

Kansas State University

Department of Geology

Relocation Feasibility Study

PROGRAM

2023 11 17

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Management



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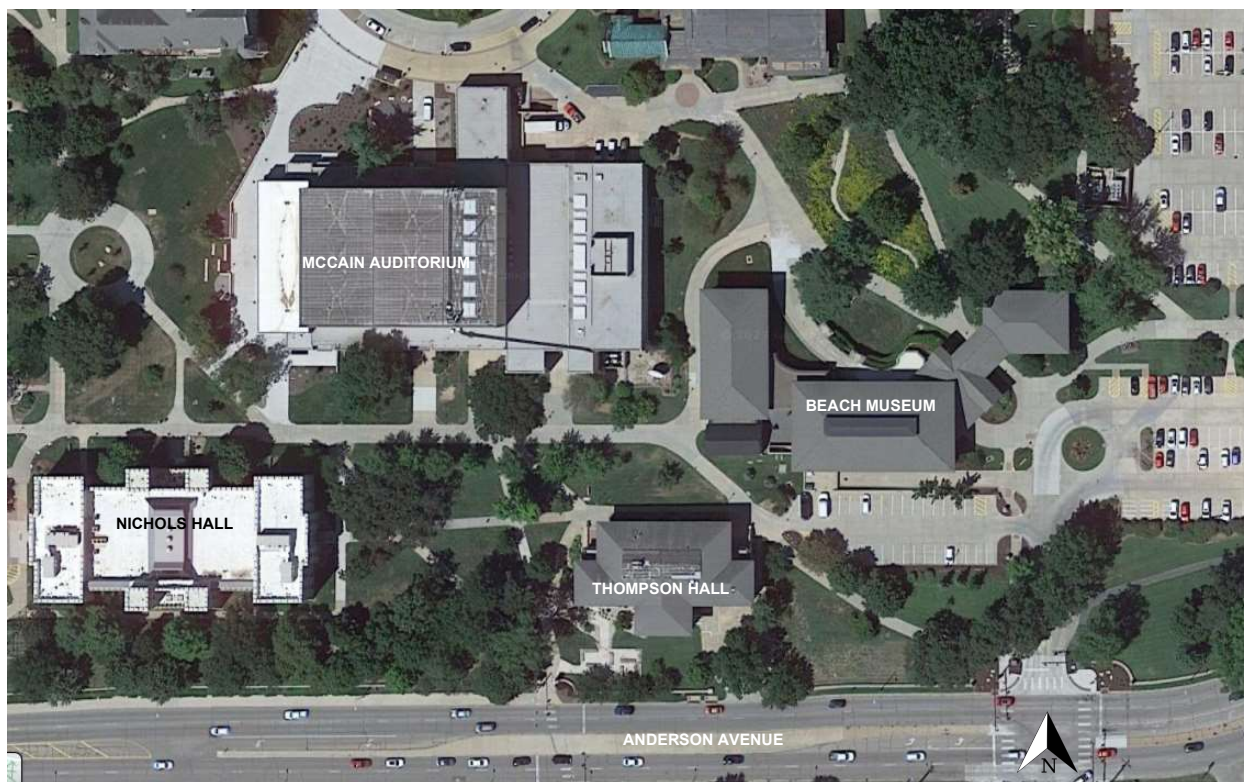
Introduction/Statement of Need

In order to further support current board initiatives of improved space utilization and consolidation the university is proposing the relocation of the department of Geology to existing space on main campus to allow for the renovation and re-purposing of Thompson Hall. Thompson Hall has a significant amount of deferred maintenance and renovating the building would allow the university to bring the building into code and ADA compliance. This would also assist the university in a long term goal of vacating another campus buildings with high deferred maintenance thus reducing our overall campus foot print as well as improving space utilization across campus.

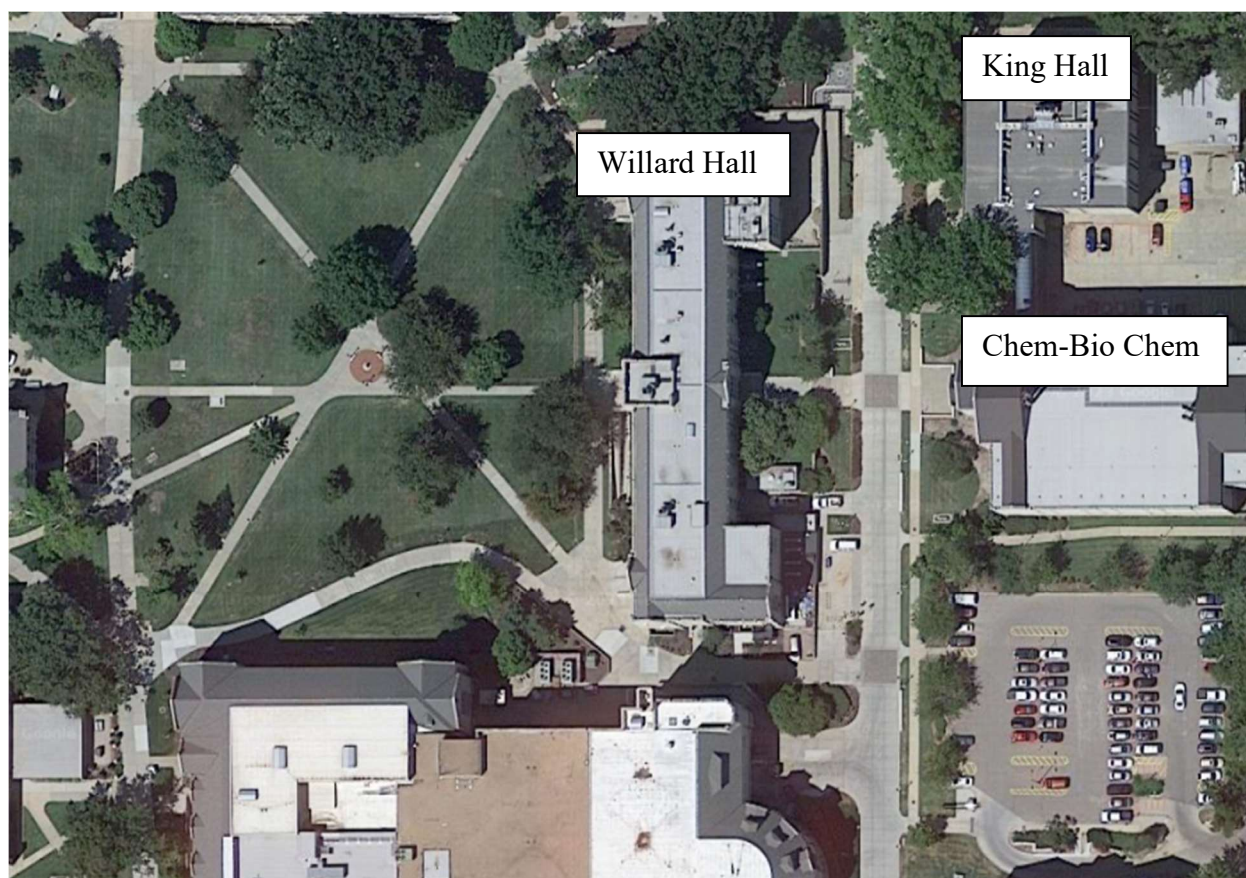
The Geology Department is primarily located in Thompson Hall which includes space for instruction, research, department and faculty offices, GTA space, materials and sample storage, and research support facilities. The department also occupies four rooms in Nichols Hall that would be vacated for other uses and relocated to be near the remainder of the department spaces.

The university has identified Willard Hall and the Chemistry/Biochemistry/King complex as having space to accommodate Geology's needs.

Existing Department Spaces are in Thompson and Nichols Hall



Relocated Department Spaces in Willard Hall and CBC/King Hall



Project Description

The north end of the lower level of Willard Hall can be made available for the Geology Department by consolidating less utilized spaces in the Department of Art.

Approximately 7,564 square feet is available. A portion of this space will be needed for one art studio and office. This space is approximately 500 sf, leaving approximately 7,000 sf for Geology.

Willard Hall will be renovated to accommodate teaching labs, outreach space, sample storage, work areas, GTA offices, faculty offices, and Faculty research labs that only require computers.

Consolidation of space in the Chemistry Department has allowed for additional space to be available for Geology in the Chemistry/Biochemistry building. The first floor has approximately 5,280 square feet available. This area is currently outfitted with chemistry labs. Much of this lab infrastructure is intended to remain for reuse in the proposed Research labs. In addition to the research lab spaces, this floor can accommodate a student study area and Geology department displays. An existing shared Instrumentation Lab has space available within it for two pieces of equipment for Geology. This space has the right environmental and structural conditions to support the needs of these instruments. There is also the opportunity to share the Student Lounge space, and Lactation space. On the second floor an area of 526 sf has been made available for graduate labs or storage.

In King Hall, which is connected to the Chemistry/Biochemistry Building via an interior bridge walkway, a chemistry lab space of approximately 1,259 sf, and a space with access to exterior loading areas of approximately 1,800 sf have also been freed up for use by Geology.

The unique needs of the Geology Department can be accommodated by these identified spaces, due to specialized needs such as fume hoods, water sources, stable floors, and access to the exterior among others. Finish upgrades in the relocated spaces will be included, as applicable.

Mechanical/Electrical/Plumbing Requirements

Willard Hall

HVAC

The existing HVAC system in the area consists of chilled water fan coil units and steam radiators. There is a chilled water main that runs down the hallway that can be utilized for cooling. There is not a mechanical ventilation system in the area. Operable windows are utilized for code ventilation.

The proposed HVAC system would be to install new 4-pipe fan coil units and connecting only the chilled water piping in this project. The hot water coil would be capped for future use with a larger building renovation that would utilize a hot water system. The existing steam radiators would be reused or replaced in certain locations depending on the space layout. Small dedicated outside air units will be added to provide ventilation. The ductwork would be routed to existing window locations to avoid new penetrations.

Plumbing

There are various existing sinks and plumbing within the proposed renovation areas. Domestic hot water is generated from a central domestic hot water heater.

Plumbing will be extended to new sinks in the lower level labs and 1st floor break room. Some amount of floor slab cutting will be required depending on the final layout.

Electrical

The existing receptacle power in the area is served from several distribution panels. Existing capacity exists within those panels for the remodeled space. Receptacles will be relocated and added to accommodate the new layout and power needs.

Lighting

The existing lighting is a combination of fluorescent lay-in fixtures and suspended fixtures. All lighting is controlled with manual on/off switches. The existing lighting will be replaced with LED fixtures. Architectural lay-in fixtures will be used for areas with lay-in ceilings. Suspended linear fixtures will be used for areas without ceilings. All controls will be upgraded to meet current code to consist of vacancy sensors and dimmers.

Fire Protection

The existing building has a full fire alarm system and is not fire sprinkled. The existing fire alarm devices will be relocated and new devices will be added to accommodate the new layout. Any new devices will be extended to the existing head end.

King Hall

HVAC

The existing HVAC system in the area consists of individual 4-pipe fan coil units and a central exhaust and makeup air system.

The proposed HVAC system would be to reuse the existing fan coil units and potentially add a new unit for the modified space. The exhaust system will be modified to accommodate the new rock prep and rock cutting equipment.

Plumbing

There are various existing sinks and plumbing within the proposed renovation areas. Domestic hot water is generated from a central domestic hot water heater.

Plumbing will be extended to new sinks in each of the labs. Some amount of floor slab cutting will be required depending on the final layout.

Electrical

The existing receptacle power in the area is served from several distribution panels. Existing capacity exists within those panels for the remodeled space. Receptacles will be relocated and added to accommodate the new layout and power needs.

Lighting

The existing lighting is a combination of fluorescent lay-in fixtures and suspended fixtures. All lighting is controlled with manual on/off switches. The existing lighting will be replaced with suspended linear LED fixtures. All controls will be upgraded to meet current code to consist of vacancy sensors and dimmers.

Fire Protection

The existing building has a full fire alarm system and is not fire sprinkled. The existing fire alarm devices will be relocated and new devices will be added to accommodate the new layout. Any new devices will be extended to the existing head end.

Chemistry/Biochemistry Building

HVAC

The existing HVAC system in the area consists of individual 4-pipe fan coil units and a central exhaust and makeup air system.

The proposed HVAC system would be to reuse the existing fan coil units and potentially add a new unit for the modified space. The existing exhaust system will be used for the general-purpose fume hoods. A separate exhaust system and hoods will be added for the HF hoods.

Plumbing

There are various existing sinks and plumbing within the proposed renovation areas. Domestic hot water is generated from a central domestic hot water heater.

Plumbing will be extended to new sinks in each of the labs. Some amount of floor slab cutting will be required depending on the final layout.

Electrical

The existing receptacle power in the area is served from several distribution panels. Existing capacity exists within those panels for the remodeled space. Receptacles will be relocated and added to accommodate the new layout and power needs.

Lighting

The existing lighting is a combination of fluorescent lay-in fixtures and suspended fixtures. All lighting is controlled with manual on/off switches. The existing lighting will be replaced with LED fixtures. Architectural lay-in fixtures will be used for areas with lay-in ceilings. Suspended linear fixtures will be used for areas without ceilings. All controls will be upgraded to meet current code to consist of vacancy sensors and dimmers.

Fire Protection

The existing building has a full fire alarm system and is not fire sprinkled. The existing fire alarm devices will be relocated and new devices will be added to accommodate the new layout. Any new devices will be extended to the existing head end.

Space Projection / Numeric Program

The following table lists the proposed rooms for the Department of Geology

Numeric Program					2023 11 17				
Existing Rm No.	Space Name	Quan	NSF ea.	Total	Notes	Quan	NSF ea.	Total	Notes
Administration									
108	Main Office	1	326	326	files, 1 admin, 1 PT student, waiting, display	1	350	350	files, 1 admin, 1 PT student, waiting, display
108A	Chair's Office	1	251	251	Includes small conference for 6, work area, storage, display	1	251	251	Includes small conference for 6, work area, storage, display. Separate entrance, acoustic privacy
108B	Chair's Office Storage	1	18	18	research materials	1	18	18	research materials
108C	Workroom	1	59	59	computer workstation, copier, office supplies	1	100	100	plotter, computer workstation, copier, office supplies, staff and faculty mailboxes. Connected to Main Office
108D	Kichenette	1	44	44	kitchenette/dept. breakroom, staff and faculty mailboxes	1	100	100	kitchenette/dept. breakroom
102	Secure Sample Storage and Plotter	1	117	117	plotter & secure sample storage. Samples = 160 cu ft. (32'd x 120'w x 72' h)				Separate into secure storage and work room
102A	Secure Storage Vault Closet	1	22	22	Secure Samples 53 cu ft. (32'd x 48'w x 60'h)				Secure Samples to be located in locked cabinets included in the instructional samples storage room
208	Conference Room	1	466	466	Departmental Conference/Classroom space for presentations. Seats 14	1	542	542	Departmental Conference/Classroom space for presentations to 25 people
208A	Kitchenette	1	20	20	kitchenette to serve conference room. Sink, coffee pot, small counter				locate nearby breakroom or provide small coffee bar area for conference room
SUBTOTAL Administration				1323				1361	
Faculty Offices									
RESEARCH FACULTY									
104	Office	1	218	218	Dr. La Croix	1	130	130	Dr. La Croix
105	Office	1	218	218	Dr. Raef	1	130	130	Dr. Raef
107A	Office	1	177	177	Dr. Brueseke	1	130	130	Dr. Brueseke
204	Office	1	206	206	Dr. Kirk	1	130	130	Dr. Kirk
205	Office	1	225	225	Dr. Adam	1	130	130	Dr. Adam
207A	Office	1	126	126	Dr. Goldberg	1	130	130	Dr. Goldberg
207B	Office	1	207	207	Dr. Spencer	1	130	130	Dr. Spencer
212A	Office	1	200	200	Dr. Gahanbrian	1	130	130	Dr. Gahanbrian
NEW	Office					0	130	0	
INSTRUCTIONAL FACULTY									
003	Advising Office	1	234	234	Includes seating for four, Dr. Gura	1	130	130	Includes seating for four, Dr. Gura
202	Office	1	126	126	Dr. Gad	1	110	110	Dr. Gad
208B	Office	1	118	118	Dr. Lambert	1	110	110	Dr. Lambert
POST DOCS & VISITING SCIENTISTS									
207C	Office	1	118	118	Visiting Scientist Work Area	1	130	130	Shared office for two visiting scientists
212B	Office	1	243	243	Shared office for two Post Docs				
203	Office	1	131	131	currently vacant	1	130	130	Post Doc Office
211	Office	1	351	351	currently vacant	0	130	0	
SUBTOTAL Faculty Offices				2898				1650	

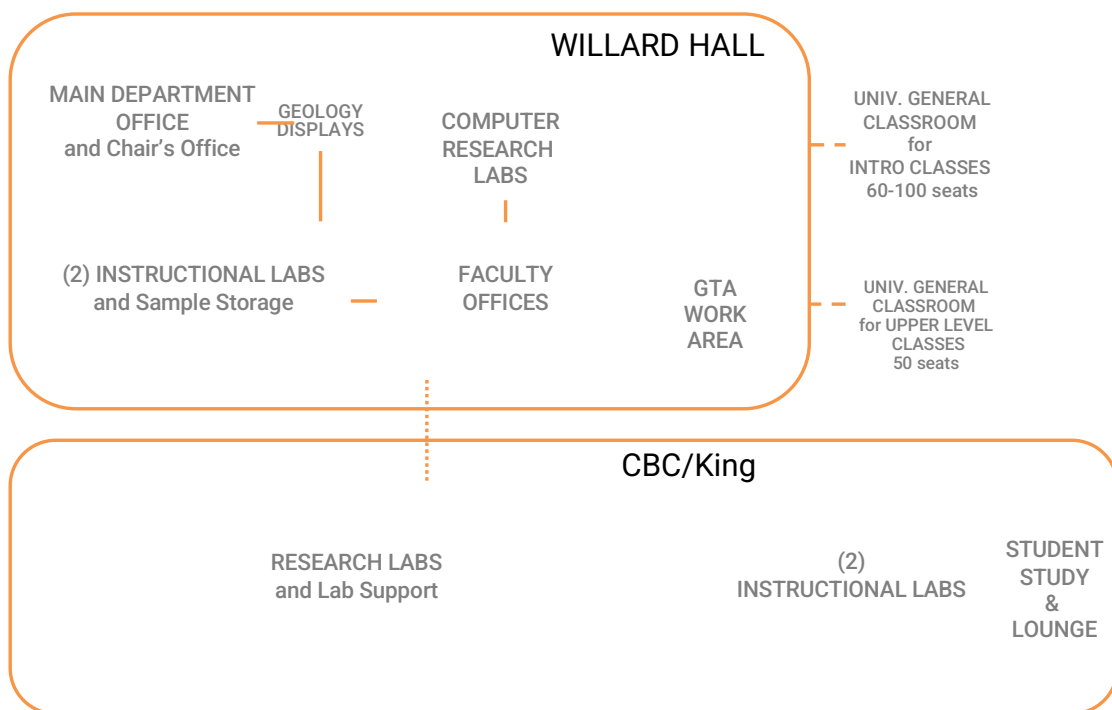
Existing Rm No.	Space Name	EXISTING			PROPOSED INITIAL PHASE		
		Quan	NSF ea.	Total Notes	Quan	NSF ea.	Total Notes
Academic Home							
201	Student Study/Lounge	1	562	562 Lounge with kitchenette and recreational and social seating	1	340	340 Open Study Area
	Study Alcoves				1	488	Shared with Chemistry Department, includes kitchenette and fridge
	Study Rooms						
N016	GTA Work Area	1	871	871 open workstations	2	293	586 12 Shared Workstations for 18 students
CR101	Historic Display Cabinets	1	101	101 9' tall glass fronts x 20'd x 61LF historic cabinets	1	101	101 9' tall glass fronts x 20'd x 61LF historic cabinets at entry to Department and along hallway by Faculty Offices and Instructional Labs. These displays are used for instructional purposes.
CR101	Instructional Displays	1	30	30 24 LF Display cases and maps	1	30	30 24 LF Display cases and maps in hallway near Into Geology Lab. These displays are used for instructional purposes.
	SUBTOTAL Academic Home			1564			1057
University Classrooms							
101	Classroom		shared	1293 lecture seating for 60-100, intro level courses, needs access to samples		shared	1293 lecture seating for 60-100, intro level courses, access to samples
213	Classroom		shared	809 lecture seating for 52 for upper level lectures, some use of samples		shared	809 lecture seating for 52 for upper level lectures, some use of samples
	SUBTOTAL University Classrooms			2102			2102
Instructional Labs							
109	Intro Geology Lab	1	924	924 6 flexible tables, 18 students, map and sample storage, intro level classes, demonstration area for instructor.	1	924	924 6 flexible tables, 18 students, demo area for instructor, adjacent storage, includes sample storage and demonstration/equipment area plus sink
	Instrumentation Demonstration Area			does not exist today	0	750	0 Future
001A	Storage	1	50	50 Supplies for Geology 103 Kits			included in New Storage/Prep Room
216	Advanced Geology Lab	1	731	731 20 Lab stations in pods. Includes specialized microscopes, instructor station, lots of sample storage	1	755	755 20 Lab stations in pods. Includes specialized microscopes, includes sink and space to store samples, demo/presentation area for instructor
	Instructional Samples Storage & Prep Room	3	27	81 (6) storage cabinets exist outside classrooms and labs currently. They are 60 cu ft. each.	1	400	400 To replace out-of-classroom sample storage and secure sample storage. Instructional Sample Storage, 360 cu ft, Secure storage 288 cu ft. + FM supplies closet 20 sf and cabinet 60 cu ft. Also for Kit Prep Area
N019	Advanced Geology Lab	1	1226	1226 Flexible Table Lab for 20 students with sample storage. For Paleo Geology and Structural Geology courses.	1	1259	1259 Flexible Table Lab for 20 students. For Paleo Geology and Structural Geology courses. Sink demonstration area for instructor.
N021	Geology Computer Lab	1	1264	1264 15 dual monitor stations plus lecture area cannot be shared due to equipment	1	526	526 (CBC 210) 15 dual monitor stations, not shared. Needs instructor presentation support, etc. Lecture component to utilize shared university lecture room.
	SUBTOTAL Instructional Labs			4276			3864

Numeric Program					2023 11 17		
Existing Rm No.	Space Name	EXISTING			PROPOSED INITIAL PHASE		
		Quan	NSF ea.	Total Notes	Quan	NSF ea.	Total Notes
Research Labs & Support							
SHARED LAB RESOURCES							
001D	Rock Cutting Lab	1	520	520 Sink, ventilation	1	500	500 (King 003) Sink, Air filtration required
014B	Rock Prep Lab	1	235	235 Sink, ventilation	1	250	250 (King 003) Sink, Air filtration required
015	Fieldwork Staging Lab	1	978	978 Near exterior loading area	1	750	750 (King 003) Near exterior loading area
006	Computer Support Lab	1	109	109 3D printing	1	100	100 3D printing, etc. Near Dr. Ghanbarian's Computer Lab
014D	Geochemistry Lab	1	552	552 Geochemistry Research Lab plus Departmental Instructional Use. 5 pods, 10-12 students. 2 Fume Hoods, eyewash	1	727	727 (CBC 121) Geochemistry Research Lab plus Departmental Instruction. 10-15 student stations. 2 Fume hoods, sink, eyewash. Locate near Matt Kirk's Research Labs
103	XRD Lab	1	166	166	1	180	180 Integrate into Shared Instrumentation Room (CBC 128). Needs space around it to work, venting to exterior, temperature control, no vibration and space for it's chiller
103D	Chiller Room	1	44	44 chiller serves equipment above	1	44	44 dedicated cooling for XRD, include with above
103C	Raman Lab	1	118	118	1	166	166 Integrate into Shared Instrumentation Room (CBC 128). Needs Stable floor
012B	Microscopy Lab	1	198	198 Current equipment to be separated out for better access/uses.	1	120	120 (CBC 124) PetCatScan plus 3D microscopy. Move Reflected light microscope to Min/Pet Class Lab, and move CL equipment to its own space
NEW	Instrumentation Lab				1	235	235 (CBC 109) Cathodoluminescence. No natural light
N016A	Research Sample Storage	1	439	439 Research Sample Storage. Needs locking cabinets to separate out different project samples	1	481	481 (CBC 111) Research Sample Storage. Needs locking cabinets to separate out different project samples

Numeric Program				2023 11 17			
Existing Rm No.	Space Name	EXISTING			PROPOSED INITIAL PHASE		
		Quan	NSF ea.	Total Notes	Quan	NSF ea.	Total Notes
RESEARCH LABS							
	Geology Research Lab				1	235	235 (CBC 120) Future Chairperson Lab. Ideally fume hood and sink, but this space is flexible and could share fume hood elsewhere
	Geology Research Lab				1	409	409 Future Hydrologist Lab, Fume Hood, sink, needs to be near GeoChemistry Lab
	Microprobe Lab						
206	Computer Research Lab	1	182	182 Dr. Adam computer lab, needs 3 stations	1	130	130 Dr. Adam computer lab, needs 3 stations. Near Dr. Adam's Office
005	Computer Research Lab	1	224	224 Dr. Ghanbarian computer lab, 4 stations	1	300	300 Dr. Ghanbarian research, 8 computer workstations. Near 3D print lab and Dr. Ghanbarian's Office
210	Computer Lab	1	143	143 Dr. Ghanbarian computer lab, 4 stations			combined into one lab above
207	Computer Research Lab	1	152	152 Dr. Goldberg Research Lab, 2 computer workstations, microscopes, plus storage and display/whiteboard work area	1	170	170 Dr. Goldberg Research Dry Lab - microscopes, and 2 workstations plus storage and display/whiteboard work area. Near Dr. Goldberg's Office
013	Research Lab	1	143	143 Dr. Goldberg geochemistry lab	1	264	264 Dr. Goldberg Research Lab, include sink, fume hood
107	Petrology Research Lab	1	349	349 Dr. Brueseke Lab	1	481	481 (CBC 116) Dr. Brueseke Lab with storage closet and sample storage. Include 2 Fume Hoods and sink. 3 workstations with computers and microscopes. Needs access to an HF Hood
106	Geochemistry Research Lab	1	171	171 Dr. La Croix Lab, adjacent to the XRD and Raman	1	177	177 (CBC 123) Dr. La Croix Lab, Adjacent to XRD and Raman, and Pet/Cat/Scan. Fume Hood and sink
002A	Optically Stimulated Luminescence (OSL) Lab Suite	1	63	63 entrance vestibule to 3-room suite. See adjacent separate spaces listed below	1	62	62 entrance vestibule to 3-room suite. See adjacent separate spaces listed below
002B	Lab with Hood	1	189	189 Lab with HF Hood - red or amber light	1	189	189 Lab with HF Hood - red or amber light
002C	Lab Support	1	114	114 Lab Support - white light	1	110	110 Lab Support - white light
002D	Instrumentation Lab	1	123	123 Instrumentation Lab - red or amber light	1	120	120 Instrumentation Lab - red or amber light
012	Geochemistry Research Lab	1	166	166 Dr. Kirk Geochemistry Research. Needs to be nearby the Shared Geochemistry Lab	1	727	727 (CBC 117) Dr. Kirk Geochemistry Research. Adjacent to Shared Geochemistry Lab. Needs sink and Fume Hood
001B	Lab Support	1	20	20 Dr. Kirk Remote Storage			combine into one lab above
012A	Lab Support	1	212	212 Dr. Kirk Support			combine into one lab above
014	Lab support	1	120	120 Dr. Kirk Support			combine into one lab above
014A	Lab Support	1	235	235 Dr. Kirk Support			combine into one lab above
002F	Geophysics Research Lab	1	183	183 Dr. Raef Research	1	248	248 Dr. Raef Research
004	Geophysics Equipment Storage	1	84	84 field equipment for Dr. Raef geophysics research	1	91	91 field equipment for Dr. Raef geophysics research, needs easy access to exterior
	SUBTOTAL Research Labs & Support			6232			7266

EXISTING				PROPOSED INITIAL PHASE			
Existing Rm No.	Space Name	Quan	NSF ea.	Total Notes	Quan	NSF ea.	Total Notes
Building Support							
001B	Building Storage	1	179	179 Shared Lab and Departmental Equipment Storage	1	180	180 Shared Lab and Departmental Equipment Storage
009A	Storage	1	129	129 unused			
	SUBTOTAL Support			308			180
SUBTOTALS							Delta
	Administration			1323			1361 38
	Faculty Offices			2898			1650 -1248
	Academic Home			1564			1057 -507
	University Classrooms			2102			2102 0
	Instructional Labs			4276			3864 -412
	Research Labs & Support			6232			7266 1034
	Building Support			308			180 -128
	TOTAL NSF			18703			17480 -1,223

ADJACENCIES



Budget

Estimate of Project Costs		
Construction		
(Construction Cost, etc.)		\$3,134,745
Design Fees		
(Architect, Engineer, other Consultants)		\$314,000
FF&E		
(Furniture, A/V, equipment, etc.)		\$400,000
Relocation		
(moving / remediation costs)		\$400,000
Contingency		
(%)		\$521,255
Miscellaneous Costs		
(Administrative fees, internal labor, etc.)		\$100,000
Foundation Fees		\$110,000
Building Sustainability Fund		\$220,000
Total		\$5,200,000

Funding

The project will be funded with a combination of capital renewal, philanthropic and university funds.

Maintenance

Annual costs of operations, maintenance and utilities are estimated as follows:

Description	Cost/sqft	Total
Operations and Maintenance	\$3.23 x 15,694 SF	\$50,691.62
Utilities	\$3.50 x 15,694 SF	\$54,929.00
Total Annual Cost		\$105,620.62

Timeline/Schedule

Board of Regents Program Approval: December 2023

Design Team Selection: March 2024

Design Phase: April 2024 – July 2024

Construction Documents and Project Approval to bid: August 2024 – November 2024

Bidding and Construction: Dec 2024

Occupancy: Fall 2025

APPENDIX

Existing Building Floor Plans
Willard and CBC/King Plans

