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, 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 all postsecondary pathways and opportunities.

“Extraordinary Learning Through Experience”

The centralized career 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 J. Schindler, Principal, ARL
Accomplishments

**Academy of Finance**
- 2 students placed 1st in Fall 2019 and Spring 2020 for the State for national Investwrite competitions.
- Student placed 1st in region for FBLA financial literacy test.

**Academy of Health Professions**
- 30 students received certified nursing assistant (CNA) certification
- Juniors receive National Safety Council 1st aid certification
- Seniors receive HIPAA certification
- Students presented projects at American Institute of Architects Baltimore Design Excellence Awards.

**Agricultural Sciences**
- Student placed 2nd and won a gold award in the state FFA Employability Skills competition
- Students placed students placed 1st, 2nd and 6th FFA Livestock Evaluation Contest, Spring 2021
- Testified at Md. legislative sessions – 2019, 2020
- Several winners at the Regional FFA Public Speaking contest including Employability skills and Extemporaneous Speaking 2019 and 2020
- Students awarded National and State FFA Scholarships and community scholarships totaling over $10,000 in 2020

**Animation and Interactive Media Academy**
- Students placed 1st and 3rd Place, SkillsUSA – State Competition, Game Design.
- Students placed 2nd and in the Scholastic Arts and Writing Awards, called the Golden Key.
- First, second and third place, and Judge’s choice in the Howard County student film festival.
- Recognized as a strong VR education facility
- Instructors participated in writing the National Art and VR exams for Unity.
- Students earned the UMBC Linehan scholarship, 4- year Art degree program.

**Apprenticeship Maryland Academy**
- Electrical students earned OSHA 10, First Aid and CPR certifications and completed 1st year of registered apprenticeship at IEC
- Direct Support students earned DSP level 1 certification
- All students offered full-time employment

**Architectural Design Academy**
- Students presented projects at American Institute of Architects Baltimore Design Excellence Awards.
- Students earned Autodesk AutoCAD and Revit 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 earned ASE student certifications in Brakes, Steering and Suspension, Maintenance and Light Repair, Engine Performance and Electronic and Electrical Systems

**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.
- Biotechnology II students had their annotated cDNA sequences published in the internationally available GenBank database.
- Students can sit for Biotechnician Assistant Certification Exam

**Construction Technology**
- Students are certified through the National Center for Construction Education and Research in Core Skills and Carpentry. Students are 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, Fall 2021.

**Early College Program – CyberSecurity**
- Students participate in Passport to the Future, a conference where students are interviewed and attend job readiness workshops
- Students present cyber hot topics to panel of cyber experts
- Students participate in local and national cyber competitions
- Students participate in end-of-year Capture the Flag event sponsored by EnRich Minds
- Students run a business to apply soft skills to turn a profit and use tech skills to simplify supply chain management, communication tools, social media analytics and website design
- Students earn their Net+ and Sec+ certifications

**Graphic Design Academy**
- 75% Pass rate of PrintED Graphic Design Student Certification
- 30% submission rate of 2-D Art and Design AP test.
- 100% pass rate of 2-D Art and Design AP test.
- 2021 HoCo Film festival participant.

**Heating, Ventilation and Air Conditioning**
- The HVAC Career Academy is a National Center for Construction Education & Research accredited program.
- Students develop and practice entry level skills which are both knowledge based and practical in nature by accomplishing the work of the business.
- Students are able to earn NCCER Core, NCCER HVAC L1, Section 608 EPA, and OSHA 10 certifications.
- HVAC industry professionals from diverse backgrounds share their knowledge and experience on a variety of topics monthly with the HVAC Career Academy student.

**Systems and Project Engineering**
- Systems Management Solutions GT class consulted with the Cedar Lane School to design and develop adaptive PE equipment and games for students with disabilities.

**Aerospace Engineering**
- The Aerospace Academy: Project Lead the Way (PLTW) provides students with the opportunity to apply the engineering design process through coursework and hands-on learning.