

Applications & Research Laboratory

PROFILE

2016-17

10920 Clarksville Pike • Ellicott City, MD 21042 • 410-313-6998 • arl.hcpss.org



The Applications and Research Laboratory (ARL) is the Career and Technology High School for Howard County Public Schools. The philosophy behind the Career Academy Program is to prepare students for careers, rather than jobs or employment. The program offers students an opportunity to meet and work with professionals from career fields while building an academic foundation and skill base to be college and career ready. Business partnerships and advisory boards are pivotal in the success of these programs. Students from all 12 high schools and Homewood are able to enroll in programs at the ARL. Students use industry standard software and technology through project-based instruction. Students have the opportunity to earn industry certifications and college credits while attending the ARL, preparing them for success in college and careers.

"Extraordinary Learning Through Experience"

The centralized academies at the ARL will engage students through real-world experiences and 21st century industry standards to be college and career ready, empowering lifelong learners and qualified professionals who will thrive in a dynamic world.

Administrator: Karl Schindler

Career Academies

- Aerospace Engineering: Project Lead the Way (PLTW) Academy
- Architectural Design Academy
- Automotive Technology Academy
- Biotechnology Academy
- Construction Technology
- CyberSecurity Networking Academy
- Early College Program-CyberSecurity
- Academy of Finance
- Academy of Health Professions
- Homeland Security and Emergency Management
- Hotel and Restaurant Management Academy
- Systems and Project Engineering Academy
- Visual Communications Academy

Note: The following are taught at each high school, instead of the ARL:

- Accounting Academy
- Career Research and Development
- Child Development Academy
- Computer Programming Academy
- Culinary Science Academy
- Engineering: Project Lead the Way,
- Marketing Academy
- Teacher Academy of Maryland

Special Programs

- SkillsUSA Chapter
- Nontraditional careers female student support group
- BrightMinds Foundation financial literacy program for 8th grade students.
- Discover for Synchronous Video, teaching financial literacy to 10th grade American Government students across the county.
- Intergenerational program through Health Professions and Cybersecurity Academies

Accomplishments

Academy of Finance

- Second place, State's Personal Finance Challenge held by the Maryland Council for Economic Education, 2015.
- Senior's competed in the state's Personal Finance Challenge held by the Maryland Council for Economic Education and competed with 23 other teams, placing 1st in the State, and 6 out of 23 states nationally.

Academy of Health Professions

- 4th and 5th place in the Maryland State SkillsUSA Championships in Baltimore. The students competed individually in Medical Terminology and as teams in the Health Knowledge Bowl, 2015.
- 30 students received the CNA certification and 9 students received the GNA (Geriatric Nursing Assistant) certification.

Architectural Design Academy

- Students presented their projects at American Institute of Architects Baltimore Design Excellence Awards.
- Students earned Autodesk AutoCAD user certifications.

Automotive Technology Academy

- Students hosted an inspection clinic for the community. Students inspected and consulted with vehicle owners on the brakes, engine, and electrical condition of their vehicle with repair and maintenance recommendations.
- Students participated in the Ford / AAA Auto Skills Competition. ([https:// autoskills.aaa.com/web/ aaa/ home](https://autoskills.aaa.com/web/aaa/home)) The team placed 5th in the state competition. Each student was awarded over \$10k in post-secondary scholarships.

Biotechnology Academy

- Students participated in the Howard County Brain Bee (Neurobiology).
- Several mentored students completed experiments likely to be included in peer-reviewed scientific journals.
- 2015 Howard County STEM Fair Sweepstakes winner for Mentored Projects.
- Biotechnology II students had their annotated cDNA sequences published in the internationally available GenBank database.

Construction Technology

- All students were certified through the National Center for Construction Education and Research in Core Skills and Carpentry. Students were also CPR certified through instruction by Academy of Health Professions staff and students.

CyberSecurity Networking Academy

- Seniors participated in the Air Force Association's CyberPatriot VII competition in Fall 2014. They progressed through 3 rounds of day-long challenges and were able to advance to the Platinum Tier State Round. Two of the five teams placed 8th and 9th out of over 40 teams in Maryland.

Early College Program – CyberSecurity

- Students ran their own business, JA Juice, where they sold portable charging banks to raise money for a scholarship for the Early College Program that will be awarded in 2017–18.

Homeland Security and Emergency Management

- Participated in a simulated Emergency Management Drill at the Howard County Office of Emergency Management.
- Senior students received Spatial Technology and Remote Sensing certifications.

Hotel and Restaurant Management

- SkillsUSA Culinary and Baking and Pastry regionals 1st competed in the SkillsUSA State Culinary and Restaurant Service competitions placed 1st in Restaurant Service.

Systems and Project Engineering

- Systems Management Solutions GT class, part of the Systems and Project Engineering Academy, successfully designed both an All Terrain Wheelchair and an Electrathon Racecar during the 2014-15 school year.

Visual Communications

- Designed Bright Minds Foundation Golf Promotional materials.
- First place SkillsUSA Regional Competition in Advertising Design.
- Third place SkillsUSA MD State Competition in Advertising Design.
- First and 2nd Place Place, SkillsUSA – State Competition 3D, Animation & Visualization 2nd Place, 3D Animation & Visualization.
- Students participated in the Howard County Library System's first Comic Con.