UNIVERSITY OF ALABAMA SYSTEM
BOARD RULE 415
BOARD SUBMITTAL CHECKLIST CRITERIA

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

CAMPUS: The University of Alabama

PROJECT NAME: Reno for Materials Characterization Service & Support of Academic Programs

MEETING DATE: September 15-16, 2022

- [x] 1. Board Submittal Checklist No. 1 and 2
- [x] 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
- [x] 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
- [x] 4. Executive Summary – Proposed Capital Project /2
- [ ] 5. Executive Summary – Architect, Engineer, Selection Process (include Interview Outline). /3, /4, /5, *
- [x] 6. Supplemental Project Information Worksheet – Exhibit "K", Board Rule 415
- [x] 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 /6
- [ ] 8. Preliminary Business Plan (if applicable) /7
- [x] 9. Campus map(s) showing project site

Prepared by: David Jones

Approved by: Jim Leopard/CM

/1 Reference Tab 3H – Board Rule 415 Instructional Guide
/2 Reference Tab 3E – Board Rule 415 Instructional Guide
/3 Reference Tab 3K – Board Rule 415 Instructional Guide
/4 Reference Tab 3L – Board Rule 415 Instructional Guide
/5 Reference Tab 3M – Board Rule 415 Instructional Guide
/6 Reference Tab 3N – Board Rule 415 Instructional Guide
/7 Reference Tab 3V – Board Rule 415 Instructional Guide
/8 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

* Request for Waiver of Consultant Selection Process

THE UNIVERSITY OF ALABAMA® | Office of the President

August 15, 2022

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 Stage I and Stage II submittals for the Renovations for Materials Characterization Service and Support of Academic Programs project.

The resolution requests authorization to establish a preliminary budget and funding for the project as stipulated and to enter into an Owner Designer Agreement with Williams Blackstock Associates of Birmingham, Alabama, as the principal design firm for the 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 at their regular meeting on September 15-16, 2022.

Sincerely,

Stuart R. Bell
President

Enclosure

203 Rose Administration Building | Box 870100 | Tuscaloosa, AL 35487-0100 | 205-348-5100 | Fax 205-348-7238
president@ua.edu | http://www.ua.edu

RESOLUTION

RENOVATIONS FOR MATERIALS CHARACTERIZATION SERVICE AND SUPPORT OF ACADEMIC PROGRAMS

WHEREAS, in accordance with Board Rule 415, The University of Alabama ("University") is requesting approval of a Stage I submittal for the Renovations for Materials Characterization Service and Support of Academic Programs project ("Project") to be located in the current Alabama Innovation and Mentoring of Entrepreneurs Center (AIME) at 720 2nd Street and the Tom Bevill Building at 201 7th Avenue, respectively; and

WHEREAS, the Project will provide for the instruction and education of undergraduate and graduate students in materials characterization and analysis related fields using modern analytical instruments, will recapitalize the University's inventory of materials characterization and analytical equipment, and will renovate existing spaces where the equipment will be installed and utilized to provide the appropriate support environment for the equipment; and

WHEREAS K-12 teachers will be able to come to the University to this facility to learn how to incorporate materials into their physical science, chemistry, and physics courses, and have microscopes that can stream 'live' images into their classes. These interactions provide opportunities to recruit future students; and

WHEREAS, the new instruments in this Project will allow the University to train more students in materials and materials characterization and to therefore be in high demand for future employment and post-graduate placement; 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 fully pay for the use and upkeep of the instruments;

WHEREAS, Williams Blackstock Architects, Birmingham, Alabama ("WBA") has gained a substantial knowledge base of the unique requirements of the Project over the course of development and are committed to deliver the Project by Fall 2023; 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 7.2% of the cost of construction, plus a 15% renovation factor and $80,542 for additional services, less credits totaling $15,000 for Laboratory/Instrument Room planning and design and overall design, which is 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 the Project is in direct support of the University's Strategic Goals; and

WHEREAS, the Project will be funded from the Office for Research and Economic Development Reserves in the amount of $3,957,745; and University Central Reserves in the amount of $6,000,000 and will address campus deferred maintenance (capital renewal) liabilities in the amount of approximately $8,500,000; and

WHEREAS, the Office for Research and Economic Development will execute an internal loan to reimburse central reserves $600,000 per year for 10 years using indirect funds produced by the externally sponsored projects generated by this initiative; and

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

BUDGET:		PRELIMINARY
Construction A – AIME Demolition	$	75,000
Construction B – AIME Renovation	$	950,000
Construction C – Bevill Renovation	$	100,000
Furniture, Fixtures and Equipment	$	8,458,283
Security/Access Control	$	12,500
Telecommunication/Data	$	12,500
Contingency* (6.5%)	$	73,125
UA Project Management Fee** (3%)	$	35,944
Architect/Engineer Fee*** (7%)	$	158,692
Other****	$	81,701
TOTAL PROJECT COST	**$**	**9,957,745**

*Contingency is based on 6.5% of Construction Packages A-C.
**UA Project Management Fee is based on 3% of Construction Packages A-C plus Contingency.
***Architect/Engineer Fee is based on 7.2% of the cost of construction with 1.15 Renovation Factor, plus $80,542 for additional services, and a Design Credit of $15,000.

**** Other includes Geotechnical, Materials Testing, UA Work Orders, Campus Bird, Advertising, Printing, and Construction Transportation and other associated project costs, as applicable.

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 budget and funding for the Project as stipulated above is hereby approved.

ALSO, BE IT FURTHER RESOLVED THAT, Stuart R. Bell, President; Matthew M. Fajack, Vice President for Finance and Operations and Treasurer; 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 architectural service agreement with Williams Blackstock Architects, of Birmingham, Alabama, for architectural services in accordance with Board Rule 415 for the Project.

EXECUTIVE SUMMARY
PROPOSED CAPITAL PROJECT
BOARD OF TRUSTEES SUBMITTAL

MEETING DATE:	September 15-16, 2022
CAMPUS:	The University of Alabama, Tuscaloosa, Alabama
PROJECT NAME:	Renovations for Materials Characterization Service and Support of Academic Programs
PROJECT NUMBER:	252-23-3028 AIME Renovation for Materials Characterization 249-23-3033 Bevill Renovation for Materials Characterization
PROJECT LOCATION:	AIME – 720 2nd Street; Bevill – 201 7th Avenue
ARCHITECT:	Williams Blackstock Architects of Birmingham, Alabama (Proposed)

THIS SUBMITTAL:	**PREVIOUS APPROVALS:**
☒ Stage I	
☒ Stage II, Waiver	
☐ Campus Master Plan Amendment	
☐ Stage III	
☐ Stage IV	

PROJECT TYPE	**SPACE CATEGORIES**	**PERCENTAGE**	**GSF**
☐ Building Construction	Laboratory & Academic Support	~100%	1,032
☐Building Addition			
☒Building Renovation			
☒Equipment			
	TOTAL	**100%**	1,032

BUDGET		Preliminary
Construction A – AIME Early Demolition Package	$	75,000
Construction B – AIME Renovations for Materials Characterization	$	950,000
Construction C – Bevill Renovation for Materials Characterization	$	100,000
Furniture, Fixtures and Equipment	$	8,458,283
Security/Access Control	$	12,500
Telecommunication/Data	$	12,500
Contingency* (6.5%)	$	73,125
UA Project Management Fee** (3%)	$	35,944
Architect/Engineer Fee*** (7%)	$	158,692
Other****	$	81,701
TOTAL PROJECT COST	**$**	**9,957,745**
Construction Cost per square foot: $1,161		

*Contingency is based on 6.5% of the costs of Construction Packages A-C.
**UA Project Management Fee is based on 3% of the costs of Construction Packages A-C plus Contingency.
***Architect/Engineer Fee is based on 7.2% of the costs of Construction with 1.15 Renovation Factor, plus $80,542 for additional services, and Design Credit of $15,000.
****Other Includes: Geotechnical, Materials Testing, UA Work Orders, Campus Bird, Advertising, Printing, and Construction Transportation and other associated project costs, as applicable.

ESTIMATED ANNUAL OPERATING AND MAINTENANCE (O&M) COSTS:		
(Utilities, Housekeeping, Maintenance, Insurance, Other)		
Total Estimated Annual O&M Costs:	**$**	**N/A***

*AIME 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.

FUNDING SOURCE:			
	Office for Research and Economic Development Research Reserves	$	3,957,745
	University Central Reserves	$	6,000,000*
O&M Costs:	University Annual Operation Funds	$	N/A

*ORED will reimburse Central Reserves $600,000 per year for 10 years using indirect funds produced by the externally sponsored awards generated by this Initiative.

NEW EQUIPMENT REQUIRED		
Helios 5 Hydra P-FIB		
Talos 200I TEM		
Spectra 300 TEM		
Helios 5 UX FIB		
	Equipment Bundle Subtotal:	$6,400,000
LEAP Atom Probe 6000XR		$2,058,283
	Total Equipment Costs:	$8,458,283

PROJECT SCOPE:

The Renovations for Materials Characterization Service and Support of Academic Programs project will replace certain equipment as enumerated above and renovate the spaces in AIME and the Tom Bevill Building as necessary to support the new equipment and analytical instruments.

Providing the appropriate facility environment including vibration elimination, electromagnetic interference (EMI) and radiofrequency (RF) shielding, and acoustics are paramount for the proper operation of the equipment and is included as necessary. Specialty consultants are included in the scope of the Architect's services to ensure the requirements are identified and met within the design.

The project will recapitalize UA's inventory of materials characterization equipment and provide equipment that meets the needs and functionality of the service group.

PROJECT STATUS		
SCHEMATIC DESIGN:	Date Initiated	July 2022
	% Complete	0%
	Date Completed	September 2022
PRELIMINARY DESIGN:	Date Initiated	September 2022
	% Complete	0%
	Date Completed	November 2022
CONSTRUCTION DOCUMENTS:	Date Initiated	November 2022
	% Complete	0%
	Date Completed	February 2023
SCHEDULED BID DATE:		February 2023

RELATIONSHIP AND ENHANCEMENT OF CAMPUS PROGRAMS

The Renovations for Materials Characterization Service and Support of Academic Programs has as its core mission the instruction and education of undergraduate and graduate students in materials research-related fields using modern analytical instruments. The University of Alabama (UA) can affirm itself as a leading education location worldwide through a recapitalization in the proposed materials characterization equipment, where the current instruments are becoming perilously susceptible to obsolescence and experience significant downtime. Many of the instruments are approaching nearly two decades of life. Such a recapitalization will attract the best students and faculty in multiple disciplines. In doing so, UA's core facilities will usher in the next generation of materials education and research for energy, defense, transportation, human health, and environmental sciences, all of which align with the state of Alabama's Science and Technology Roadmap (https://alepscor.org/roadmap/).

The recapitalized instruments are used in supporting undergraduate and graduate-level courses in multiple departments and across colleges. However, the current condition of many of these instrument's results in frequent downtime hindering reliable incorporation for teaching and supporting research programs. Furthermore, they are no longer cutting-edge, inhibiting UA from meeting its educational objectives for providing its students the highest quality of opportunities for training and education. In addition, the obsolescence of the instrument's places UA at a disadvantage to its peer institutions in proposing and winning new research grants and contracts that support student education as they can no longer match what many others can propose.

The renewal itself would expand educational and research horizons on and off-campus. Through modern remote access availability offered by these modern instruments, coupled with renovations to make them effective in their environment, UA will be able to support UA system campuses in their educational and research pursuits creating a true core facility. The remote access will also enable ongoing outreach engagements to spark the interest of the rising generation of Alabamian students in K-12 classrooms. Here, teachers that now come to the UA campus to learn how to incorporate materials into their physical science, chemistry, and physics courses will have microscopes that can stream 'live' images into their classes. These interactions give UA an edge in recruiting future students.

Collectively, the renewal initiative offers the infrastructure to ensure UA's preeminent leadership in education and research to support the state's growing workforce needs, evident in the burgeoning aerospace and defense employers in Huntsville, for example. Renewal of this scale will have a generational impact on the scope of education, research, and facility capabilities unmatched in the southeast region and nation.

Attachment K to Board Rule 415

Supplemental Project Information Worksheet
Annual Capital Development Plan

FY: 2022-2023

Project Name/Category: Renovations for Materials Characterization Service and Support of Academic Programs

Address/Location Alabama Innovation and Mentoring of Entrepreneurs Center (AIME) at 720 2nd Street & Tom Bevill Building at 201 7th Avenue

Campus: The University of Alabama

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

☐ increase space inventory	_____	% increase	_____	GSF
☐ replace space inventory	_____	% replacement	_____	GSF
☒ renovation of existing space only			1032	GSF

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

Comments:
This project will not vacate space.

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

☒ Yes ☐ No

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)
200 Laboratory Facilities				
210 Class Laboratory				
215 Class Laboratory Service				
220 Open Laboratory	1	2	1032	
225 Open Laboratory Service				
250 Research/Non-class Laboratory				
255 Research/Non-class Laboratory Service				

Comments:

This project will renovate the existing spaces that house the current equipment and instrumentation which is highly utilized.

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

Renovations for Materials Characterization Service and Support of Academic Program

Estimated New Funds from Tuition/Programs **$** 1,500,000 Yr.

Comments:
The Renovations for Materials Characterization Service and Support of Academic Programs has as its core mission the instruction and education of undergraduate and graduate students in materials research related fields using modern analytical instruments. The University of Alabama ("UA") can affirm itself as a leading education location worldwide through recapitalization in the proposed materials characterization equipment, where the current instruments are becoming perilously susceptible to obsolescence and experience significant downtime. Many of the instruments are approaching nearly two-decades of life. Such a recapitalization will attract the best students and faculty in multiple disciplines. In doing so, UA's core facilities will usher in the next generation of materials education and research for energy, defense, transportation, human health, and environmental sciences, all of which align with the state of Alabama's Science and Technology Roadmap (https://alepscor.org/roadmap/).

The recapitalized instruments are used in supporting undergraduate and graduate level courses in multiple departments and across colleges. However, the current condition of many of these instrument's results in frequent downtime hindering reliable incorporation for teaching and supporting research programs. Furthermore, they are no longer cutting-edge inhibiting UA from meeting its educational objectives for

providing its students the highest quality of opportunities of training and education. In addition, the obsolesce of the instrument's places UA at a disadvantage to its peer institutions in proposing and winning new research grants and contracts that support student education as they can no longer match what many others can propose.

The renewal itself would expand educational and research horizons on and off campus. Through modern remote access availability offered by these modern instruments, coupled with renovations to make them effective in their environment, UA will be able to support UA system campuses in their educational and research pursuits creating a true core-facility. The remote access will also enable on-going outreach engagements to spark the interest of the rising generation of Alabamian students in K-12 classrooms. Here, teachers that now come to the UA campus to learn how to incorporate materials into their physical science, chemistry and physics courses will have microscopes that can stream 'live' images into their classes. Through these interactions, it gives UA an edge in recruiting future students.

Collectively, the renewal initiative offers the infrastructure to ensure UA's preeminent leadership in education and research to support the state's growing workforce needs, evident in the burgeoning aerospace and defense employers in Huntsville, as an example. Renewal of this scale will have a generational impact in the scope of education, research, and facility capabilities unmatched in the southeast region and nation.

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

   If yes, list key members of user group:

   - Dr. Gregory Thompson – Director
   - Dr. Robert Holler – Manager
   - Dr. Sanghamitra Deb – Materialization Characterization Specialist
   - Dr. Illias Bikmukhametov – Materialization Characterization Specialist
   - Johnny Goodwin – Instrumentation Specialist
   - Dr. Russ Mumper – Vice President for Research & Economic Development
   - Shawn Templeton – Project Manager

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

Source(s)	New Funds (FY2022)	Reserves	Status /7
Tuition			
Student Fees			
Investment Income			
Auxiliary Income • External • Internal			
Education Sales/Services • External • Internal			
Direct Grants			
Gifts			
Bonds			
Existing Net Assets			
University Central Reserves	$6,000,000		Pending
Research and Development Reserves	$3,957,745		Pending
Totals	**$9,957,745**		

/7 Approved, allocated, pending

Comments:
ORED will reimburse Central Reserves $600,000 per year for 10 years using indirect funds produced by the externally sponsored awards generated by this Initiative.

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

Operations and Maintenance (O&M) Annual Costs Projections			
Expense	**FY 2022 - 2023 Base Data** /8	**First Full /YR** Occupancy FY	**Successive Five (5) Year Projections** /9
Maintenance			
Elevator Service			
Building Repairs			
Building Services			
Electric, Natural Gas, Steam			
Chilled Water			
Water and Sewer			
Insurance			
Safety Support			
Operations Staff Support Funding			
Other			
Totals	**N/A**	**N/A**	**N/A**

/8 Latest Fiscal Year Data used as Base Year for Projections
/9 Combined Costs for next Five (5) Years of Occupancy

Comments:

AIME 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.

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

/9 Initial Full Yr. of Occupancy
/10 Next Five (5) Yrs. Occupancy
/11 Funds Reallocated from other sources
/7 Approved, allocated, pending

Comments:

AIME 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?

$ 8,500,000 85 % of Total Development Costs

Comments:

The project will replace multiple pieces of equipment which are beyond their functional service life.

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

Comments:

Based upon the current location of the instruments, the working group decided to continue to use the existing spaces in Bevill along with an additional space in AIME to meet the environmental conditions necessary for operating the proposed renewal instruments. Other locations (North Engineering Research Center) would require substantial renovation expenditures.

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:

The overall goals of the renewal initiative are well-aligned with the mission of the University in teaching, research, and service. The need to characterize materials occurs across multiple disciplines, from geology and chemistry to electrical and mechanical engineering.

TEACHING: UA offers classroom and laboratory instruction in multiple undergraduate and graduate courses where materials characterization instruments are essential components of the curriculum. The renewal initiative will ensure that these courses are able to access, in a consistent and reliable manner, a working instrument and in addition, the cutting-edge capability for hands-on instruction. To date, more than 134 new undergraduate and graduate students were trained in microscopy, supporting more than 91 faculty members on some 125 active, externally funded programs in calendar year 2021. Furthermore, more than 20% of UA's STEM undergraduates participate in Co-Op experiences. Enabling these students with these skills increases their competitiveness in securing top Co-Op opportunities.

RESEARCH: UA has an unprecedented growing enterprise, where such analytical instruments, used in the classroom, are equally applied to undergraduate and graduate research experiences and associated M.S. and Ph.D. degree graduations. Here, the renewal initiative will enable undergraduate students to develop skills which permit their pursuit of professional degrees through positive experiences in laboratory using the most advanced methods of characterization. Such outcomes will equally enable UA's graduate students to generate highly impactful publications, which garner positive peer recognition for the scholarly advancements made on the UA campus. Faculty that are engaged in the instrument core facilities have received >11,267 citations from their work, published >1706 papers in the past five years, and raised more than $15M annually in research awards specifically tied to access to these instruments to deliver on such programs. This funding supports the education of UA students through meaningful research experiences as they progress in their degrees.

SERVICE: These tools will engage the rising generation of K-12 Alabamian students into STEM through on-campus and remote access experiences to the instruments in conjunction with various outreach engagement programs. Such instruments support the economic development of the state's high-tech industries by having an academic partner, with the correct tools and training offerings, that solves their questions. Prior examples where these instruments have helped local industries include weld joints an automotive production (Mercedes) to identifying critical defects in engine blocks that are cast (Nemak) to novel micro-patterning devices for advanced Department of Defense and NASA programs (Dynetics), to name a few.

This renewal initiative is the catalysis to ensure Alabama's workforce and product development needs are met through assisting the University's collective teaching, research, and service missions. Collectively, this initiative will retain and attract the best students and faculty by offering them supporting infrastructure they

all need to reach their educational and research aspirations.

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

Comments:

The Renovations for Materials Characterization Service and Support of Academic Program strongly synchronizes with the Strategic plan and goals (https://www.ua.edu/strategicplan/goals) of the University of Alabama by the following:

1. *Provide a premiere undergraduate and graduate education that offers a global perspective and is characterized by outstanding teaching, high-quality scholarship, and distinctive curricular and co-curricular programs*.

   RE: The ability to move beyond in class, textbook instruction to a learning environment where the students operate high-tech instruments that augment this instruction provides a powerful and impactful experience, both at the undergraduate and graduate level. The renewal initiative aims to ensure that UA students have access to the most advanced instruments, which are integrated into several designated undergraduate and graduate level courses, to meet the objective of enhancing the educational and research experience for the UA student. To that end, efforts are now underway to create certificates that certify individuals in the operation and data analysis methods for these instruments. As a result, UA will be the second university (after San Joaquin Delta College, CA) in the nation to offer this accreditation.

2. *Increase the University's productivity and innovation in research, scholarship and creative activities that impact economic and societal development*.

   RE: This initiative seeks to revitalize materials characterization capabilities with the injection of state-of-the-art analytical equipment that will be a linchpin to multidisciplinary research across UA. Current materials characterization research and associated educational capabilities rely on instrumentation that is at or approaching end-of-serviceable lifetimes. Consequently, educators and researchers cannot reliably produce results that meet the high standards seen at equivalent peer-intuitions. This inconsistent instrument operation and technology gap created by the age of our instruments is a competitive disadvantage in assisting and engaging relevant state-based stakeholders such as federal laboratories (like NASA Marshall Space Flight Center) or industries (like Mercedes, Dynetics, Kratos SE, etc.). The education and research technology gap yields a physical inability to increase the University's productivity and innovation.

3. *Enrich our learning and work environment by providing an accepting, inclusive community that attracts and supports a diverse faculty, staff, and student body*.

   RE: 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 core materials characterization 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. A major means to recruit and retain the best and brightness is providing them the infrastructure that will enable them to be the best in their field. The Renovations for Materials Characterization Service and Support of Academic Program is the means to ensure a solid foundation to that end by fostering an enriching, learning and work environment that supports faculty, staff, and the student body.

4. *Provide opportunities and resources that facilitate work-life balance and enhance the recruitment and retention of outstanding faculty and staff*.

RE: Outstanding faculty and staff are critical to the success of any major research institution. To enable this success, this renewal initiative seeks to provide the most modern equipment to guide education and research. The lack of such core infrastructure, particularly as our current instruments lag in technology and are frequently inoperable, is a deterrent to retain outstanding faculty and staff. Frustration builds and opportunities elsewhere, where investments in similar instruments are now seen at the University of Florida, University of Tennessee, and Louisiana State University, pose a significant challenge to draw academic talent from the Capstone. Through the renewal initiative, the instruments proposed here will not only meet but exceed our regional peer-institutions making UA the envy in the capabilities it can then offer to students and faculty alike. Furthermore, modern instruments also provide 'peace-of-mind' for existing faculty and students in having confidence that they can meet program objectives or graduation deadlines, respectively, because the instruments are reliable. In doing so, a work-life balance occurs by eliminating the need to consistently scramble elsewhere to access required infrastructure.

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

Comments:

#2: *Make higher education accessible and diverse, prepare our students for success, and meet the workforce needs of the State.*

RE: The Renovations for Materials Characterization Service and Support of Academic Program 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. 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 investment will be available to collegiate students as well as offer innovative means to engage the rising generation of students into STEM. The modern remote capabilities in these instruments will enable UA community outreach by directly 'streaming' images and data from the UA lab into the K-12 classroom. This will inspire such students into STEM and engage student demographics that are historically underrepresented in STEM. Collectively, these outcomes will increase the opportunities for STEM development for the rising generation of students in Alabama. This remote access will also be available for UA System academic labs that require specific education and/or research engagement on their campus.

The scholarship provided by this re-capitalization will ensure that the research done by undergraduate and graduate students along with their faculty mentors can solve some of the most difficult challenges the nation faces in energy, water, transportation, health, and national defense. These instruments give these individuals the correct infrastructure to analytically characterize the next-generation materials that answer these challenges, thereby providing Alabamian 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 solve the materials-orientated issues of tomorrow in each of these areas. UA will become a strategic partner for industries that solve these challenges by giving our students the infrastructure to obtain the best education in the nation. The results of which will reverberate in Alabama's high-tech workforce for a better and safer society.

#4: *Work to lead a unified approach to improving education at every level in Alabama.*

RE: The renewal initiative provides a substantial improvement in the educational infrastructure to train UA students. These new instruments enable direct, hands-on training that parallels higher

education lecture learning, bringing textbook ideas into tactile experiences for students. 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 with the renewal initiative, 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 analytical methods, providing the state with this necessary and needed workforce.

#3: *Be accountable for every dollar we receive while maintaining the highest standards of excellence in every program and endeavor*.

RE: As evident in the recapitalization initiative equipment costs, considerable effort and time has been given in securing partnerships that will provide UA the most advanced instruments at a price-point that is financially responsible. This has been achieved through diligent, hard work over the past two-decades where prior instruments, which are now at end-of-service lifetime, established a positive track record in both graduates and scholarship. For example, UA graduates the highest number of atom probe learned scientists and engineers that directly use this knowledge in their employment, with alumni hired at Intel, Knolls Atomic Power Laboratory, Apple, and the Army Research Laboratory, as examples. Through this type of workforce development, UA is viewed as a key contributor to these instrument vendors evident by the discounts provided in response to our proposed renewal initiative.

#6: *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*

RE: UA's analytical materials infrastructure has long been the envy of peer-institutions. This began with the investment for the state's first ever focus ion beam (FIB) microscope and, at that time, a modern transmission electron microscope (TEM) - *circa* 2005. This was followed by a strategic investment to acquire the first local electrode atom probe for any university in the southeast – *circa* 2006. While these investments elevated the educational and research stature of the UA System for nearly twenty years, in more recent times, peer institutions such as the University of Florida, University of Tennessee, and Louisiana State University have acquired more modern and advanced analytical instruments. This has now allowed them to propel their students and faculty to new educational and research opportunities.

Through The Renovations for Materials Characterization Service and Support of Academic Program**,** UA, along with UAB and UAH, who also rely on these instruments for their research programs, will reclaim dominance as the preeminent analytical education and research institution in the southeast, if not nation. It is the collective suite of instruments where this claim is substantiated. The renewal initiative will not only replace older capabilities but bring in the newest, state-of-the-art instruments to study materials down to the size of individual atoms, where only national laboratories rival such instrumentation. This provides a truly transformative opportunity for the UA System to not only move to the front of the line but to separate itself from its peers, and in doing so, provide our students an unparalleled education.

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

Comments:

Many of the analytical materials characterization equipment used for UA's education and research goals are more than two decades old and experience significant downtime. This disrupts course instruction, slows deliverables to contracts and grants, and produces low morale among students, faculty, and staff that rely on these instruments. The failure to approve this project would only exasperate these issues, which can only be solved through a recapitalization of this equipment. All the potential educational, research, and outreach development expansions on and off campus are dependent on acquiring the new equipment capabilities.

If unable to acquire this equipment and renovate the space for them, it increases the likelihood of not being able to retain the best talent at UA nor recruit the best talent to the campus. Prospective undergraduate and graduate students, as well as the faculty with whom they may choose to work, will be underwhelmed by not having the show-case education and research space that draws them to a preeminent research university, particularly if they visit and compare UA to neighboring institutions. Furthermore, the instrument prices are based on current market and partnership projections; delay would jeopardize the ability to achieve the acquisition for a suite of instruments that enables the distinction in capabilities discussed above.

THE UNIVERSITY OF ALABAMA® | Division of Finance and Operations
Vice President

August 10, 2022

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

Trustee Karen Brooks
Chair, Physical Properties Committee
2555 14th Street, East
Tuscaloosa, AL 35404

RE: Request for Waiver of Consultant Selection Process
Renovations for Materials Characterization Service and Support of Academic Programs
UA Project #252-23-3028/249-23-3033

Dear Dr. Keith and Trustee Brooks:

The University of Alabama ("University") is requesting a Waiver of the Consultant Selection Process for the Renovations for Materials Characterization Service and Support of Academic Programs ("Project") to be located at the Alabama Innovation and Mentoring of Entrepreneurs Center and the Tom Bevill Building respectively.

The University proposes to utilize Williams Blackstock Architects ("WBA") of Birmingham, Alabama as the principal design firm for the Project. The services of WBA are proposed due to their substantial knowledge base gained over the course of development for the Project and their commitment to deliver the Project by Fall 2023. Based on their experience with the program, and extensive knowledge of the unique equipment involved, WBA's participation is critical to the success of the project. Further, WBA's familiarity and knowledge of the existing facility and University's standards will facilitate an efficient design process and ensure coordination with the existing infrastructure, systems, finishes and materials. Utilizing WBA will ensure an efficient transition from planning to design.

Accordingly, the University has negotiated a design fee for the Project based on a reduction in the renovation factor and a credit of $15,000 for Laboratory/Instrument Room planning and overall design, resulting in a total discount of $23,100, or approximately 13% of the standard fee for the Project.

Cost of the Work		Percentage Fee for Building Group III		Renovation Factor		Additional Services		Credits		Fee
$1,125,000	x	7.2%	+	25%	+	$80,542			=	$181,792
$1,125,000	x	7.2%	+	15%	+	$80,542	-	$15,000	=	$158,692

The proposed fees represent a financial benefit to the campus and a savings of $23,100, or approximately 13% of the standard fee for the Project.

Note: given the special nature of the equipment, and the unique and stringent environmental requirements necessary for operation, the Additional Services would be required for any design firm executing this project.

Approval is hereby requested for:

1. Waiver of Consultant Selection Process.
2. Williams Blackstock Architects, of Birmingham, Alabama, as the design service provider for the Project at a negotiated design fee based on 7.2% of the cost of construction plus a 15% renovation factor and $80,542 for additional services less credits in the amount of $15,000.
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.

Sincerely,

Matthew M. Fajack
Vice President for Finance and Operations
and Treasurer

MMF/ccj

pc: Michael Rodgers
Tim Leopard
David Jones
Jessica Morris

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☒ Recommended for approval. No Physical Properties Committee review required.
☐ 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

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☒ Recommended for approval. No Physical Properties Committee review required.
☐ Not Recommendation for Approval. Submit to Physical Properties Committee.

DocuSigned by:
Karen P. Brooks
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Trustee Karen Brooks, Chair for Physical Properties Committee

RENOVATIONS FOR MATERIALS CHARACTERIZATION SERVICE AND SUPPORT OF ACADEMIC PROGRAMS

LOCATION MAP