

**UNIVERSITY OF ALABAMA SYSTEM  
BOARD RULE 415  
BOARD SUBMITTAL CHECKLIST CRITERIA**

**BOARD SUBMITTAL CHECKLIST NO. 1 & 2  
CAPITAL PROJECT - STAGE I & II SUBMITTAL <sup>/1</sup>  
(General information, Architect Ranking, Project Scope and Project Budget) <sup>/8</sup>**

**CAMPUS:** The University of Alabama, Tuscaloosa, Alabama

**PROJECT NAME:** Tom Bevill Building Renovations

**MEETING DATE:** April 11-12, 2024

- ☒ 1. Board Submittal Checklist No. 1 and 2
- ☒ 2. Transmittal Letter to Chancellor from Campus President requesting project be placed on the agendas for the forthcoming Physical Properties Committee and Board of Trustees (or Executive Committee) Meetings
- ☒ 3. Proposed Board Resolution requesting approval of Stage I and II Submittal (General Information, Architect Ranking, Project Scope and Project Budget; authority to proceed with Owner/Architect contract negotiations) by the Board of Trustees
- ☒ 4. Executive Summary – Proposed Capital Project <sup>/2</sup>
- ☐ 5. Executive Summary – Architect, Engineer, Selection Process (include Interview Outline). <sup>/3, /4, /5</sup>
- ☒ 6. Supplemental Project Information Worksheet – Exhibit “K”, Board Rule 415
- ☒ 7. Campus letter requesting approval of the ranking of firms and authority to Submit to the Physical Properties Committee for approval – signed by Chair of the Physical Properties Committee and UA System Senior Vice Chancellor for Finance and Administration <sup>/6</sup>
- ☐ 8. Preliminary Business Plan (if applicable) <sup>/7</sup>
- ☒ 9. Campus map(s) showing project site

Prepared by: Jeremy Wood

Approved by:

*Tim Leppard*

*OK  
Chad  
3/16/24*

<sup>/1</sup> Reference Tab 3H – Board Rule 415 Instructional Guide

<sup>/2</sup> Reference Tab 3E – Board Rule 415 Instructional Guide

<sup>/3</sup> Reference Tab 3K – Board Rule 415 Instructional Guide

<sup>/4</sup> Reference Tab 3L – Board Rule 415 Instructional Guide

<sup>/5</sup> Reference Tab 3M – Board Rule 415 Instructional Guide

<sup>/6</sup> Reference Tab 3N – Board Rule 415 Instructional Guide

<sup>/7</sup> Reference Tab 3V – Board Rule 415 Instructional Guide

<sup>/8</sup> After Completion of negotiations on Owner/Architect Agreement, provide notification to Chair of Physical Properties Committee and Senior Vice Chancellor for Finance & Administration, Reference Tab 3-O-Board Rule 415, Instructional Guide



Office of the  
President

March 5, 2024

Chancellor Finis E. St. John IV  
The University of Alabama System  
500 University Boulevard East  
Tuscaloosa, Alabama 35401

Dear Chancellor St. John:

I am pleased to send to you for approval under Board Rule 415 the attached documents for a Stage I and a Stage II submittal for the Tom Bevill Building Renovations project.

The resolution requests authorization to establish the preliminary project scope, budget, and funding, as stipulated, and to enter into an Owner Designer Agreement with Williams Blackstock Architects of Birmingham, Alabama, as the principal design firm for this project.

The item has been thoroughly reviewed and has my endorsement. With your concurrence, I ask that it be added to the agenda for The Board of Trustees of The University of Alabama at their regular meeting on April 11-12, 2024.

Sincerely,

A handwritten signature in black ink, appearing to read "Stuart R. Bell". The signature is stylized with large, flowing loops.

Stuart R. Bell  
President

Enclosure



## **THE UNIVERSITY OF ALABAMA**

### **Approving the preliminary project scope and budget; granting authorization to execute an Owner/Architect Agreement for the Tom Bevill Building Renovations**

#### **RESOLUTION**

WHEREAS, in accordance with Board Rule 415, The University of Alabama (“University”) is requesting approval of a Stage I submittal for the Tom Bevill Building Renovations project (“Project”) to be located in the Tom Bevill Building (“Bevill”) at 201 7<sup>th</sup> Avenue, Tuscaloosa, Alabama; and

WHEREAS, the Project will renovate 14,293 square feet of existing space to include state of the art research equipment workspaces and faculty and staff offices for the Geography Department and the Alabama Materials Institute (“AMI”); and

WHEREAS, the renovation of space for the new Geography Suite will facilitate the Department’s relocation and consolidation with nearby department space currently in Bevill and Shelby Hall, enhance collaboration with the Geological Sciences department located in the Bevill Building, and will relieve Farrah Hall of approximately 18,000 GSF of space for future programming; and

WHEREAS, the new workspaces and equipment in this Project will allow the University to train more students in advanced materials development and to therefore increase their demand for future employment and post-graduate placement in the primary metals, automotive and aerospace manufacturing industries and better position the University of Alabama to secure more funding from industry partners in research and development projects that will involve students; and obtain more external grants and contracts that in turn will support use and upkeep of the instruments; and

WHEREAS, the renovation of space for the AMI office suite will facilitate faculty and staff growth, help consolidate the activities of the institutes research programs, which helps AMI meet federal security regulations in handling ITAR/ Controlled Unclassified Information (CUI) associated with awarded national defense and aerospace programs; and

WHEREAS, the project consists of three packages to maintain an efficient and cost-effective delivery and to execute the most disruptive work over the summer break as appropriate to minimize the impact to students, faculty, and staff, including Construction Package A – AMI Workspace Renovation, Construction Package B – AMI Office/Geography Suite Renovation, and Construction Package C – Select Demolition; and

WHEREAS, Williams Blackstock Architects, Birmingham, Alabama (“WBA”) has gained a substantial knowledge base of the unique requirements of the Project through their involvement in the recent Renovations for Materials Characterization Service and Support Project and over the course of development of this Project and are committed to deliver the Project by end of 2024; and

WHEREAS, due to WBA’s familiarity and knowledge of the existing facilities and the University’s standards, design principles, and procedures. which facilitate an efficient design process and ensure coordination with the existing infrastructure, systems, finishes and materials, the University is requesting approval to waive the Consultant Selection Process and to utilize WBA for this Project; and

WHEREAS, the University has negotiated a design fee based on 6.4% of the cost of construction, plus a 1.10 renovation factor representing a discount over the standard fee in the amount of \$39,947, which represents a positive financial benefit to the University; and

WHEREAS, the Project location and program have been reviewed and are consistent with the University Campus Master Plan, University Design Standards and the principles contained therein; and

WHEREAS, the Project will be funded by direct grants in the amount of \$2,252,028, and from the Office for Research and Economic Development Reserves in the amount of \$1,050,000; and the Office of Academic Affairs Reserves in the amount of \$4,300,000; and the College of Arts and Sciences Reserves in the amount of \$100,000; and University Central Reserves in the amount of \$1,067,972 and will address campus deferred maintenance (capital renewal) liabilities in the amount of approximately \$2,500,000; and

WHEREAS, the preliminary budget for the Project is as stipulated below:

**BUDGET:**

**PRELIMINARY**

Construction Package A – AMI Workspace Renovations	\$	2,370,620
Construction Package B – AMI Office/Geography Suite Renovations	\$	1,690,500
Construction Package C – Select Demolition	\$	100,000
Research Equipment	\$	2,252,028
Furniture, Fixtures, and Equipment	\$	844,000
Security/Access Control	\$	105,000
Telecommunication/Data	\$	65,000
Audio/Visual	\$	92,000
Contingency <sup>1</sup> (10%)	\$	416,112
UA Project Management Fee <sup>2</sup> (4.5%)	\$	307,317
Architect/Engineer Fee <sup>3</sup> (6.4%)	\$	292,943
Other <sup>4</sup>	\$	109,647
Escalation <sup>5</sup>	\$	124,833
<b>TOTAL PROJECT COST</b>	<b>\$</b>	<b>8,770,000</b>

<sup>1</sup>Contingency is based on 10% of the costs of Construction Packages.

<sup>2</sup>UA Project Management Fee is based on 4.5% of the costs Construction, Research Equipment, and Contingency.

<sup>3</sup>Architect/Engineer Fee is based on 6.4% of the cost of Construction, plus a 1.10 major renovation factor resulting in a savings in the amount of \$39,947.

<sup>4</sup>Other expenses include Construction Materials Testing, Inspections, Advertising, Printing, and other associated project costs, as applicable.

<sup>5</sup>Escalation on Package C is based on an anticipated 1% inflation, per month, through the scheduled bid date of May, 2024 as included in the Project Status.

NOW, THEREFORE, BE IT RESOLVED by The Board of Trustees of The University of Alabama that:

1. The Stage I submittal package for the Project is hereby approved.
2. The preliminary Project scope, budget, and funding, as stipulated above, are hereby approved.

ALSO, BE IT FURTHER RESOLVED THAT, Stuart R. Bell, President; Cheryl Mowdy, Interim Vice President for Finance and Operations; or those officers named in the most recent Board Resolution granting signature authority for the University be, and hereby are, authorized for and on behalf of the Board to execute an owner designer agreement with Williams Blackstock Architects of Birmingham, Alabama, for design services in accordance with Board Rule 415 for the Project.

**EXECUTIVE SUMMARY**  
**PROPOSED CAPITAL PROJECT**  
**BOARD OF TRUSTEES SUBMITTAL**

**MEETING DATE:** April 11-12, 2024

**CAMPUS:** The University of Alabama, Tuscaloosa, Alabama

**PROJECT NAME:** Tom Bevill Building Renovations

**PROJECT NUMBER:** 249-23-3398

**PROJECT LOCATION:** 201 7<sup>th</sup> Avenue, Tuscaloosa, Alabama

**ARCHITECT:** Williams Blackstock Architects

**THIS SUBMITTAL:**

- ☒ Stage I
- ☒ Stage II - CSPW
- ☐ Campus Master Plan Amendment
- ☐ Stage III
- ☐ Stage IV

**PREVIOUS APPROVALS:**

<b>PROJECT TYPE</b>	<b>SPACE CATEGORIES</b>	<b>PERCENTAGE</b>	<b>GSF</b>
<input type="checkbox"/> Building Construction	Classroom Facilities	~5%	723
<input type="checkbox"/> Building Addition	Laboratory Facilities	~ 22%	3,164
<input checked="" type="checkbox"/> Building Renovation	Office Facilities	~43%	6,188
<input checked="" type="checkbox"/> Equipment	Study Facilities		
	Special Use Facilities		
	General Use Facilities	~6%	816
	Central Service/ Support	~2%	272
	Circulation Area	~22%	3,130
	Building Service Area		
	Mechanical Area		
<b>TOTAL</b>		<b>100%</b>	<b>14,293</b>



<b>BUDGET</b>		<b>PRELIMINARY</b>
Construction Package A – AMI Workspace Renovations	\$	2,370,620
Construction Package B – AMI Office/ Geography Suite Renovations	\$	1,690,500
Construction Package C – Select Demolition	\$	100,000
Research Equipment	\$	2,252,028
Furniture, Fixtures and Equipment	\$	844,000
Security/Access Control	\$	105,000
Telecommunication/Data	\$	65,000
Audio/Visual	\$	92,000
Contingency <sup>1</sup> (10%)	\$	416,112
UA Project Management Fee <sup>2</sup> (4.5%)	\$	307,317
Architect/Engineer Fee <sup>3</sup> (6.4%)	\$	292,943
Other <sup>4</sup>	\$	109,647
Escalation <sup>5</sup>	\$	124,833
<b>TOTAL PROJECT COST</b>	<b>\$</b>	<b>8,770,000</b>
<b>Total Construction Cost per square foot \$478</b>		

<sup>1</sup>Contingency is based on 10% of the costs of Construction.

<sup>2</sup>UA Project Management Fee is based on 4.5% of the costs of Construction, Contingency, and Research Equipment.

<sup>3</sup>Architect/Engineer Fee is based on 6.4% of the costs of Construction, plus a 1.10 major renovation factor resulting in a savings in the amount of \$39,947.

<sup>4</sup>Other fees and expenses include Construction Materials Testing, Inspections, Advertising, Printing, and other associated project costs, as applicable.

<sup>5</sup>Escalation is based on an anticipated 1% inflation per month through the anticipated bid date of May 2024 as included in the Project Status.

#### **ESTIMATED ANNUAL OPERATING AND MAINTENANCE (O&M) COSTS:**

(Utilities, Housekeeping, Maintenance, Insurance, Other)

Total Estimated Annual O&M Costs: \$ **N/A\***

**FUNDING SOURCE:**

University Central Reserves	\$	1,067,972
Grants (Research Equipment)	\$	2,252,028
Office of Research and Economic Development	\$	1,050,000
Office of Academic Affairs Reserves	\$	4,300,000
College of Arts and Sciences Reserves	\$	100,000
<b>O&amp;M Costs:</b>	University Annual Operating Funds	\$ N/A

\*The Bevill Building is an existing Education and General facility and accordingly O&M is already funded. There is no incremental change to O&M resulting from this project.

**NEW EQUIPMENT REQUIRED:**

Grid Logic 3d Powder Printer	\$380,000
Thermal Technology DCS-25	\$408,000
Tekna-TekSphero 15	\$538,000
Zoz® high energy mill – CM080-8ml	\$860,528
SPEX Mills (2x)	\$16,000
LabRAM Mill	\$49,500
<b>Total Equipment Costs:</b>	<b>\$2,252,028</b>



**PROJECT SCOPE:**

The Project will renovate space on the 2<sup>nd</sup> floor of the Tom Bevill Building (“Bevill Building”) to create a new office suite for the Geography Department. The completion of this suite will allow for the relocation of the Geography Department to the Bevill Building, from Farrah Hall and enable future renovations to Farrah.

The Project will also encompass renovations and export control security enhancements for the Alabama Materials Institute (“AMI”) Laboratory Corridor, AMI 0006 Laboratory and renovate the office suite spaces in the Tom Bevill Building as necessary to support additional grants AMI has received.

Renovations will encompass 14,293 square feet of existing space in the Bevill Building including research laboratory space, and faculty and staff offices. The work will include all necessary mechanical, electrical, plumbing and life safety to support the project. The Project will also include all necessary Audiovisual and technology equipment and appropriate acoustical and sound isolation assemblies.

The Project will address campus deferred maintenance (capital renewal) liabilities in the amount of approximately \$2,500,000.

Long lead items will be Owner Purchased Contractor Installed to mitigate the effect of continued supply chain challenges.

**PROJECT STATUS**

SCHEMATIC DESIGN:	Date Initiated	June 2023
	% Complete	100%
	Date Completed	October 2023
PRELIMINARY DESIGN:	Date Initiated	November 2023
	% Complete	100%
	Date Completed	January 2024
CONSTRUCTION DOCUMENTS:	Date Initiated	February 2024
	% Complete	0%
	Date Completed	April 2024
SCHEDULED BID DATE:		May 2024

*\*N/A on Stage I Projects*

**RELATIONSHIP AND ENHANCEMENT OF CAMPUS PROGRAMS****AMI Offices and Lab Facilities:**

The Alabama Materials Institute (AMI) brings together interdisciplinary faculty and students from three colleges and multiple departments therein to advance materials development and education in energy, defense, transportation, human health, and environmental sustainability. AMI works in supporting the undergraduate and graduate courses across colleges and departments that ensure that these industries remain vibrant and hire the very best of University of Alabama's graduates because of their expertise and training that emanates from experiences within AMI.

**Geography Relocation:**

The move of the Geography faculty currently residing in Farrah Hall to the Bevill Building will allow the Geography department to function more efficiently by: 1) consolidating the department into two neighboring buildings (Bevill & Shelby), rather than being spread over 3 distant buildings; 2) greatly enhance the collaborative infrastructure of the department for academic / curricular and research purposes; 3) greatly enhance the increasingly well-funded research and curricular (Environmental Sciences major) collaboration with the Geological Sciences department (based in Bevill), due to improved proximity. Moving Geography from Farrah Hall to the Bevill Building will require 5,215 sq.ft. to be renovated in Bevill, and release approximately 18,000 sq.ft. of space in Farrah Hall for future programming.



February 23, 2024

Dr. Dana S. Keith  
Senior Vice Chancellor for Finance and Administration  
Sid McDonald Hall  
500 University Boulevard, East  
Tuscaloosa, AL 35401

Trustee Marietta M. Urquhart  
Chair, Physical Properties Committee  
Sid McDonald Hall  
500 University Boulevard, East  
Tuscaloosa, AL 35401

RE: Request for Waiver of Consultant Selection Process  
Tom Bevill Building Renovations  
UA Project #249-23-3398

Dear Dr. Keith and Trustee Urquhart,

The University of Alabama ("University") is requesting a Waiver of the Consultant Selection Process for the Tom Bevill Building Renovations project ("Project"), located at 201 7<sup>th</sup> Avenue.

The University proposes to utilize Williams Blackstock Architects ("WBA") of Birmingham, Alabama as the principal design firm for the Project. WBA was previously engaged by the University as the designer of record for the Renovations for Materials Characterization Service and Support of Academic Spaces project which was comprised of scope with the AIME and Bevill facilities. As a result, WBA has a detailed understanding of the infrastructure, utilities, locations, equipment configurations, and other existing conditions in the Bevill Building.

Due to their previous experience and substantial knowledge base gained executing projects on campus and over the course of development for the Project and their commitment to complete the design this spring to allow for bid in May of 2024, WBA's participation is critical to the Project's success. Further, WBA's familiarity and knowledge of the University's standards, design principles, and procedures will greatly facilitate the design and administrative process to expedite the Project schedule.

Accordingly, the University has negotiated a design fee for the Project based on 6.4% for Package A through C, plus a 1.10 renovation factor representing a total discount of \$39,947 or approximately 12% of the standard fee for the Project (Group III). The University also negotiated no additional fee for lab equipment design coordination.

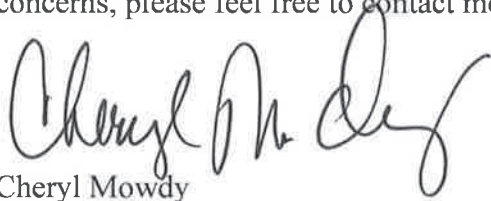
Cost of the Work		% Fee for Building Group III		Major Renovation Factor		Credits		Fee
\$4,161,120	x	6.4%	+	25%	-	\$0	=	\$332,889
\$4,161,120	x	6.4%	+	10%	-	\$0	=	\$292,943

**The proposed fees represent a significant financial benefit to the campus and a discount of \$39,947 or approximately 12% of the standard fee for the Project.**

Approval is hereby requested for:

1. Waiver of Consultant Selection process for the Project.
2. Williams Blackstock Architects, of Birmingham, Alabama, as the design service provider for the Project at a negotiated design fee based on 6.4% for Package A through C, a 1.10 renovation factor representing a total discount of \$39,947 or approximately 12% of the standard fee for the Project.
3. Submittal to the Physical Properties Committee for review and approval.

For your convenience, a Project Summary has been attached. If you have any questions or concerns, please feel free to contact me.



Cheryl Mowdy  
 Interim Vice President for Finance and Operations  
 and Treasurer

Attachment

pc w/atchmts: Michael Rodgers  
 Matt Skinner  
 Shawn Templeton  
 Tim Leopard  
 Jeremy Wood

Tom Bevill Building Renovations  
Consultant Selection Process - Waiver  
March 6, 2024  
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- ☒ Recommended for Approval.  
☐ Not Recommended for Approval. Submit to Physical Properties Committee.

DocuSigned by:

*Dana S Keith*

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Dr. Dana S. Keith, Senior Vice Chancellor for Finance and Administration

\*\*\*\*\*

- ☐ Recommended for Approval.  
☐ Not Recommended for Approval. Submit to Physical Properties Committee.

DocuSigned by:

*Marietta Urquhart*

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Trustee Marietta M. Urquhart, Chair for Physical Properties Committee

## Attachment K to Board Rule 415

Supplemental Project Information Worksheet  
Annual Capital Development Plan

FY: 2023 – 2024

**Project Name:** Tom Bevill Building Renovations  
**Project Address/Location:** 201 7th Avenue, Tuscaloosa, Alabama  
**Campus:** The University of Alabama

## 1. Will this Project increase the current space inventory on campus or replace existing space?

<input type="checkbox"/> increase space inventory	_____ % increase	_____ GSF
<input type="checkbox"/> replace space inventory	_____ % replacement	_____ GSF
<input checked="" type="checkbox"/> renovation of existing space only		<u>14,293</u> GSF

## 2. If this Project will replace existing space inventory, how will vacated space be utilized or assigned after this Project is completed?

Comments:

The 2<sup>nd</sup> Floor renovations for Geography will activate currently vacated space and provide for the relocation of the Geography Department from Farrah Hall to the Tom Bevill Building to facilitate the future planned renovation of Farrah Hall. The Provost is currently evaluating several options for Farrah Hall, but that decision will be finalized once the Farrah Hall project moves forward. Farrah Hall is tentatively scheduled for programming starting in 2026.

## 3. Is the proposed Project location consistent with the Campus Master Plan and University Design Standards and the principles contained therein?

☒ Yes      ☐ No, A Campus Master Plan Amendment Is Required

If Campus Master Plan amendment required, explain: *N/A*

4. Provide information on classification of new space provided by this Project and latest utilization data on similar type space on campus.

Proposed New Space/Facilities				
Classification	Number (Spaces/Rooms)	Capacity (Persons)	Area (GSF)	Existing Space Utilization Data (See Notations)
<b>100 Classroom Facilities</b>				
110 Classroom	1	29	723	
<b>200 Laboratory Facilities</b>				
250 Research/Non-class Laboratory	7	2-8 each	3164	
255 Research/Non-class Laboratory Service	1		272	
<b>300 Office Facilities</b>				
310 Office	37	1-2 each	5,880	
315 Office Service	6		816	
350 Conference Room	2	Varies	308	
<b>WWW Circulation Area</b>				
W06 Public Corridor	3		3,130	

Data reported on latest fiscal year data available.

Utilization factor based on Scheduled Operating Hours at each Campus – outlined below in notations.

Comments/Notations:

Both of the office suite sections in the Bevill Building are currently vacated. One was used by an external agency which vacated in December 2023.

This will fully activate and occupy the office suites.

5. How will this Project enhance existing/new programs and undergraduate/graduate enrollments?

Estimated new Funds from Tuition/Programs \$       N/A       Yr.

Comments:

The Alabama Materials Institute (AMI) brings together interdisciplinary faculty and students from three colleges and multiple departments therein to advance materials development and education in energy, defense, transportation, human health, and environmental sustainability. AMI works in supporting the undergraduate and graduate courses across colleges and departments that ensure that these industries remain vibrant and hire the very best of University of Alabama's graduates because of their expertise and training that emanates from experiences within AMI.



AMI's budgeted awards and contracts for FY 2023 was \$18,000,000 and actual was \$45,367,595. The proposed Project will allow AMI to support that growth and enhance revenue generated through recovery. The proposed Project will enable AMI to involve and train an increased number of undergraduate and graduate students in areas of national defense priorities. AMI is a partnering academic institution with the Army Research Laboratory (ARL) and the recipient of a \$2.25M (FY23) and \$3.75M federal priority (FY24) under the program 'Universal Nanocrystalline Alloys for Lethality' that creates novel metal mixtures that provide superior strength, unique consolidation pathways in additive manufacturing, and power generation through the 'splitting of water' to release hydrogen gas for national security. This 'Universal Nanocrystalline Alloys for Lethality' program is now under consideration in the National Defense Authorization Act (FY25) to be a program of record which would retain it for continuous funding as a sustained priority to national security, with UA providing both material development and education of students in these areas. Coupled with this is an Air Force Research Laboratory (AFRL) program 'Catalytic Architecture for ASCENT Satellite Maneuverability' (FY23, \$5.3M) that is working through federal procurement processing that brings UA into a leading role for new materials in support of Alabama aerospace industries with NASA Marshall Space Flight Center for educating students in developing lower cost materials to burn a new Air Force propellant through machine learning to identify new materials with novel lattices that optimize fluid flow. This program is under renewal consideration in the FY25 defense priority budget.

The Project consists of three parts: (1) 0006 Bevill to enable the installation of equipment under the ARL and AFRL programs to enable a materials processing space for education and program deliverables. (2) Modification of analytical instrument rooms to meet federal regulations in handling ITAR/Controlled Unclassified Information (CUI) in these programs and emerging requests from state and national laboratories and industries that are engaging AMI for programs to engage students with opportunities to work on such materials. And (3) office suite that will house the AMI staff from the shift to create ITAR/CUI space as well as promote collaborative locations for learning for students from AMI programs.

Specifically, the renovation in 0006 Bevill enables UA to construct a prototype powder manufacturing area to meet the deliverables in the ARL FY24 program, where equipment purchased in the program is safely housed and maintained during and after the program objectives are met to make unique metal mixtures. Through this program, this equipment will simultaneously enhance undergraduate and graduate learning experiences through hands-on assignments that will use this equipment, bringing textbook concepts into physical reality. This will occur in courses such as MTE 380 Synthesis, Processing, and Manufacturing, MTE 449 Powder Metallurgy and ME 383 Modern Manufacturing Processes, to name a few. Likewise, this equipment will enable graduate students to make materials to be tested and characterized facilitating their fulfillment of advanced degree requirements. As powder materials are ever more important to additive manufacturing processing, UA will be uniquely positioned to graduate students with direct hands-on experience distinguishing them from other peer institutions.

Complementing the ARL and AFRL collaborations, AMI is leading new initiatives for student

development through collaborative opportunities with Los Alamos National Laboratory (LANL), which is seeking to have internship-to-employment opportunities for students with key partnering universities. LANL is well aware of the 2022 Materials Education and Characterization Renewal Initiative that recapitalized key analytical microscopes, a critical aspect of their future employment needs, and sought out UA as a candidate partnering university. In November 2023 and January 2024, key LANL visitors, including Associate Director Ellen Cerreta, visited the campus to develop pathways for undergraduate and graduate students to have educational experiences at LANL; this is driven from the board multidisciplinary education opportunities UA students experience and through the have specific skills they acquire through access to facilities that AMI maintains. This onset of the powder processing would be no exception and would further elevate UA as a university that stands out from its peers because of the hands-on skills offered in its facilities. The materials processing capability will complement the analytical instruments giving the full range to affiliated AMI students from making to characterizing materials.

In the second portion of the renovation, the analytical labs will be fitted to meet ARL/AFRL federal program characterization needs and an ever-growing request from other Department of Defense laboratories and original equipment manufacturers (OEM) in the Huntsville area to AMI to engage students in materials that have some aspect of controls. These opportunities are giving UA students direct, real-world experiences in working with Alabama industries on their needs, enhancing their classroom education on fundamental aspects of science and engineering. To meet that need renovations to the Bevill 1014/1018 Bevill suite and a office-to-bay conversion in 1012-1021 Bevill is requested. Here, 1014/1018 Bevill houses analytical microscopes in a generally open space configuration. To meet ITAR/ CUI federal regulations for specific material handling, the instruments must be isolated from each other in single rooms that have card access controlled to accommodate such new programs. To adapt to these requirements, specific walls and doors will be added into the 1014/1018 Bevill space and the office suites from 1012 – 1021 Bevill will become instrument bays for some of this equipment as well as accommodate new equipment acquired from the federal programs. For example, the ARL federal priority has supported the purchase of a scanning electron microscope (SEM, \$300k) and the AFRL program will bring an X-ray Photo Spectrometer (XPS, \$1M) to AMI, all of which has grown out of the support of the 2022 BOT Renewal Initiative demonstrating how prior investments are leading to new, external investments in the institute. The addition of the XPS unit will serve courses in the Departments of Chemistry and Chemical and Biological Engineering. These renovations enable AMI to have the space and proper protocols to execute on these programs and support educational missions for specific departments as well. Through this renovation, the acquired instruments can be used for degree programs and not solely be dedicated to a particular program outcome. Through this renovation, undergraduate and graduate students will be able engage specific hiring programs that will track with their internships. For example, UA student interns at LANL will be able to continue to work with their federal laboratory mentors during the academic year by having access to UA facilities that meet federal requirements for handling materials used during the internship. As a result, this will be strengthening UA partnerships with such labs and allow UA students unprecedented advantages by continuing their external collaborations after the internship concludes. An outcome will be students have direct experiences that make them the ideal hires for national security employment, an ever-increasing demand in the Huntsville area and

nationally. UA, through AMI, is directly supporting the educational development for the state's workforce for tomorrow by ensuring them the on-campus access to work in safe and proper regulated environments.

Finally, with the office-to-instrument bay conversion in 1012-1021 Bevill, the AMI staff will be displaced facilitating the request to renovate 1005 Bevill. This space allows students a single location to engage AMI faculty and staff as they seek answers to their questions in the use of the AMI facilities. Furthermore, an ITAR/CUI space will be part of the office suite, which will ensure that student users, faculty, and staff have an approved space to store materials. Furthermore, open collaborative space for students is within the renovation design that will ensure opportunities for student and faculty groupings to occur where all can learn from each other. These spaces will also serve various educational outreach meetings and graduate degree defenses.

Collectively, the renovations enable AMI to effectively execute its mission in supporting programs that advance the educational materials coursework and research opportunities for undergraduate and graduate students. Through the renovation of space with the leveraging of federal initiatives for capital equipment, these outcomes will support classroom instruction with hands-on skillsets. Consequently, UA students, regardless of their specific degree, will have an enhanced educational experience at the Capstone making them the premiere hires in support of the state of Alabama's materials economy.

6. **Has a facility user group been established to provide input for planning, programming, and design purposes?** ☒ Yes ☐ In-Progress

If yes, list key members of user group:

**Alabama Materials Institute (AMI):**

Dr. Gregory Thompson, Director, Alabama Materials Institute  
 Rob Holler, Manager, Alabama Materials Institute  
 Dr. Sanghamitra Deb, Materials Characterization Specialists  
 Mr. Jordan Faltys, Materials Characterization Specialists  
 Mr. Johnny Goodwin, Instrumentation Specialist  
 Jason Bigelow, University Architect  
 Shawn Templeton, Project Manager  
 Jeremy Wood, Senior Project Manager

**Geography:**

Dr. Luoheng Han, Senior Associate Provost for Academic Affairs  
 Dr. Ray White, Senior Associate Dean, Arts & Sciences  
 Dr. Matthew Therrell, Professor & Chair of Geography  
 Jason Bigelow, University Architect  
 Jeremy Wood, Senior Project Manager

**7. Source(s) of funding for Total Project Development Costs.**

<b>Source(s)</b>	<b>New Funds (FY '23)</b>	<b>Reserves</b>	<b>Status <sup>/7</sup></b>
Tuition			
Student Fees			
Investment Income			
Auxiliary Income			
• External			
• Internal			
Education Sales/Services			
• External			
• Internal			
Direct Grants	\$2,252,028		Approved
Gifts			
Bonds			
Office of Research and Development Reserves	\$650,000		Pending
Office of Research and Development Reserves		\$400,000	Pending
Office of Academic Affairs Reserves	\$3,600,000	\$700,000	Pending
Arts & Sciences	\$100,000		Pending
Other/Central Reserves		\$1,067,972	Pending
<b>Totals</b>	<b>\$6,602,028</b>	<b>\$2,167,972</b>	

<sup>/7</sup> Approved, allocated, pending

**Comments:**

AMI's budgeted awards and contracts for FY 2023 was \$18,000,000 and actual was \$45,367,595.

8. Estimate of operations and maintenance (O&M) costs for the initial occupancy year and projections for succeeding five (5) year period.

<b>Operations and Maintenance (O&amp;M) Annual Costs Projections</b>			
<b>Expense</b>	<b>FY 2014- 2015 Base Data /8</b>	<b>First Full /YR Occupancy FY</b>	<b>Successive Five (5) Year Projections /9</b>
Maintenance			
Elevator Service			
Building Repairs			
Building Services			
Electric, Natural Gas, Steam			
Chilled Water			
Water and Sewer			
Insurance			
Safety Support			
Operations Staff Support Funding			
Other –			
<b>Totals</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>

/8 Latest Fiscal Year Data used as Base Year for Projections

/9 Combined Costs for next Five (5) Years of Occupancy

Comments:

AMI, Geography and the Tom Bevill Building are existing Educational and General facilities and, as such, O&M costs are already funded. There will be no incremental change in O&M resulting from this project.

**9. Source of funds for projected ongoing operations and maintenance (O&M) costs for this project.**

<b>Source(s)</b>	<b>Occupancy Yr /9 (FY _____)</b>	<b>Future Years /10</b>	<b>Status /7</b>
Tuition			
Student Fees			
Investment Income			
Auxiliary Income			
• External			
• Internal			
Educational Sales & Services			
• External			
• Internal			
Direct Grant(s)			
Reallocated Funds /11			
Gifts			
Other			
<b>Total/YR</b>			<b>N/A</b>

/9 Initial Full Yr of Occupancy

/10 Next Five (5) Yrs Occupancy

/11 Funds Reallocated from other sources

/7 Approved, allocated, pending

**Comments:**

AMI, Geography and the Tom Bevill Building are existing Educational and General facilities and, as such, O&M costs are already funded. There will be no incremental change in O&M resulting from this project.

**10. Are development expenditures for this Project being used to reduce the current deferred maintenance/facilities renewal liabilities for the Campus?**

\$ 2,500,000 29 % of Total Development Costs

**Comments:**

**11. What other development alternatives were considered in the planning process for this Project? /13**

/13 Renovation vs. new construction, adaptive reuse of underutilized buildings, etc.

Comments:

**AMI:**

Based upon the location of AMI staff and equipment currently housed within the Tom Bevill Building, the working group concluded adaptive reuse of existing spaces was the most effective means to executing the program's functionality. Other locations (North Engineering Research Center) would require more substantial renovation expenditures to provide the same functionality, and disrupt other programs.

**Geography:**

Adaptive use of underutilized space is the most logical and fiscally responsible plan to relocate the Geography Department. The programmed space in Bevill 2005/2006/2007 is currently vacant and will allow the department to be housed in close proximity to other department space in Bevill and Shelby Hall.

The move from Farrah Hall also begins to open up for future planned renovations and is the most logical approach.

**12. Explain how the project will promote adequacy of campus facilities in relation to the University's Mission and scope of programs and/or services:**

Comments:

**AMI:**

The overall goals of the project are well-aligned with the mission of the University in teaching, research, and service. In a short time, AMI's reputation in developing students and delivering outcomes from student projects has enabled it to be a critical partner for multiple organizations. This is evident in its federal initiative with the ARL being considering a program of record in the National Defense Authorization Act and other federal agencies reaching out to AMI to advance their research needs (AFRL) as well as provide a STEM workforce (LANL), to name a few. This has all be achieved through a seamless integration of teaching enhancements within the classroom through infrastructure supported in AMI; developing research programs that provide students distinctive undergraduate and graduate educational experiences; and service to the state and nation by cultivating students for the workforce of tomorrow with highly sought-after skills. This is realized through AMI being a multidisciplinary environment that brings together faculty and students over a range of degrees from geology and chemistry to electrical and



mechanical engineering.

TEACHING: UA offers classroom and laboratory instruction in multiple undergraduate and graduate courses. AMI has a track record of successful integration of materials characterization instruments to the undergraduate and graduate UA curriculum. This will be expanded upon through specific instruments being added: the scanning electron microscope (SEM) from ARL and the X-ray Photo Spectrometer (XPS) from AFRL. The renovation in 1014/1018 Bevill and office-to-instrument bay (1012-1021 Bevill) ensures the capability to house these tools, not just for the programs themselves but to be available for the educational enrichment activities for the students that would require access to these specialized instruments. The renovation in 0006 Bevill adds a new dimension to the educational experience by allowing students to make materials by using instruments acquired from the federal programs. Again, the renovation enables all students access within the AMI interdisciplinary organization structure which ensures specific instruments and techniques are not siloed in a single department. In this manner, AMI is the optimal means to ensure collective accessibility to all faculty and students that desire to integrate the infrastructure of AMI into the classroom. To date, more than 225 new undergraduate and graduate students were trained in AMI supporting more than 82 faculty members on some 150 active, externally funded programs. Furthermore, more than 20% of UA's STEM undergraduates are involved in Co-Op experiences and AMI is leveraging its infrastructure to grow these experiences by attracting industry and federal laboratories to UA, as highlighted through hosting LANL.

RESEARCH: UA has and continues to undergo an unprecedented rise in research impact, both in terms of active awards and scholarship that emanates from it. With those awards comes the opportunity to support undergraduate research experiences and M.S. and Ph.D. degree graduations. The renovation ensures that the federal initiatives can be successful by placing the purchased infrastructure from these awards in a proper and safe environment, which can ultimately be accessible to a larger number of users. Through the management of the initiatives in AMI, this consequently enables the equipment to be available for all faculty and students; in doing so, it enables faculty to seek out and win new research awards that could not be won if they did not have access to the equipment. This then grows more opportunities for student support and scholarship. It also allows students to access the newest generation equipment which increases the impact and quality of their own work. Faculty that are engaged in the AMI's core facilities have received >11,267 citations from their work, published >1,706 papers in the past five years, and raised more than \$44M annually in research awards in FY23, when AMI conservatively projected \$18M in the same period. This has been made possible by giving faculty and students facilities that outperform peer organizations. The proposed renovation enables AMI to grow from its core competency in analytical characterization to materials processing. By doing so, AMI will be able to meet required federal regulations to work on defense orientated programs expanding impact to stakeholders through technical outcomes and student work experience development. Collectively, these resources translate to increase external funding that supports the education of UA students through meaningful research experiences as they progress in their degrees.

**SERVICE:** The renovation will allow AMI to meet more of our state's industry needs in defense/aerospace and, in doing so, provide direct opportunities to train UA students for these jobs. This extends UA's student education outside the traditional lecture hall, which makes UA unique as demonstrated by the Randall Research Scholars program, the nation's first interdisciplinary undergraduate research program. Through the renovation, AMI will support UA's tradition and expand the core competency from analytical characterization to materials processing. This makes AMI a holistic materials institute and can capture the attention of students that may have a strong interest in other areas. The renovation serves the educational courses at UA. Specifically to the federal initiative of materials processing, the space ensures the capital equipment provided through federal funds are well preserved in an appropriate operating environment and access to all will be achieved. This will serve our faculty and students for years to come while also maintaining the capability through federal programs that become programs of record in support of national security.

The renovations are essential to the execution for current and future federal programs and the growth and impact of AMI to the University's collective teaching, research, and service missions. By providing this space whereupon critical instrumentation will be installed, it will retain and attract the best students and faculty by offering them infrastructure needed to reach their educational and research aspirations.

### **Geography:**

The move of the Geography faculty currently resident in Farrah Hall to the Bevill building will allow the Geography department to function more efficiently by: 1) consolidating the department into two neighboring buildings (Bevill & Shelby), rather than being spread over 3 distant buildings; 2) greatly enhance the collaborative infrastructure of the department for academic / curricular and research purposes; 3) greatly enhance the increasingly well-funded research and curricular (Environmental Sciences major) collaboration with the Geological Sciences department (based in Bevill), due to improved proximity. Moving Geography from Farrah to Bevill will require 5,320 sq.ft. to be renovated in Bevill and release approximately 18,000 sq.ft. of space in Farrah for future UA programming.

## **13. How does the project correlate to the University's strategic goals?**

### **Comments:**

### **AMI:**

The Alabama Materials Institute was founded to bring together the multidisciplinary faculty and students at the University of Alabama who engage in materials-centric education and research activities. In doing so, it provided an inward and outward means to foster collaboration. As an institute, it supports these activities in a multitude of ways, including access to infrastructure where this renovation is needed and catalyzed through AMI's success with federal initiatives. The Bevill Building Renovation strongly synchronizes with the Strategic plan and goals (<https://www.ua.edu/strategicplan/goals>) of the University of Alabama by the following:

The **first goal** of the University's strategic plan is to ***“provide a premier education that enhances the lives of our students, graduates, and the communities they serve.”*** This Project will advance that goal by:

The ability to move beyond in-class, textbook instruction to a hands on learning environment where students operate high-tech instruments provides a powerful and impactful educational experience, both at the undergraduate and graduate level. The renovation aims to ensure that UA students have access to these experiences by providing the proper spaces where state-of-the-art instruments are safely installed and maintained. To that end, efforts are underway to create certificates that certify individuals in the operation and/or data analysis methods of infrastructure housed in AMI. AMI synergistically integrates federal research programs/equipment towards undergraduate and graduate education by ensuring access to such equipment and by doing so, it enhances the curriculum found in the various academic programs related to AMI's objectives.

The **second goal** of the University's strategic plan is to ***“increase the University's productivity and innovation in research, scholarship and creative activities that impact economic and societal development.”*** This Project will contribute to that goal by:

This renovation will ensure the space is sufficiently prepared to install various instruments to meet existing and future federal initiative programs. AMI's success in ARL's Universal Nanocrystalline Alloys for Lethality has matriculated the program into the FY25 National Defense Authorization Act. In doing so, the equipment placed in the renovated space will support long term program of record activities in support of national security. The materials that will be developed will result from undergraduate and graduate student efforts, which will be disseminated through peer-reviewed papers, thesis, and dissertation. Derivative outcomes will include new advancements. For example, in the ARL program, UA has a provisional patent that a specific nanocrystalline alloy that 'splits water' generating hydrogen gas through a nano galvanic reaction and also generates sufficient heat to eliminate pathogens in water, or, in other words, the reaction cleans contaminated water. In other efforts, the work is leading to novel ways to consolidate powders into solid forms with no external pressure. Through direct and continual access to the equipment in these spaces, new and ever more impactful outcomes will occur.

Besides the direct outcomes of the ARL programs, this renovation space will support infrastructure under an AFRL federal initiative that brings UA together with Alabama industry (Plasma Processes LLC) and NASA MSFC.

Finally, the educational experiences from use of the equipment in AMI is drawing the attention of employers, such as LANL, which seek to hire interns to full employment status. AMI infrastructure is allowing departments to train students with skills that make them marketable and draws the attention of such employers to the UA campus because of facilities that AMI maintains. This renovation ensures and grows these activities.

The **third goal** of the University's strategic plan is to ***“enrich our learning and work environment by providing an accepting, inclusive community that attracts and supports a diverse faculty, staff, and student body.”*** This Project will contribute to that goal by:

Materials research and associated disciplines seek the greatest minds to progress research advancements. UA's departments in Engineering, Physics, Chemistry, and Geology are but a few of these entities where materials characterization and material processing facilities benefit the overall education and research environment. In the pursuit of education and research innovation, these departments seek the best and brightest individuals, both faculty and students, to their disciplines, and provide them with the resources to be the best in their field. The Bevill Building Renovation is the means to ensure enable AMI growth through leadership in federal initiatives that can then be leveraged to foster an enriching learning and work environment that supports faculty, staff, and the student body.

The **fourth goal** of the University's strategic plan is to ***“foster an environment that will aid in the recruitment, retention, growth, and support of outstanding faculty and staff.”*** This Project will contribute to that goal by:

Outstanding faculty and staff are critical to the success of any major research institution. To enable this success, this renovation request seeks to provide the space to install the most modern equipment to guide education and research, and in doing so, reduce the stress that an individual faculty member experiences in trying to build such capability alone. The lack of core materials processing infrastructure, which AMI aims to provide and compliment with the state-of-the-art characterization equipment, will ensure that outcome. By leveraging federal initiatives for the equipment, which is needed to meet end objectives, the renovations ensure a safe space for operation. By providing this resource, the program outcomes are achieved and the longevity of the equipment for the faculty and student is secured.

### **Geography:**

The **first goal** of the University's strategic plan is to ***“provide a premier education that enhances the lives of our students, graduates, and the communities they serve.”*** This Project will advance that goal by:

Allowing the Geography department to better serve their majors, particularly the Environmental Sciences majors, by being in close proximity to the department of Geological Sciences, which helps implement the latter program.

The **second goal** of the University's strategic plan is to ***“increase the University's productivity and innovation in research, scholarship and creative activities that impact economic and societal development.”*** This Project will contribute to that goal by:

The increasingly well-funded research collaborations between the faculty of Geography and Geological Sciences will be greatly enhanced by being in close physical proximity. Meeting space and classroom space will be shared between the two departments and

proximity will promote collaborations in research and in curricular development and delivery.

The **third goal** of the University's strategic plan is to *“enrich our learning and work environment by providing an accepting, inclusive community that attracts and supports a diverse faculty, staff, and student body.”* This Project will contribute to that goal by:

The move of Geography faculty in Farrah to Bevill will help physically unify the department, which will promote greater inclusivity within the department and with the neighboring Geological Sciences faculty. Meeting space and classroom space will be shared between the two departments and proximity will promote collaborations in research and in curricular development and delivery.

The **fourth goal** of the University's strategic plan is to *“foster an environment that will aid in the recruitment, retention, growth, and support of outstanding faculty and staff.”* This Project will contribute to that goal by:

The planned renovation of space for offices, classroom, and seminar/conference rooms will greatly improve the physical and collaborative atmosphere for faculty, students, and staff in the Geography department. This should have a positive effect on retention and recruitment of faculty and staff.

**14. Which of the six University of Alabama system Core Principles does this project support?**

Comments:

**AMI:**

The **first Core Principle** is *“assure that everything we do is for the purpose of improving the lives and health of the citizens of the State of Alabama.”*

The **fifth Core Principle** is *“Work to help lead a unified approach to improving the economy, opportunities, and comprehensive health care for all citizens of Alabama.”*

The Bevill Building Renovation will provide a tremendous educational opportunity for UA students that will translate into rewarding and well-earning STEM careers in support of the state's high-tech industries. Many aspects of the renovation are to meet federal guidelines such that this equipment can directly support programs within the state, with those funds directly supporting students and their degrees. Alabama Executive Order 720 directs the Alabama Innovation Commission to stimulate economic growth in the state's most prominent tech-based industries. Part of this mission is a well-trained work force. The outcomes offered by this renovation will be available to collegiate students as well as offer innovative means to engage the rising generation of students into STEM by seeing opportunities in materials through visits to UA, such as E-day, educational materials camps for teachers, etc. Collectively,



these outcomes will increase the opportunities for STEM development for the rising generation of students in Alabama.

The scholarship provided by access to instruments in properly prepared spaces managed through a university-wide organization will be done by undergraduate and graduate students along with their faculty mentors solving some of the most difficult challenges the nation faces in energy, water, transportation, health, and national defense. These instruments acquired through research programs but in need of a centralized space, will result in meeting next-generation material challenges, thereby providing Alabamians and all citizens improved health and safety.

Through this investment, UA will be placed into a preeminent position to engage state, regional, and national organizations for collaborations to make and characterize materials. UA will become a strategic partner for federal laboratories and industries to solve those challenges by giving our students the space where critical infrastructure can reside. And in doing so, UA will offer the best education in the nation which will reverberate in Alabama's high-tech workforce for a better and safer society.

**The second Core Principle is *“make higher education accessible and diverse, prepare our students for success, and meet the workforce needs of the State.”***

**The fourth Core Principle is *“Work to lead a unified approach to improving education at every level in Alabama.”***

The renovation project provides a substantial improvement to outdated laboratory spaces and ensures that the accessibility meets all federal guidelines for programs that require sensitive access. The equipment to be installed in the renovated space, acquired through federal funds, will be centralized so that when not in use for the programs themselves, can be access by other faculty and student users. In doing so, the equipment will readily be integrated into various courses where direct, hands-on training parallels higher education lecture learning; the renovation will allow students tactile experiences to use equipment that will bring the textbook to life. Such experiences will ensure profound, meaningful, and retained understanding that will enable UA graduates to rise above their peers in achieving employment. The increasing demand for a high-tech workforce is nowhere more evident than Huntsville (aka Rocket City), evident by Blue Origin, Boeing, Space Force, and others establishing themselves in an already known high-tech area. By giving UA students the proper educational infrastructure, as proposed here by renovating and centralizing the space for both processing and growth for new characterization equipment, the Capstone will be providing Alabama the most well-educated and trained workforce in STEM. No longer will talent need to be pulled from out-of-state, but it will now come from within the state. The initiative will cement UA as the dominate higher educational institution for educating undergraduate and graduate students in materials, providing the state with this necessary and needed workforce.

**The third Core Principle** is *“be accountable for every dollar we receive while maintaining the highest standards of excellence in every program and endeavor.”*

The Bevill Building Renovation utilizes federal program funds to acquire a range of instruments, that when linked together provides for a seamless pathway to make materials. The outstanding issue is to centralize the instruments such that the investment in the space renovation can ensure access by all rather than stowed in a single faculty investigator laboratory. Thus, the investment provides equal access and maximizes the impact of the funds spent. It also ensures that AMI can meet all federal regulations for handling material through control card access; this has been particularly important as state-based and national labs as well as industries that look to support educational research activities for UA students require these specific controls. Collectively, the investment ensures for the resources to grow and sustain AMI by leveraging its current federal initiative successes into programs of record as well as new areas that can be pursued by having the equipment properly installed in the correct space.

**The sixth Core Principle** is *“Elevate the status, stature and influence of the University of Alabama System so that we can call on all people devoted to the University of Alabama, UAB, UAH, and the UAB Health System to unite for common purposes.”*

AMI’s philosophy for supporting open access equipment will be further enhanced through the renovation program. These renovations will allow new characterization equipment to be added to recent investments as well as provide new resources to student and faculty users in materials processing. While AMI is a relatively new institute, it has maintained UA’s analytical microscopes under various management models for more than two decades. This has ensured that the UA system and its sister institutions will benefit from the resources found on the campus, as UA has successfully shown with its electron microscopes. The processing equipment will be unique for a university environment. It will include both bench top to small industrial scale high energy ball milling (10 g to 1000 g); the only non-government entity to have an Ordered Powder Lithography additive printing unit specifically directed to UA by ARL; and the only powder spheroidizer unit in a state of Alabama university, where such a unit increases the flowability of powder for additive manufacturing. The National Science Foundation Division of Materials Research held a “Opportunities in Experiment, Computation, Theory, and AI” workshop (CY2021) to discuss the next decade of materials investments, which AMI’s executive director served on. One of the outcomes of the panel was the recognized need for regional locations that support materials processing. Through the renovation, UA is well positioned to meet this need and elevate its prominence nationally as a place where users can come and make materials through powder processing.

These collective capabilities are enabled through placement of proper equipment in a renovated lab space. By being local to UA, it will give UA students and faculty a competitive advantage in developing new technologies from the use of these tools. For example, under the ARL federal program (FY23), four provisional patents are being generated including the following: materials whose heat of reaction with water kills bacteria; creation of a new powder milling vial; a new milling unit that processes up to 24 samples simultaneously; and a new metal that provides rapid cooling with no wear from the supersonic flow of powder through a nozzle made of such material.



### **Geography:**

The **first Core Principle** is *“assure that everything we do is for the purpose of improving the lives and health of the citizens of the State of Alabama.”*

The renovation of Bevill office & classroom space for the Geography department will improve the quality of life for the faculty and staff, as well as students in the program, due to improved infrastructure for teaching, advising, and research.

The **second Core Principle** is *“make higher education accessible and diverse, prepare our students for success, and meet the workforce needs of the State.”*

The move of Geography faculty from Farrah Hall to Bevill would allow the department to more efficiently implement (with curricular partner Geological Sciences) the growing Environmental Sciences undergraduate program.

The **third Core Principle** is *“be accountable for every dollar we receive while maintaining the highest standards of excellence in every program and endeavor.”*

Moving Geography from Farrah to Bevill will require 5,320 sqft. to be renovated in Bevill and release approximately 18,000 sqft. of space in Farrah for future UA programming. The move of Geography faculty from Farrah Hall to Bevill would allow the department to function more efficiently and effectively, by enhancing: 1) the increasingly well-funded research collaborations between Geography and Geological Sciences as well as 2) their implementation of the growing Environmental Sciences undergraduate program.

The **fourth Core Principle** is *“work to lead a unified approach to improving education at every level in Alabama.”*

The move of Geography faculty from Farrah Hall to Bevill would allow the department to more efficiently and effectively implement (with curricular partner Geological Sciences) the growing Environmental Sciences undergraduate program.

- 15. What would be the immediate impact on campus programs and enrollment if this project is not approved?**

Comments:

### **AMI:**

The failure to approve the Bevill Building Renovation will adversely affect delivery on two major federal initiative programs. Namely, the Army Research Laboratory ‘Universal Nanocrystalline Alloys for Lethality’ and the Air Force Research Laboratory ‘Catalytical

Architecture for ASCENT Satellite Maneuverability.’ The equipment in each program would not have a location to be installed and failure to acquire each instrument will not enable the workflow pathways to be completed. As a result of not renovating Bevill, UA would not be able to deliver on its program outcomes. Since the ARL program is under consideration with the FY2025 National Defense Authorization Act, where it would become a program of record providing continuous funding for such activities, this would be devastating. Clearly, failure to properly install the equipment would jeopardize this and any future efforts for similar projects with ARL and/or AFRL.

By renovating a centralized space, the infrastructure would be allowed to be shared by other users, which could grow the educational and research opportunities for all faculty and students. Failure to centralize the equipment would silo access to spaces where only single investigators have access to the equipment and defeat the overarching aims of AMI to support faculty and students.

The inability to complete the renovations for the staff offices (1005 Bevill) and labs in 1014/1018 Bevill and 1012-1021 Bevill (office-to-bay conversion) will not allow AMI to engage state and federal agencies that have specific regulations on the handling of materials. The renovations ensure proper security and failure to complete these renovations would not allow AMI to take upon requested work that is ITAR/CUI. This would undercut funding to support infrastructure as well as student degrees, and direct benefit to industries in the state.

Finally, if unable to establish a materials processing facility through the renovated space, the ability to be holistically competitive in the material realm decreases, which will result in the inability to recruit and retain the best students and faculty. Prospective undergraduate and graduate students, as well as the faculty who come for interviews, will be underwhelmed by not having a complete workflow from making materials to characterizing materials, as seen in other preeminent research universities.

### **Geography:**

The opportunity would be lost to enhance the existing collaborations between Geography and Geological Sciences faculty in 1) increasingly well-funded research collaborations and in 2) implementing the growing Environmental Sciences undergraduate program.

Would greatly hinder the planned renovation of Farrah Hall until such time that an alternate location for Geography could be identified.

# TOM BEVILL BUILDING RENOVATIONS PROJECT

## LOCATION MAP

