

Applications & Research Laboratory

PROFILE

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The Applications and Research Laboratory (ARL) is the career and technical center for Howard County Public School System high school students. The philosophy behind the Career Academy Program is to prepare students for careers and college. 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 high schools and Homewood School can 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 all postsecondary pathways and opportunities.

“Extraordinary Learning Through Experience”

ARL has a strong commitment to Strategic Call to Action and a student support team to ensure that each student succeeds.



Career Academies @ ARL

- Academy of Finance
- Academy of Health Professions
- Aerospace Engineering: Project Lead the Way (PLTW) Academy
- Agricultural Science Academy
- Animation & Interactive Media Academy
- Apprenticeship Maryland Academy
- Architectural Design Academy
- Automotive Technology Academy
- Biotechnology Academy
- Civil Engineering: Project Lead the Way (PLTW) Academy
- Construction
- CyberSecurity Networking Academy
- Graphic Design Academy
- Heating, Ventilation and Air Conditioning Academy

Special Programs

- Early College Program – Cyber Security
- FFA (Formerly--Future Farmers of America)

Administrator

Karl Schindler, Principal

Educational Partners

- Howard County General Hospital
- Hopkins Bayview
- Howard Community College
- Howard County Farm Bureau
- NSA
- Ford Motor Co.
- UMBC
- UMD School of Medicine
- Department of Agricultural
- Johns Hopkins

More about our staff

More than half of our teachers are National Board Certified.

Many ARL teachers have come from industry to teach invaluable skills.

Updated December 2023

Accomplishments

Academy of Finance

- 1st Place – Personal Finance Challenge, 2021, 2023
- 2nd Place – National Personal Finance Challenge, 2022
- NAF Certification with successful internship completion
- Competed regionally in Stock Market Game and Wharton School of Business competition.
- Millionaires Club

Academy of Health Professions

- Programs in Certified Nursing Assistant, Certified Clinical Medical Assistant, Physical Rehabilitation, and Emergency Technician.
- Students earn AHA Basic Life Support certification.
- 12th grade students' complete internships, clinical, or patient care experience.

Aerospace Engineering

- Engineering Essentials, Introduction to Engineering, Principles of Engineering, Digital Electronics, and Aerospace Engineering

Agricultural Sciences

- 21 students earned articulated credits to use at select colleges or universities – 2021, 2022
- Ten students participated in the 2022 National FFA Convention.
- Silver Award– National FFA employment Skills Contest.
- Senior student participated in the 2022 Maryland Farm Bureau NextGen Summit.

Animation and Interactive Media Academy

- Students can combine creative abilities with technical skills using industry standard techniques and software. Topics include 3D graphics, the artistic and creative aspects of game development, 3D animation, techniques used in 2D Animation, narrative and non-narrative storytelling, video production, and architectural simulation.
- Students gain the ability to pursue internships from organizations ranging from VR Gaming Companies to NSA. Students go on to a variety of liberal arts and fine arts colleges.

Architectural Design Academy

- Students create architecturally based portfolios for college submissions.
- Students can earn professional certification for industry-standard Autodesk AutoCAD and Revit.
- Participate in college design competitions.

Automotive Technology Academy

- Students earned multiple certifications of training through Ford Motor Co.

- Seniors earned Digital Multi-Meter certification through NC3 and Snap-On tools.
- Students earned ASE Automotive certifications in all content areas.
- Students earned certification in Automotive Service Safety through S/P2.
- Students earned certification in On the car- brake lathe technology through Pro-Cut.

Biotechnology Academy

- BACE certification (Biotechnician Assistant Certification Exam); academy success is above the national average.
- GT course; students successful on AP Biology and Chemistry exams
- Biotechnology II GT students receive scholarships, awards, and tuition for college.

Construction

- Students gain knowledge and skills to prepare them for various careers in construction including project management and project engineering.
- Students earn national certification through online text and national standards testing provided by the National Center for Construction Education Research (NCCER)

Cybersecurity Networking Academy

- Students earn Industry certifications in: CompTIA: IT Fundamentals, A+, Network Security, CySA, IT Op Specialist, Cyber Infrastructure, Cyber Analytics Professional, Cisco certified.

Graphic Design Academy

- 81% pass rate of PrintED Graphic Design Student Certification
- 43% submission rate of 2-D Art and Design AP Exam
- 100% pass rate of 2-D Art and Design AP Exam

Heating, Ventilation and Air Conditioning

- The HVAC Career Academy is an academically rigorous NCCER accredited program requiring the application of knowledge-based skills.
- Students have the opportunity to earn NCCER's Certification and acquire OSHA's-10 Safety Certification

Civil Engineering

- Develop engineering mindset, discipline, and problem-solving skills.
- Use civil and architectural principles to design site placement for residential and commercial buildings.
- College level competitions through the American Society of Civil Engineers. 2023 Kinetic Sculpture Race, 2024 Concrete Canoe.