

2018-20 Executive Progress Report

Commonwealth of Virginia
Secretary of Education

Institute for Advanced Learning and Research

At A Glance

The Institute for Advanced Learning and Research will serve as a regional catalyst for economic transformation through applied research, advanced learning, and workforce and economic development.

Staffing 42 Salaried Employees, 0 Contracted Employees, 0 Authorized, and 3 Wage Employees.

Financials Budget FY 2019, \$6.12 million, 100.00% from the General Fund.

Trends Legend ↑ Increase, ↓ Decrease, → Steady

Key Perf Areas → STEM participants
↑ Projects with known deliverables
Productivity ↑ Ratio of in-kind services
Legend ↑ Improving, ↓ Worsening, → Maintaining

For more information on administrative key, and productivity measures, go to www.vaperforms.virginia.gov

Background and History

Agency Background Statement

Advanced Learning Division

The Advanced Learning Department continues to support IALR's mission to drive economic transformation in southern Virginia by providing meaningful talent development opportunities to people of all ages. In FY18, over 20,140 participants benefitted from a STEM activity facilitated by the Advanced Learning Department. The sixth annual STEM-H Summit was a success with 360 students, educators, and business representatives in attendance. Leland Melvin, former NASA astronaut, inspired attendees to reach for the stars.

The Inspiration Lab visited 75 sites serving more than 7,300 participants. This outreach initiative truly delivers STEM experiences throughout our region, anytime and anywhere, exposing students and adults to 3D printing, material science and engineering concepts.

IALR again received a one-year grant award of \$207,957, with eligibility for renewal for up to two years pending the availability of federal funds, from Virginia's Office on Volunteerism and Community Service (OVCS) for the Dan River Year AmeriCorps program. This is IALR's third year of serving as an intermediary, placing AmeriCorps members at multiple host sites across southern Virginia to address literacy and build STEM capacity. Thirty-one AmeriCorps members provided 21,317 hours of service and recruited over 300 volunteers to provide STEM activities to over 5,800 participants. Twenty-four members completed their terms of service, earning over \$53,250 in Segal Education Award scholarships. The state AmeriCorps grant funds were matched with a grant from the Danville Regional Foundation.

In FY18 IALR coordinated the fourth annual Southern Virginia Career Choice Youth Expo, a two-day event providing over 70 hands-on career exploration activities led by 55 employers. The event has been replicated in Richmond and southwest Virginia as a best practice in career exploration. In 2017, over 3,800 middle and high school students from the cities of Danville and Martinsville and the counties of Halifax, Henry, Patrick, Pittsylvania, and Caswell (NC) attended the Expo at the Olde Dominion Agricultural Center. Over 390 employer representatives, school administrators, and volunteers supported the event.

Applied Research Division

IALR's team of PhD scientists and technicians focus on applied research that has the potential to solve problems experienced by regional growers, entrepreneurs, and existing industries. Research activities in FY2018 include:

- IALR work with regional industry continues to expand and has elevated our role in economic develop as our well-equipped labs and skillsets are attractive to many of the prospects looking to locate in the region. This is especially true of our advanced material and analytical chemistry labs but also includes Virginia's important agriculture industry.
- IALR's work with beneficial bacteria continues to expand. Our beneficial bacteria library or "toolbox" continue to grow in number and we believe we have the largest plant bacteria library on the globe. The growing toolbox has increased collaboration with both university and industry partners. The applied research board committee has approved the launching of an Applied Biostimulant Research Center where IALR plans to lead global research of plant bacteria. This bacteria offer a variety of properties that include reduction of fertilizers and insecticides with a natural, non-GMO alternative.
- IALR received a new *Tobacco Region Revitalization Commission (TRRC)* grant to expand our bacteria work by adding a position to develop tools to fight fungal plant pathogens. Once again we will work with local farmers throughout our service region.
- Work continues in our second year of our Precision Agriculture program. This program utilizes tools like SMART Tables and agricultural drones to explore new ways to meet the food requirement of the globe with less use of traditional tools like pesticides and fertilizers. The SMART Table system is unique across the country and sets IALR apart from major agricultural schools. IALR added a new "coder" position to this program who has developed software that quantifies plant growth and motion from the images taken of the test plants.
- Work on the *Tobacco Region Revitalization Commission (TRRC) precision agriculture* drone grant moved into full swing. IALR's project manager and UAV pilot flew over 20 farms in a six-county region exceeding 100 flights in the first growing season. IALR invested in a second high-end commercial drone to support the program. The goal is to assist farmers with current "field truthing" as well as expose growers to new technologies and grower feedback has been extremely positive. Our work has included flights over vineyards to support Virginia's wine industry as well as flight's over one hops grower. .
- Work continues on a *Tobacco Region Revitalization Commission (TRRC)* grant to help improve grape health and growth for the growing viticulture industry. The overall goal of the grant is too increase acreage and ultimately ton-age to support Virginia robust wine industry. IALR has planted test vines on five vineyards throughout the region. More info at trcgrape.com.
- IALR was hired as program manager of the TRRC grape program mentioned above effective July 1, 2018. IALR will be working with all growers throughout the region who wish to expand their vineyard acreage. In addition to creation of additional acreage, our goal is to increase visibility of southern growers and create a pipeline for growers to wineries throughout the Commonwealth.
- IALR has increased collaborations with Commonwealth universities. While IALR has a long term relationship with Virginia Tech, project collaborations are at an all-time high. IALR has had many collaborations in the agriculture area but it is interesting than many work activities now include mechanical engineering students as our work in the precision agriculture field continues to grow. Five mechanical engineering students spent their years-long senior design project updating our SMART Table systems that capture and quantify plant growth and motion. Additional collaborations include University of Virginia, George Mason and Virginia Commonwealth University.
- The research division has made a commitment to add several conferences to support The Conference Center division. We hosted an Industrial Hemp Summit that sold out at 158 attendees. This was a B2B event that included business people, bankers, venture capitalist, researchers and growers. Attendees represented 10 states, District of Columbia, Mexico, Canada and China. The event was so successful it has become an annual event. The current year's event will be capped at 250 people and another sell out is expected. ()

Economic Development Division

Economic Development at IALR is done in conjunction with the Southern Virginia Regional Alliance (SVRA) and local economic development agencies across the footprint. IALR collaborates to build a strong economy for the citizens in the Southern Virginia area by assisting with recruitment of new businesses who will create jobs and invest capital in the region, as well as by supporting the vitality of existing businesses to enable increased productivity, jobs and facility expansions. Marketing and research assistance are provided in support of local economic development projects. In addition to face-to-face tours, drones have been utilized to showcase large buildings and land sites, enabling localities to provide virtual marketing of sites to prospects. Marketing collaboratively provides economies of scale while encouraging the sharing of vital resources across a region or marketing jointly utilized assets and it increases the opportunity for success by individual or joint locality initiatives.

In addition IALR office space is provided for local, regional, and state prospect meetings, providing an opportunity to learn more about IALR's applied research, advanced learning, and workforce development programs that could benefit their company. Companies are also provided launch space adjacent to research and workforce programs while they complete their new facility buildouts in the region, avoiding startup delays. As a result of these combined efforts, there has been a 75% increase in prospect leads and within the past fiscal year, the Southern Virginia localities together have successfully attracted two new companies and supported four expansion projects for a total of 26.77 million in capital investment.

The Conference Center

IALR's Conference Services and capabilities plays an instrumental role in IALR's mission to drive economic transformation to Southern Virginia. In FY 2018, Conference Services supported 486 programs and events with a total of 21,678 guests. Many of IALR's guests for conferences travel from other localities and states positively impacting the local and regional economy as they shop in stores, eat in restaurants, and require lodging.

Collaborative Partnerships

Gene Haas Center for Integrated Machining: The Gene Haas Center for Integrated Machining is a progressive precision machining training model that answers industry expressed needs for a highly skilled 21st century workforce. The program is a partnership between IALR and Danville Community College. A key component of this project is a revolutionary concept that incorporates workplace experiential learning in an educational setting by enabling students to train in a full-scale manufacturing work flow cell to support a realistic, fully-integrated learning experience. This first-of-its-kind model of immersive workforce training is derived from a partnership between business, industry, and academia. The program aims to integrate a “real-world” lean flow-cell manufacturing environment with such skills as tool management, advanced testing and measurement, electrical discharge machining, computer numerically controlled grinding, computer numerically controlled milling, computer numerically controlled turning, and business processes.

Dan River Region Collaborative: The Institute for Advanced Learning and Research provides project management services and serves as the fiscal agent for the Dan River Region Collaborative. The Dan River Region Collaborative was founded in 2008 to address workforce development in the Dan River Region of Virginia. Utilizing a sector strategy approach, the Collaborative promotes regional partnerships of employers, educators, workforce developers and other stakeholders to address the skills needs of regional employers. Within the industry partnerships, the Collaborative's efforts focus on capacity building, systems change, and policy advocacy. The DRRC worked with Chmura Economics and Analytics to provide the region's first Living Wage study and host an Apprenticeship meeting during National Apprenticeship week.

In FY18, DRRC continued to drive the region's Work Ready Community effort. Five localities in southern Virginia have been certified as work ready. In addition, the effort has expanded to all 15 localities in Region 3 of GO Virginia. Through DRRC's efforts, over 6,850 individuals have earned a National Career Readiness Certificate, a third-party credential recognized by over 440 businesses in southern Virginia.

DRRC and IALR offered summer externships to 24 teachers through the EXCITE program. Twelve industries hosted the teachers, providing work-based learning experiences that could be incorporated into lesson plans to bring relevancy to subject matter material presented in the classroom. The program strengthens business engagement with the region's K-12 systems.

DRRC and IALR continue to provide project management services to the region's Community Health Worker initiative. Through this program, we have certified six of the Commonwealth's first Community Health Workers. The program is increasing the number of citizens connected to primary care and is reducing repeat visits to the emergency room for non-acute healthcare issues.

Southern Piedmont Technology Council (SPTC): IALR also provides project management services for the Southern Piedmont Technology Council (SPTC). IALR and SPTC coordinate and offer technology classes onsite and throughout the region to meet the demands of the current and future workforce.

Southern Virginia Regional Alliance (SVRA): The Institute continues its commitment to a strategic focus on economic development through its partnership with and leadership of the Southern Virginia Regional Alliance (SVRA) to promote Southern Virginia both nationally and globally.

Through a team effort, IALR is focused on serving Southern Virginia. IALR staff are strategic in all efforts as we strive daily to be recognized as a valued regional leader by successfully leveraging resources and partnerships.

Major Products and Services

Services provided by the agency include:

- Workforce and Career development including Capstone Precision Machining
- Internships for high school and college students as well as educators
- Scientific research and development
- Researchers' expertise and lab equipment available to small business owners through consultative services and contract research
- Program management services (commercialization, applied research & educational)
- STEM Inspirational Lab travels to schools and organizations
- Advanced Learning loaner equipment program for educators
- Summer Camps to increase students' exposure to STEM
- Economic development support provided by competent experienced personnel
- Programs that focus on the adult learner
- Distant learning classrooms
- Conference Center space and services
- Dan River Year AmeriCorps Program
- Regional STEM and Career Development

Anticipated changes to services include:

- Funding limitations will reduce the number of research and advanced learning programs the agency is able to provide and significantly restrict the agency's ability to partner with other institutions to develop and provide new research related initiatives as well as educational and workforce development programs

- Lack of additional space will restrict research and development projects

Customers

Customer Summary

IALR's Conference Services and capabilities is an instrumental part of IALR's mission to drive economic development to Southern Virginia. In FY 2017, Conference Services supported 429 events and hosted 23,348 guests. Many of IALR's guests for special events are traveling from other localities and states positively impacting the local and regional economy as they shop in stores, eat at restaurants, and require lodging.

New event during the year include:

Machining Symposium first of its type, brought industry experts representing a wide range of manufacturing disciplines, primarily the precision machining with 32 companies and 90 participants for the (2) two day event.

New Opportunity Recruiting event for new businesses to the region.

New Health and Nutrition Program for school nutrition directors and staff

Through a team effort, IALR is focused on serving Southern Virginia. IALR staff are strategic in all efforts as we strive daily to be recognized as a valued regional leader by successfully leveraging resources and partnerships.

Customer Summary

The Institute for Advanced Learning & Research (IALR) develops intergenerational educational programs that provide opportunities for a continuum of learning. The development of lifelong learning programs for older adults is especially important to address the "Age Wave" demographic shift identified in the Council on Aging 2011 annual report. The report stated "the number of Virginians over the age of sixty will increase from 1.4 million (17.8% of population) in 2010 to 2.3 million (23.9%) in 2030."

Science, technology, engineering and mathematics (STEM) interest is increasing regionally as well as on a state and national level. The IALR has upgraded technology in the STEM Mobile Lab and is has expanded to the new Inspiration Lab enabling a greater number of students in the Lab at any given time. The STEM Mobile Learning Lab allows the agency to reach the service region and beyond, while providing learning opportunities for individuals of all ages.

IALR's efforts with applied research make it necessary for the organization to collaborate with basic research organizations, both public and private. IALR has definitive working applied research relationships with three of the colleges/institutes within Virginia Tech, and a number of private enterprises. IALR is working toward similar relationships with departments within the University of Virginia, Virginia State University, George Mason University and other research and commercial organizations.

IALR will continue to intensify outreach to business customers by providing creative and engaging opportunities. IALR's contribution to economic revitalization in the region will remain focused on partnerships, collaborative projects, and intern opportunities with area businesses, colleges, and school systems. The agency is also completing an assessment of area businesses to identify opportunities for providing technical and research resources that may otherwise not be available to smaller companies. Through its economic development activities, IALR will work to recruit prospective industries to the region.

The challenge confronting IALR is encompassing the diversity of customers within our expansive footprint.

Customer Table

Predefined Group	User Defined Group	Number Served Annually	Potential Number of Annual Customers	Projected Customer Trend
State Agency(s),	AmeriCorp Members	32	27	Stable
Student	STEM-Related Events	14,864	16,000	Increase
Consumer	External Conferences	21,348	25,000	Increase

Finance and Performance Management

Finance

Financial Summary

Fund Sources

Fund Code	Fund Name	FY 2019	FY 2020
0100	General Fund	\$6,115,247	\$6,115,247

Revenue Summary

For the fiscal year that concluded June 30, 2017 (FY 2017) the Institute for Advanced Learning and Research's (IALR) primary source of

funding was the State appropriation of \$6,115,383. Additional revenues during this fiscal year include allocations from the State Maintenance Reserve Fund and the Higher Education Equipment Trust Fund, rental income, fees for conferencing services, grants from private foundations.

Although a hybrid entity, IALR's goal is to make a difference in the lives of those residing within the region. The challenge, as well as the inhibitor, is obtaining adequate funding to allow IALR to move forward with new and innovative programs and services such as Capstone, the Academy of Engineering and Technology (AET), workforce development programs and the mobile Inspiration Lab.

IALR is an innovative organization working to provide economic benefit to the region. The agency's strategic plan emphasizes the creation, development and commercialization of technology critical to Southern Virginia's economic prosperity. The agency is aligning its research programs with the strategic economic plans of the Southern Virginia Region and of the Commonwealth. To reach sustainability in all areas, it is critical that IALR receive an increase in appropriated funding. Even a modest increase to the base budget would make a difference.

Factors that are likely to affect the agency's budget include state revenues, further economic downturn, lack of capital for companies to grow, and ability to collaborate with other agencies on grant applications.

Performance

Performance Highlights

The Institute for Advanced Learning & Research (IALR) is an innovative organization working toward providing economic and social benefit to our community. We are working to align IALR research programs with the strategic economic plans of our region and of the Commonwealth.

The Institute continues its commitment to a strategic focus on economic development through its partnership with and leadership of the Southern Virginia Regional Alliance (SVRA) to promote Southern Virginia both nationally and globally. IALR has worked with local economic developers to identify and support projects that local economic developers and prospects have developed into positive announcements with outcomes that have impacted the tax base with three new company announcements and five existing company expansions leading to 128 jobs and over \$52.195 million in capital investment in the region. There has also been a significant increase in prospect activity and marketing of the region at regional, state and international levels with enhanced partnerships with the Virginia Economic Development Partnership.

The agency's conference center is an essential element for IALR's mission to drive economic development in Southern Virginia. Our Danville location highlights the surrounding area, accessibility to major expressways while offering exceptional conferencing services. IALR's conferencing services is a technologically advanced setting having options that will satisfy any event needs from executive and professional training to workshops, trade shows, receptions and single and/or multiple day conferences.

Selected Measures

Measure ID	Measure	Alternative Name	Estimated Trend
M885AG12004	Number of science, technology, engineering and mathematics (STEM) participants	STEM participants	Maintaining
885.0005	Number of known deliverables for active economic development, business development and applied research projects	Projects with known deliverables	Improving
885.0004	Ratio of dollar value of "in-kind" services provided to the region in the advancement of the Institute for Advanced Learning and Research's mission of economic transformation (numerator), over State Appropriations (denominator).	Ratio of in-kind services	Improving

Key Risk Factors

Risk factors that are having a significant impact on the agency and will continue to do so in the near future include:

RESEARCH: Research funding via contract research grants and other sources is becoming more competitive, which impacts IALR's ability to expand the program. Additionally, during the past year IALR engaged in an overall reorganization of the agency to better align the department with regional needs. This led to unavoidable delays in hiring a polymer engineer and a natural products chemist which slowed the progress in some research initiatives such as bio-based film development, plant-derived molecule development as well as the spinning-tube-in-tube (STT) program development.

ADVANCED LEARNING: The 6 county, 2 city region that IALR serves is experiencing high unemployment and a high poverty level, which together have contributed to a declining population. With a declining population comes a reduction in the potential participant target for advanced learning programs. Increased options for online learning reduce the need/demand for face-to-face programming. A risk factor of lesser degree is the fact that IALR is not located on a bus line which hinders growth in community participation.

ECONOMIC DEVELOPMENT: The areas of training and workforce development are impacted by the national economy and global trade. More locally, threats to the region through environmental issues (coal ash spill, for example) are impacting efforts to recruit new businesses to the region. While not at risk at this moment, the success of regional economic development efforts depends heavily on continued support (both financial and organizational) on the part of local partner organizations as well as regional and state funding partners (e.g. Tobacco Indemnification Commission, Mid-Atlantic Broadband).

ADMINISTRATIVE AREAS: Like many agencies, IALR struggles with containment of benefit costs, funding for positions and training/employee

development. Difficulty in identifying and attracting competent staff skilled in science, technology, engineering and mathematics (STEM) poses a risk to IALR. IALR is continually assessing demands placed on aging technology equipment due to high-usage and is concerned with the possibility of critical equipment failures. IT upgrades are contingent upon funding and prioritized based on the degree of funding received by the agency.

FACILITIES: The agency's main campus building and building systems are beginning to age, having been completed in 2004. IALR's current buildings are nearing capacity which places limitations on expansion of research and educational endeavors.

Agency Statistics

Statistics Summary

A highly skilled workforce is critical to any area's economic development. IALR is committed to partnering with businesses, colleges, and school systems to provide encouragement and opportunities that foster education, especially in science, technology, engineering and mathematics (STEM) fields. IALR also supports the Certified Work Ready Community program.

IALR has a long term commitment to serve as a catalyst for the region and holds a strong belief that transformation occurs through collaborative projects and partnerships. The agency formed 8 new partnerships during fiscal year 2014 (FY2014) and continued collaborating with existing partnerships.

One new commercialized business was launched during FY2014. Dan River Plants is still in their start-up phase but the business model remains strong. The agency anticipates that this new business will see added employees and increased revenue in FY2015.

Scientists employed at IALR eagerly share their knowledge and expertise when provided the opportunity. Research presentations were provided to area businesses and organizations as well as at national and international conferences.

Statistics Table

Description	Value
Number Research & Development consultations & evaluations provided to industries	10
Number Research & Development revenue sources from non-State sources	10
Number of new partnerships formed	7
Number of economic development projects worked	59
Number of economic development site consultants & industry visits	48
Number of new businesses launched	3

Management Discussion

General Information About Ongoing Status of Agency

The integrated mission of the Institute for Advanced Learning and Research (IALR) includes research, advanced learning and economic development. These components build upon existing regional strengths. The IALR is working on ways in which talent and resources can be used especially through collaborative efforts. These efforts are of special importance as the IALR works toward providing local manufacturers with opportunities that will enable them to compete in a global marketplace.

The agency will utilize the unique resources in our business and research community to optimize its polymer/chemistry and agricultural research venues. IALR's research efforts are geared toward creating opportunities for business and workforce development in these areas. During fiscal year 2014 IALR explored bio-composites (blending our assets in agriculture and polymers/chemistry) and agriculture research that included work with high value horticulture in conjunction with Virginia Tech, one of the agency's founding institutions. Research work continues on energy crops including Miscanthus and Arundo Donax.

Research work is also being performed with plant proteins as a source for polymers and enhanced crop performance to provide natural molecules that can be an alternative for those derived from petroleum. IALR's research labs have expanded from those dedicated to plant science to include those focused on polymer characterization and processing. During fiscal year 2014 IALR labs supported existing grants, internal research and local industry support.

Moving forward, IALR research endeavors will focus on application and commercialization of the products, technologies and processes developed by our scientists and technicians. While serving existing industry is an important aspect of the applied research mission, significant investment is being made in new product development that builds on technology and knowledge created within Virginia's basic research institutions, universities, NASA Langley, and Jefferson Lab to name a few. IALR's applied research organization expects to supplement the state budget allocation via commercial contract research awards, Federal or other institutional grants and business fee-for-service activities.

Advanced learning, where education meets experience, is integrated into every IALR research project through activities such as teacher internships as well as high school and college student internships, Governor's School student projects, researcher development and technical team development. The agency provides educational access via the Piedmont Governor's School, distance learning classrooms used by Virginia Tech and Averett University, and technical equipment made available to Danville Community College, Southern Virginia Higher Education Center and

Virginia Tech. New programs initiated during fiscal year 2014 include the Academy of Engineering & Technology in partnership with the New College Institute, a Research-to-Commercialization Learning Agreement with the New College Institute, Workforce Forward with the Southern Virginia Higher Education Center and New College Institute, and public school system focused Aerospace Education with the Virginia Space Grant Consortium, NASA and the National Institute for Aerospace. Additionally, the STEM (science, technology, engineering and mathematics) program, that takes the science mobile lab to classrooms in schools throughout the footprint, continues to be very successful.

IALR's economic development department is responsible for aligning the agency's efforts with the need for economic and community transformation. IALR is committed to assisting local and State economic developers in any way possible as evidenced by the agency's renewed focus through a partnership with the Southern Virginia Regional Alliance (SVRA). The agency's first commercial spin-off, Dan River Plants, was launched July 1, 2013. Nine employees were initially trained around technology developed at IALR. This start-up business is projected to create at least 30 jobs by 2016. Seed funding was provided by the Danville Regional Foundation and IALR's Foundation.

Every initiative undertaken by IALR is evaluated on whether the project/action/activity will have an economic impact in measurable meaningful ways.

Information Technology

Synopsis of current IT state:

Technology enhancements for IALR's instructional and meeting rooms continues to be refreshed using interactive touch screen technology integrated to standard display equipment of projector or computer, significantly improving the overall meeting, presentation and learning experience. During fiscal year 2014, IALR completed the upgrade to a real-time integrated Financial Accounting System, enabling greater efficiencies in the financial operations.

Other information technology solutions include beta testing cloud technologies using third party service providers for backup/recovery of data storage and intranet file sharing reducing the number of physical servers. IALR continues to research, test and evaluate technology solutions for multiple users' desktop and research lab data capture/retrieval.

The agency's most significant future technology needs include:

- Upgrading classroom and conference space wiring and audio/video equipment to digital format enabling webcasting, interactive distance learning classes and rebroadcasting of instruction using internet protocol
- Evaluation, implementation and training users on a software system that captures metrics in an efficient and productive manner

Workforce Development

A significant number of managers will reach retirement age within the near future at the Institute for Advanced Learning & Research (IALR). 72.7% of managers are age 50 or older; 36% of managers are within 5 years of retirement. The wide disparity with the age of the current workforce (69% age 40 or older; 19% ages 30 to 40, and 12% below 30 years of age) makes it challenging to adequately implement a succession plan. Management is identifying key and hard-to-fill positions, scanning existing workforce for potential, and establishing steps needed to provide professional development. Development, skill and competency needs are incorporated into the performance review process and continuing education is encouraged.

Recruiting/retaining challenges include finding experienced, qualified individuals in the region's available workforce, especially in the science, technology, engineering and mathematics (STEM) fields. Efforts are focused on enhancing knowledge and skills throughout the organization. Through partnerships with the CSIIP (Commonwealth STEM Industry Internship Program) and local organizations, IALR sponsored internship programs working with 8 high school and college level students in STEM-related training as a potential solution to recruitment issues.

The IALR researchers are engaged in a collaborative discussion with corporate businesses (locally, state-wide and nationally) to strengthen the research efforts through expanded research and contractual services, and with presentations at national and international conferences.

Due to IALR's unique structure the state does not appropriate positions for the agency. Because IALR operates with a small, highly skilled, specialized workforce, the primary challenge the agency is facing is providing pathways for upward mobility.

Physical Plant

The Institute for Advanced Learning and Research's (IALR) Main campus building contains administrative offices, research areas and a conference center along with leased space to entities engaged in research related activities. IALR Main is ten years old and is beginning to need increased maintenance.

A modification and expansion of uninterruptible power supply to support disaster recovery and prevent loss of data is required to bring the IALR into full compliance with Virginia's Continuity of Operations Plan (COOP) and disaster recovery standards.

Long term growth needed for the IALR's applied research programs to attract additional high technology enterprises requires extra space to house funded research projects and research services.