technician (8 percent growth).

Automated Systems - Mechatronics, with transfer options to Lawrence Technological and Wayne State universities, preparing for jobs as a mechatronics engineer (growth statistics in this

emerging field are not yet available but are expected to be significant).

Finance, with transfer options to Walsh College, and Wayne State, Oakland and Ferris State universities, preparing for jobs as an accountant (12 percent growth), or personal financial planner (30 percent growth).

Nursing, with transfer options to University Detroit Mercy, University of Michigan - Flint and Davenport, Wayne State, Oakland, Eastern Michigan, Grand Valley State, Western Michigan and Saginaw Valley State universities, preparing for jobs as a registered nurse or mental health nurse (19 percent growth for both).

Nuclear Medicine, with transfer options to Oakland and Ferris State universities, preparing for jobs as a nuclear medicine technologist (15 percent growth) or program director (not available but expected to keep pace with the health care needs of an aging population).

*Some jobs require a bachelor's degree.

Are you game? Take a turn on a career at a summer academy

High school students who sign up to attend one of Macomb Community College's weeklong summer career academies can forget the pen and the notebook. Instead, participants can expect to crawl, climb and charge a hose in the fire service academy; chop, grate and sauté in the culinary arts academy; and design, build and debug robots in the robotics academy.

College faculty and staff who plan the academies purposefully use a hands-on approach, explains Ed Stanton, director of secondary outreach at Macomb.

"The career academies are popular with both students and parents, because they give students real insight into whether their interest in a particular field matches the reality of the career," Stanton says. "We have seen students in the past who have cemented their desire to enter a career based on the academy, and, equally as valuable, others who have discovered that something may not have been for them."

During each weeklong academy, students are engaged in a fun and interactive learning environment. Each academy not only introduces students to the responsibilities and skills needed for the respective profession, but also provides a view to what day-to-day life on the job is like.

Macomb's career academy program has grown from two offerings more than 10 years ago to nine opportunities for career exploration this year.

"We strive to be timely

Summer academy

The academies along with their dates, times and costs are:

Law Enforcement
June 20 - June 24, 8 a.m. - 4 p.m. \$165. Participants must be at least 16 years old.

Culinary/Pastry Arts
June 20, 9 a.m. - 2 p.m. and June 21 - June 24, 9 a.m. - 3 p.m. \$165

Fire Service
June 20 - June 24, 9 a.m. - 4 p.m. \$165. Participants must be at least 16 years old.

I.T. Gaming
June 20 - June 23, 9 a.m. - 3 p.m. \$165. Participants must be at least 15 years old.

Media and Communications Arts
June 20 - June 23, 9 a.m. - 3 p.m. and June 24 9 a.m. - noon \$165.

Robotics
June 20 - June 24, 9 a.m. - 3 p.m. \$165.

Veterinary Technician
June 20 - June 24, 9 a.m. - 2 p.m. \$165.

Veterinary Technician II - Exotic Animals
July 12 - July 14, 9 a.m. - 2 p.m. \$100
Participants must have completed the Veterinary Technician Academy.

Biotechnology
July 5 - July 8, 8:30 a.m. - 12:30 p.m. \$130

Environmental Science - Evaluating Water Quality
July 11 - July 13 8 a.m. - 4 p.m. \$130

with career trends and with the courses and programs the college is offering," says Stanton. "For example, we've added I.T. gaming to this year's academies. This academy is not about playing games, but learning how to create games."

Also new this year is the environmental science - evaluating water quality academy, reflecting the growing number of career opportunities in this field.

Students interested in enrolling in an academy must be at least 14 years old, unless otherwise indicated. For more detailed information regarding the career academies, contact Stanton at 586.445.7640, email stantone@macomb.edu, or go online to www.macomb.edu and type in career academies in the search box.

The next CTE page will feature the MISD

MAKING THE
Connection

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For more information about CTE at the high school level contact the Macomb Intermediate School District. Contact Macomb Community College for college level programs. See contact information above.

MCTEAA
Macomb Career and Technical Education Administrators Association

TECH PREP
Cutting Edge to the Future
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It is the policy of the MISD that no person on the basis of race, creed, color, religion, national origin, age, sex, height, weight, marital status, or disability shall be discriminated against, excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination in any program or activity for which the MISD is responsible.