

An Alliance that fosters increased African American student awareness of and entry into computing research careers by promoting collaboration between Historically Black Colleges & Universities and Research-1 Universities.

University Partners

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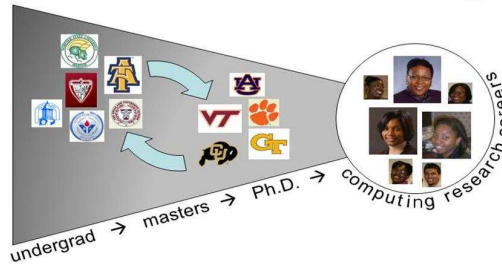


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University Affiliates

Mississippi Valley State Univ.
Virginia State University
Florida A&M University
Winston Salem State University
Hampton University
Dillard College
Sinte Gleska University
Univ. of Arkansas at Pine Bluff

Leveraging the dual-feeder model



Students at many colleges—particularly those with few or no graduate programs—do not get a broad sense of the nature of research or of the opportunities that graduate degrees can avail to them. Our *dual-feeder model* supports resource and information exchange among HBCUs and research institutions—toward expanding undergraduate computing opportunities at both HBCUs and research institutions.

Alliance research model: Research Pods

Students can gain great insight into the nature of research through hands-on experiences in research-intensive environments.

- Faculty and students in HBCU partnering institutions are paired with research faculty in the R1 partners for a **year-round experience in collaborative research**.
- To complement this research during the academic year, undergraduate and MS level students participate in a 3-credit distance **Research Methods course** that is then linked to their research projects.
- Students and faculty visits scheduled in the Spring semester.
- Undergrads in the pods are fully-funded for **summer residential research experiences** at the research institutions to encourage progress on the project.



Encouraging collaboration through researcher visits



Face-to-face interactions help foster collaborations among participating members. Numerous well-attended mini-conferences, including ones jointly with the STARS Alliance, have brought together our alliance team for idea exchange and project feedback. **Researcher visits** and **research pod kickoff events** featuring faculty at HBCU schools and faculty at research institutions have highlighted the unique strengths of each. The visits help faculty understand how to best identify students who are well-suited for graduate work at partner institutions. Numerous papers and funding proposals have been accepted and are in the pipeline because of these events, with many more planned.

Designing a repository for course outreach materials

Hands-on experiences can excite students and faculty alike about the possibilities of a research career. Our alliance is assembling a **repository of student and faculty video profiles, professional interest panels, and in-class activities**—available at the Alliance Web site at www.a4rc.org—that highlight diversity and research-related resources at our institutions. For example, the repository contains videos of experiences of students and faculty members from underrepresented populations, powerpoints of common book readings, and professional sessions on GRE and grad school application. Items from this repository can be adopted for use in classes at partner HBCUs—providing guidance that can point students toward a research career.



Scaling and sustaining through evaluation of impact

Our program includes an integrated evaluation plan—led by Jerlando Jackson at the University of Wisconsin—aimed at not only **improving implementation**, but also documenting and carefully describing results toward **identifying the most effective practices**. This careful documentation of processes and outcomes makes possible future adoption and adaptation by a broader audience.

Visit <http://www.a4rc.org> for more information about our alliance's activities.



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A4RC Highlights

...the only BPC Alliance specifically focused solely on the HBCU CS pipeline to the Ph.D.

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The Detailed **A4RC assessment documents** show that as a result of their A4RC involvement, HBCU participants have:

- Made positive gains with respect to understanding and doing numerous aspects of research;
- Gained experience with communicating research (posters, conference submissions, presentations);
- Developed a sense of inclusion within a community of researchers, feel more strongly committed to their computer science degrees, and take pride in their contributions to the pods;
- Have a much deeper understanding of research careers and how to pursue one (along a number of dimensions);
- Have significantly greater intention to pursue both master's and doctoral degrees (67% and 60% respectively).

Participating **HBCU faculty members report benefits** from their participation in A4RC:

- Gains regarding several aspects of their research;
- Positive recognition from their departments/schools
- They are actively engaged in producing deliverables
- They have routine conversations about research and plans to publish because they're part of a research group as opposed to trying to do it all independently

Student A4RC posters have been presented at:

- October 2007 Coleman conference on cognitive disabilities,
- 2008 SIGACCESS
- 2009 HBCU-UP
- 2008 & 2009 STARS
- 2009 SIGCSE
- 2009 Tapia
- Old Dominion University conference on IT Workforce
- 2009 IEEE Workshop on Computational Intelligence in Biometrics: Theory, Algorithms, and Applications
- 2009 Midwest Artificial Intelligence & Cognitive Science (MAICS) Conference
- 2009 Artificial Neural Networks in Engineering (ANNIE-09)

For each of the past two years, **A4RC has sponsored, coordinated and actively participated in one day of the STARS August leadership conference that is themed around research.**

A4RC has significantly grown from 4 HBCU's and 3 Research university partnerships in the original grant to 11 HBCU and 6 Research University partners and affiliates for the 2009-10 extension grant. The demonstration AARCS project has been integrated into the A4RC Alliance and complements the mission with support for African-American Ph.D. students and new African-American Ph.D.'s in the job market.

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