



UNIVERSITY AT ALBANY

# RESEARCH SPACE ALLOCATION GUIDELINES

October 15, 2016



# I. Introduction

*Public research universities initiate the fundamental research that drives scientific and technological discovery. They educate and train the skilled workforce of tomorrow. They prepare schoolteachers and faculty for the classroom. They equip the next generation of leaders with the knowledge, skills and empathy to lead a twenty-first century democracy. Most important, public research universities are stewards and repositories of human knowledge.... Today, confronted with reduced state investment, public research universities are forced to make difficult choices about institutional priorities.*

*The Lincoln Project: Excellence and American Public Higher Education  
from **Public Research Universities: Why they Matter**  
The American Academy of Arts and Sciences, 2015*

The University at Albany is committed to providing faculty members with sufficient and appropriate research space to support their professional activities and programs of research. Although research space is fundamental to the mission of the University, that space is a finite resource. Given the range of research activities conducted at an institution such as UAlbany there are an equally wide range of types of research space required to support those activities. For those scientists currently active at the University, as well as for students and staff, there is a well-documented shortfall of research space generally as well as a shortfall of contemporary “state-of-the-art” research spaces of many kinds. Only a fraction of the research space portfolio can be described as competitive or well suited to contemporary research practices. Furthermore, there is often a mismatch between the infrastructure requirements of research activities conducted and the services provided by the spaces in which they are accommodated.

In response to these three concerns, the University initiated a broad-reaching project to develop research space allocation guidelines intended to address each of these pressing issues. The guidelines will assist in allocating quantities of space based on research activity and, by extension, assist in prioritizing the allocation of capital resources used for renovating or expanding the research portfolio towards the kinds of spaces currently absent or most obsolesced. In addition, the guidelines will provide a planning tool to assist the University in placing research in appropriately matched facilities.

These guidelines are rooted in and responsive to the existing conditions of UAlbany’s research facilities spread between the Uptown, Downtown and East Campuses. This document begins with an overview of the University’s existing portfolio of research spaces to set the context for the distribution of new space based on the availability and suitability of current research facilities.

Based on that context the University’s Facilities Strategic Planning Council (FSPC) has put forth a series of yardsticks that will guide meting out that valuable and limited resource, presented in these draft Research Space Allocation Guidelines. ***The primary purpose of the guidelines is to support faculty research and scholarship and to assist the University to make informed decisions concerning finite resources.*** The guidelines are a living document that serve as a point of departure for discussions concerning how best to support the research interests of the University and its community.

Both the methodologies and parameters of each component will be developed and refined over time; at each step rendered more relevant and appropriate both to the University’s research needs and the available portfolio of research space. As a first step this document includes the umbrella set of guiding principles and a methodology for calculating an initial allocation to support research faculty based on their research activities, the equipment they use and the size and composition of their research teams. Over time, additional components will be added in stages, with input from a range of University

constituents. The next installment will set the parameters that adjust the initial allocation reflecting the degree to which a given research venture strategically advances the University's priorities.

The application of research space allocation guidelines will advance faculty research by providing an adequate quantity of space to each activity within an overall context of limited available resources. Although this first effort has been characterized by vigorous debate and critique, the initiation of such a discussion and the compilation of this draft material has been received with support and enthusiasm. The FSPC looks forward to building on that enthusiasm: advancing the work that has been completed to date and committing to the sequential development of remaining components. This document will be used by the Office of Campus Planning to develop recommendations for space assignment as new facilities are developed (both renovation and new construction) and to provide a baseline for allocating research space to potential faculty. In the short term the University seeks to maximize the reach and effectiveness of its existing research portfolio. In the longer term, by carefully assigning research activity to the most appropriate spaces that are available, the University can use new construction dollars to create the kinds of research spaces that are currently absent from and cannot be supported by its existing research space portfolio.

## PROCESS

So that their development would be best aligned with University research practices a Research Space Allocation Guidelines Committee was convened by the Office of the Provost composed of representatives nominated by the Deans of all Schools and Colleges. In addition, the Committee included staff from the Office of Campus Planning, facilities personnel as well as the Assistant Vice Provost for Academic and Faculty Affairs. The consultant team began by surveying methodologies for allocating research space found at other institutions across a range of Carnegie classifications that were then compiled and presented to the Committee. Following a period of review, the Committee provided extensive and constructive feedback

to identify the principal components that should be included in a complete framework of guidelines for allocating research space at the University. Over a series of meetings the framework was formalized into the framework that is detailed in Section III.

Perhaps most importantly there was broad consensus across committee members that a set of robust guidelines would contribute significantly to the support of faculty research by meting out this limited resource to its maximum effect. Although differences of opinion were expressed related to the policies and procedures of its implementation, there was strong support across the Committee for the development of a transparent and public articulation of the connection between the allocation of research space and the support of institutional research priorities. In addition to identifying the parts and pieces of a complete set of guidelines, the Committee emphasized that, to be successful, these components must be integrated "of a piece" including three essential components: allocation, assessment and adjustment.

Additional discussions were held with representatives of the School of Public Health (SPH), the College of Engineering and Applied Sciences (CEAS) as well as the College of Emergency Preparedness, Homeland Security and Cybersecurity (CEPHS+C) given administrative changes taking place within each division over the course of the study. The feedback gathered from these additional discussions expanded and enriched the articulation of the taxonomy of research labs described in Section IV to ensure that the typologies would speak to and support the full range of current and anticipated research activities at UAlbany.

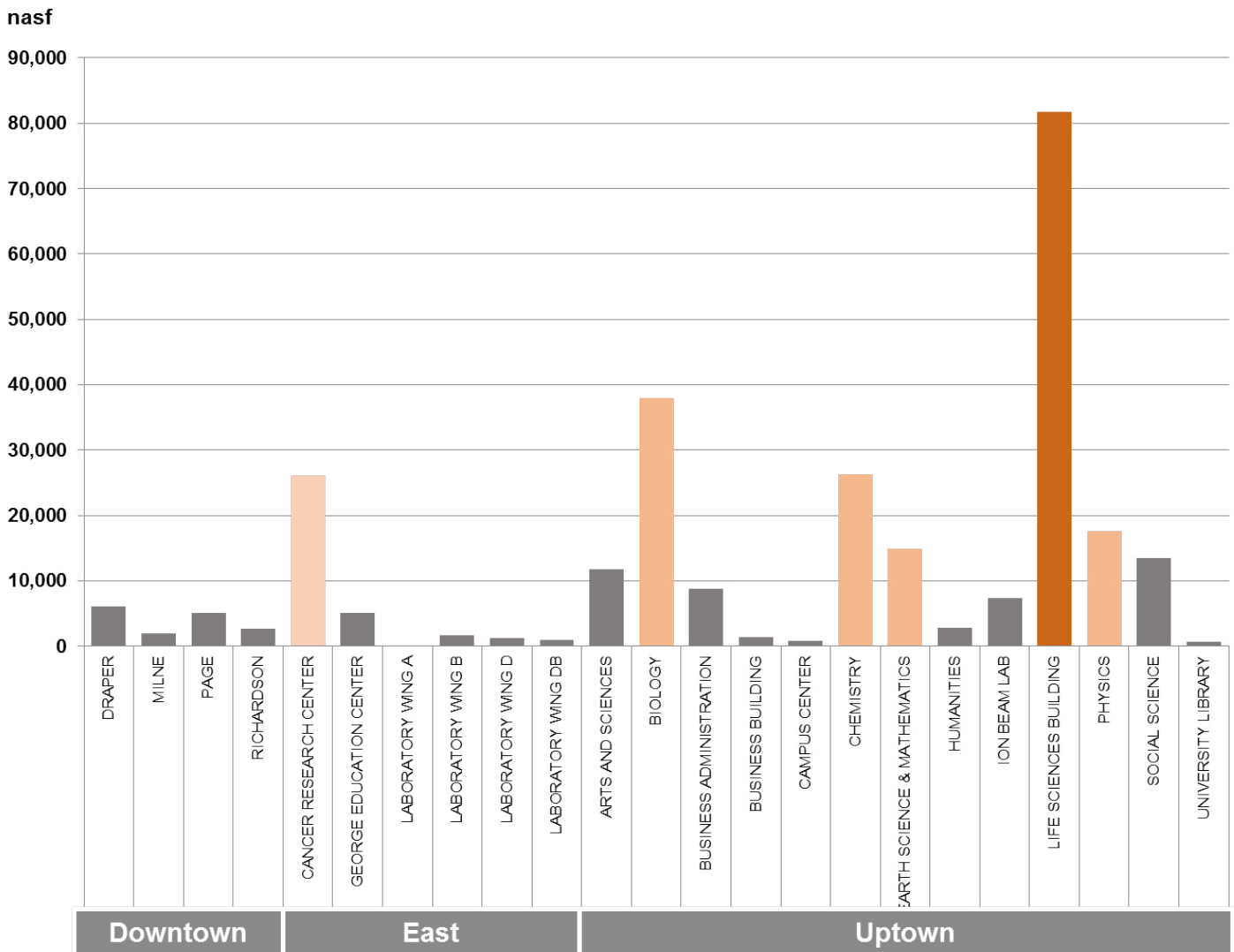
Following an additional period of committee review the framework and its component parts were advanced to the FSPC for additional review and comment. Based on feedback received from that body the guidelines were further refined and endorsed with the Office of Campus Planning authorized to publish both the framework and approved components so that they might serve to inform the future allocation of research space at the University.

## II. Campus Context

As it manifests across all divisions and departments faculty research takes place in a wide range of facilities. The University recognizes that place and location play key roles in successful research outcomes. An appropriate match between the kind of research conducted and the space in which it is accommodated is important and the quality of that research space must be of a caliber to support the research activity that takes place there. For these reasons the research space allocation guidelines are rooted in the current conditions of the University including the quantity, conditions and location of the available research space across the institution. In this way the distribution of future research space is informed by the current availability of the

resource so as to maximize the value of existing research space and available funding to renovate that space or to create new space.

Research activity takes place in almost all UAlbany facilities across the Uptown, Downtown and East campuses with about 280,000 nasf set aside specifically for research. As is detailed in the chart below, the majority of that research space is located within six facilities, four of them located on the Academic Podium. Although a complete conditions assessment of UAlbany's research portfolio is beyond the scope of this document, based on prior reports and studies it is possible to draw high-level conclusions that inform this study.



The bar chart above identifies the location of research space across the University's three campuses. One-third of the University's research space is in a single building (Life Sciences) while another third is distributed between four aging facilities on the Uptown Campus' Academic Podium.

Research space at the Downtown campus is predominantly configured for desktop-based social science research activities with no wet- or dry-lab based research. Given the recent founding of the College of Engineering and Applied Sciences, it may be necessary to accommodate additional engineering research facilities on the Downtown campus and it is anticipated these will be located in the former Schuylar High School. Given the floor plans of buildings such as Draper, Milne and Richardson there is limited ability to assemble large quantities of contiguous floor area for lab units that will support multiple occupants. In addition, the buildings' mechanical systems and limited laboratory service infrastructure place constraints on the kinds of research activities that can be supported.

East Campus research space is located across three buildings: the Cancer Research Center (CRC), the George Education Building and the former Sterling Winthrop (SW) laboratory complex. The majority of the space in the latter is occupied by external entities with only a modest quantity allocated to University research. The SW facilities have not seen significant upgrade or renovation aside from isolated investments made by hosted entities. Although collectively they encompass a significant quantity of research space, the conditions of the facilities including the exterior envelope, limited floor-to-floor height and double-loaded corridor floor plans make redevelopment both costly and logistically difficult. Research facilities in the George Education Center, home to the University's School of Public Health (SPH), include offices and team work spaces. The large quantity of open floor area is well-suited to the research groups that are housed there although the overall quantity of space available is limited. The large floor plate results in a great number of offices with no natural light or views. Most research space at the East Campus consists of contemporary, state-of-the-art wet laboratories in the CRC. These include both multi-bay open-lab layout research suites as well as

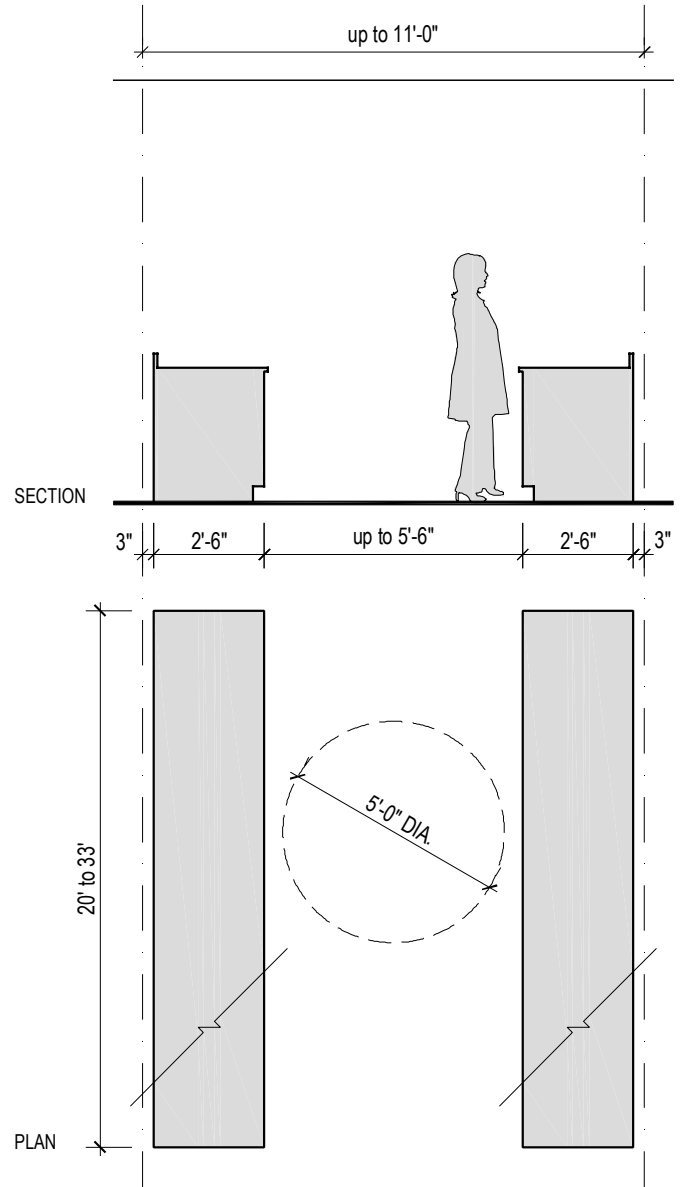
smaller environmental, instrumentation and procedure rooms to support specialized activities such as microscopy. The facility also hosts a large animal facility home to several colonies of rodents with ancillary support facilities and infrastructure. Additional wet lab research space for faculty affiliated with SPH is located at the Wadsworth Center at the NYS Department of Health.

The bulk of University research space is located at the Uptown campus and most of this space is housed within two facilities. The Life Sciences Research Building (LSRB) contains over 80,000 nasf of research lab space, almost one-third of the entire University research space portfolio. The building was completed in 2004 organized by 600 nasf modules of unitized research space with the 12,000 nasf open-lab RNA Institute fit out in 2015. Like the CRC, the LSRB includes a number of important core facilities such as an NMR core and chemical storage facility.

The remainder of research space uptown is housed within the Academic Podium that, with the exception of select improvements, has not seen significant infrastructure improvements since its construction in 1964. About 35% of the research space at UAlbany is housed within four podium buildings: Biology, Chemistry, Earth Science and Physics. Perhaps most importantly, the physical structure of the Podium is not well-suited to accommodating contemporary STEM research facilities. The 20-foot wide bay spacing creates inefficiencies when redeveloped for modern laboratory benches and fume hoods and, like the East Campus SW facilities, the limited floor-to-floor height renders the introduction of additional exhaust air systems problematic. Similarly, the double-loaded corridor system of circulation throughout the Podium divides each building in half resulting in floor plates too shallow for redevelopment as open shared wet laboratories and too deep to properly support collaborative team rooms.

## THE LAB MODULE

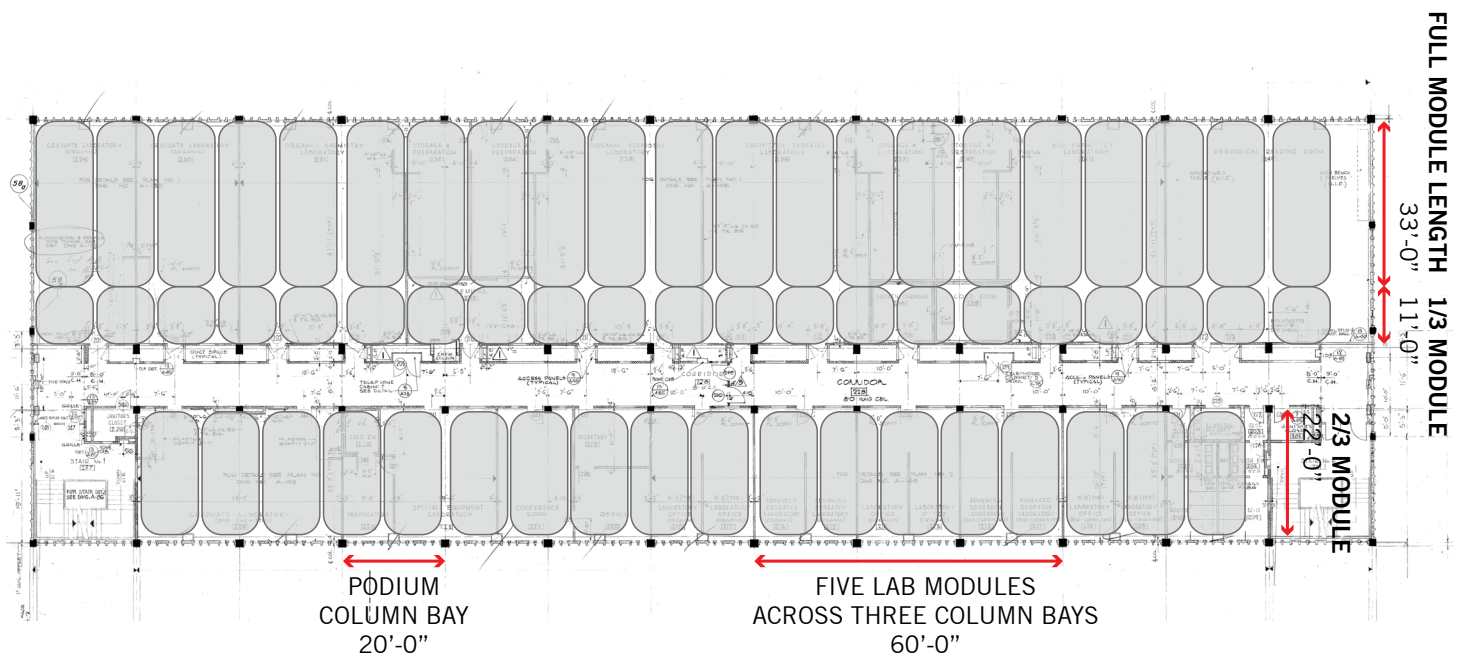
The lab module is a key unit in planning for research space allocation. A well-designed module provides flexibility and enables effective coordination of architectural and engineering systems measuring between 10'-6" and 11'-0" wide by 20 feet to 33 feet deep. While the width of the module is typically constant, the depth varies based on the lab function, context and location within a building. The operative feature of module width is the relationship between two opposite rows of casework (measuring 30 inches to 33 inches deep on either side) with a 5'-0" to 5'-6" clear aisle accounting for typical wall thicknesses. For the purposes of space planning the Research Space Allocation Guidelines establishes a recommended lab module of 330 nasf based on an assumed dimension of 11 feet x 30 feet. Lab support spaces that require isolation are allocated on a fractional basis (e.g., 110 nasf). The allocation of office or write-up space associated with research space is measured consistent with established University standards.



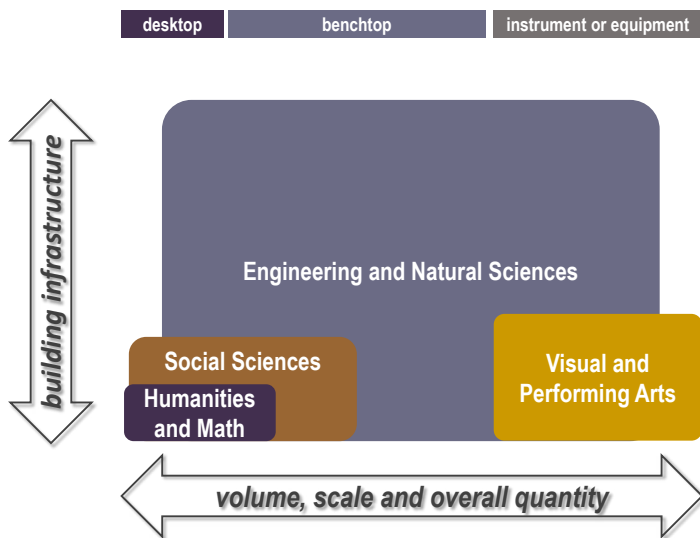
## VARIATION FOR PODIUM BUILDINGS

The structural characteristics of the Podium buildings present planning challenges. The 20-foot wide column grid of Podium buildings and the need to align lab modules and demising walls with existing mullions, result in lab modules that may be wider than 11 feet increasing the overall square footage allocated. Accounting for accessibility and service clearances, buildings on the Podium accommodate approximately five lab modules across three column bays. The resultant lab modules each have a wider center aisle that can be of benefit for select functions such as dry and engineering laboratories. When planning for the redevelopment of research space across the podium this impact of the building module on the planning framework must be accounted for with the appropriate translation of the planning module to the building layout.

Perhaps most importantly, this study takes as a base assumption that, even with complete renovation, the existing service chases, mechanical shafts, stairs and elevators are likely to remain in their current positions. The importance of the Durrel Stone design to the University's architectural legacy means the exterior features of the buildings will be preserved intact. In addition, the interior configuration of the podium buildings will be influenced by these structural features. As is demonstrated by the diagram to the right, most university research space needs falls within STEM departments. Redeveloping the Podium for laboratories to service these research activities will require a more generous planning module. Although highly functional labs can be created within the Podium they will inevitably be planned at a reduced occupancy and efficiency.







## THE LOCUS OF RESEARCH ACTIVITY

Although research at UAlbany occurs across all divisions and departments, for the purposes of mapping that research to its most appropriate location research activities are categorized within three frameworks based on the kinds of spaces they occupy. These include:

1. activities that take place primarily at the desktop,
2. research practices that take place on a benchtop with some specialized services, and
3. research for which a space must be carefully matched to support specific equipment or instrumentation.

Although a great deal of research activity takes place across these boundaries, as a practical matter given that principal investigators have a strong interest in keeping their research teams in close proximity, there is value in matching the research activities of a research team with the kinds of spaces they require to support that research activity.

At a high level, different disciplines occupy research space in different ways based on where and how they conduct their research. The diagram above provides a broad-brush mapping of UAlbany research as it manifests within thematic divisions. The most recent university-wide statistics available documenting the shortfall of research space on campus date from the 2011 Facilities Master Plan. Although that data does not reflect recent initiatives including the creation of new divisions such as CEPHS+C (Homeland Security) and CEAS it does provide valuable insights into the shortage of research space on campus to support existing faculty and to recruit new. Perhaps most importantly there are entire categories or types of research space that are largely absent from the University's portfolio and

these manifest within disciplines and practices that fall within key institutional initiatives such as engineering and the applied sciences as well as health sciences. While all research space is valuable, the scarcity of key types of research space underscores the importance of making careful and judicious allocations.

In addition, this study pays special attention to the relative quantities of research space occupied by different disciplines to inform the allocation of research space organized by activity. In terms of overall quantity, the demand for research space manifests disproportionately within the STEM disciplines and within that category, within the natural sciences including biology, chemistry and related fields. Although future initiatives may or may not occur within these disciplines, the bulk of the university's research space need will manifest in a need for wet- and dry-laboratory environments. Although all research space is valuable, laboratories equipped with high levels of engineering infrastructure, cost significantly more to build and even more to operate and maintain over their useful lives. As is evidenced by the conditions assessments of buildings within the Podium, this differential widens even more as buildings exceed their useful lives and extended efforts must be undertaken to keep them functional in support of their occupants. For both these reasons: the relative demand for and cost of wet- and dry-lab research environments, it is in the University's interests to be most careful with the allocation of such research space.

Through discussions with the Committee and other University representatives it became clear that the absence of research space allocation guidelines within a context of research space scarcity has led to a cultural response of hoarding space. The lack of an organized set of policies related to research space management has created a vacuum in which resources are not conserved.

The University's physical space inventory (PSI) is not currently configured to identify space assignment by PI or staff occupant nor is shared space measured across PIs or across departments. However, the data does support tracking space across campus by department code allowing for an approximation of space assignment by discipline and typology. The University conducts periodic space audits to confirm space utilization is consistent with institutional goals and in connection with Federal reporting guidelines. Going forward, in an effort to more effectively measure the effectiveness of future space allocations, there may be a value in establishing and maintaining a system of tracking space assignment by PI team.

By mapping the existing types of research space available the University can make more informed choices relative to the types of space that should be provided in the future. Furthermore, such information provides a framework to guide situating different kinds of research in available and anticipated campus facilities.

### III. Guiding Principles and Framework

Research space allocation guidelines provide a framework for a university to make strategic decisions concerning a limited and valuable resource. Discussions with the University Committee concluded that a complete set of guidelines should include the following three components:

1. establishment of an initial quantity of space to be allocated based on an identified strategic objective,
2. assessment of the effectiveness of that allocation to achieve the stated objectives, and
3. fine-tuning and modifying that allocation to realign space allocation with institutional priorities.

Furthermore, it was determined that there are two complementary facets to each of these three components. On the one hand there are

the methodological specifics or metrics: for example, the numerical quantities of space to be distributed. On the other there are the supporting parameters that shape those specifics: for example, the criteria by which those space metrics are developed.

The complete set of research space allocation guidelines will have three components identified in the diagram on page 9. As noted, each component consists of a methodology that describes how it is applied and supporting parameters that shape how it is developed and administered. It can be expected that both the methodologies and parameters will evolve and be refined over time to keep them relevant to the University's research needs and the context of the available portfolio of research space.

## Research Space Allocation Guidelines Framework

### GUIDING PRINCIPLES

See pages 10 and 11 for complete statement of principles

#### Setting an Initial Allocation

An initial quantity of space is allocated based on the type of research conducted and the anticipated number and types of research staff associated with the principal investigator (PI). Units must first investigate accommodating research space needs within their Division's space allocation. Only as a last resort, shall a Space Request Form be submitted to the Office of Campus Planning to develop recommendations to present to the University Strategic Space Council for consideration.

1

METHODOLOGY		SUPPORTING PARAMETERS	
<p><b>ACTIVITY / EQUIPMENT</b></p> <p>+</p> <p><b>PEOPLE</b></p>	<ul style="list-style-type: none"> <li>A laboratory typology is selected from the taxonomy based on research activities</li> <li>Office and write-up space as well as unit quantities of laboratory area are allocated based on the size of the PI group</li> <li>The space assessment is adjusted based on specialized equipment used</li> </ul>	<p><b>PROFILE</b></p> <p>+</p> <p><b>FUNDING</b></p>	<p>Space allocations are modified based on the following:</p> <ul style="list-style-type: none"> <li><b>TBD:</b> Expectations research will advance the profile of the institution</li> <li><b>TBD:</b> Anticipated quantity and source of grant support</li> <li><b>TBD:</b> Consistency with strategic research priorities</li> </ul>

#### Assessment of that Space Allocation

Space assignments will be periodically audited to determine the degree to which research goals are met.

2

METHODOLOGY		SUPPORTING PARAMETERS	
<ul style="list-style-type: none"> <li><b>TBD:</b> Frequency of assessment</li> <li><b>TBD:</b> Which parties will conduct assessments and to whom they will report</li> </ul>		<ul style="list-style-type: none"> <li><b>TBD:</b> Metrics used to determine space utilization relative to the initial request</li> <li><b>TBD:</b> How assessments will be reviewed and confirmed</li> </ul>	

#### Fine Tuning the Space Allocation

Based on the outcome of the assessment, the University may direct resources to adjust the quantity or type of space allocated.

3

METHODOLOGY		SUPPORTING PARAMETERS	
<ul style="list-style-type: none"> <li><b>TBD:</b> The budgets under which alterations will be paid</li> <li><b>TBD:</b> How appropriate space planning alternatives will be identified</li> </ul>		<ul style="list-style-type: none"> <li><b>TBD:</b> Recalibration of core facility support</li> <li><b>TBD:</b> Confirmation of adjacency requirements and collaborative relationships</li> </ul>	

## GUIDING PRINCIPLES

Most importantly these components are tied together by certain fundamental principles that are reflective of the mission and purpose of the University. These guiding principles are a set of beliefs and practices that will guide the development of each component of the research space allocation guidelines. The intent is to provide a common language and baseline understanding that establishes a transparent system of checks and balances, enables accountability and guides future decision making. They are derived, in part, from the broader Guiding Principles of Space Management and Renovation adopted by the University's Facilities Strategic Planning Council in February 2016. The diagram on page 11 describes how these guiding principles bracket and tie together the three components of space allocation guidelines.

While the guidelines that follow will describe how research space on campus will be allocated, assessed and redistributed if necessary, the purpose of the Guiding Principles is to establish the parameters within which those guidelines will operate. Perhaps most importantly, the guiding principles establish that research space is a finite and valuable resource and that the efficient allocation and utilization of this resource can best advance the University's strategic priorities and the interests of its constituents.

### 1. Setting an Initial Allocation

In meeting the space needs of new faculty hires or emergent research initiatives the University requires a yardstick by which it can mete out available resources. The University has adopted an approach that bases that initial allocation on the research activity that will take place in the laboratory, the equipment required to support that research as well as the quantity of people in that environment (the size of the research team). A series of typologies of research activity or taxonomies of research space types were developed to categorize similar types of research activity. The intent is to support faculty research more effectively by situating it in the most appropriate laboratory setting. This approach does not take into consideration departmental affiliation or research discipline. This initial allocation establishes a quantity of space in a type of space but is not intended to locate it geographically across the University. Questions of affiliation and location will be addressed in other contexts including campus master planning documents as well as more focused studies of research affiliation. A more complete description of this taxonomy can be found in Chapter IV of this report.

The allocation of space to a research team constitutes an investment of resources to achieve strategic ends. For this reason the initial allocation of space must take place in the context of supporting

parameters that describe how proposed activities support the University's strategic goals for scholarship and research. An initial allocation of space may be prioritized or modified based on an expectation that said research will advance the profile of the institution, achieve a stated quantity of grant support or otherwise be consistent with strategic priorities. Although the development of these parameters and the articulation of UAlbany-specific strategic research goals is beyond the scope of this study, it is recognized that for the guidelines to be considered complete this topic must be addressed. In addition to setting a quantity of space based on research activity, equipment and size of PI team the investment of space resources must be accompanied by an articulation of the goals for that research and how those goals align with broader university priorities.

### 2. Assessment of that Space Allocation [In Development]

In addition to publishing metrics for setting the quantity of space to be allocated the guidelines recognize the need for periodic review to evaluate the effectiveness of that initial investment of laboratory resources. This provision for space audits is a vehicle for ensuring that the research activity is well-served by the space it occupies and that the assigned occupancy of a laboratory constitutes a sound investment. Similar to the first component described above, assessment of the space allocation will consist of methodologies that describe how that assessment will be conducted along with supporting parameters that frame how those methodologies will be implemented.

First, the University will establish the frequency with which assessments will be conducted. In the past, the University has worked to conduct such space audits across its research portfolio with greater frequency given the cost both of creating and operating such space. Other institutions including academic medical centers conduct such audits as frequently as every five years in recognition of the costs associated with operating biomedical research facilities. The frequency with which UAlbany conducts such audits will, in part, be shaped by the staff resources available. What we have learned in our review of comparable institutions is the value of auditing space with consistency and regularity as such an approach contributes to a culture of transparency and fairness across the research enterprise.

In addition, the University will clearly define which campus constituents will be convened to conduct the assessments and to which parties those reviewers will report. The Committee endorsed the audit process and emphasized two factors they believed would lend credence to the audit's findings. The first criterion was that reviewers with close knowledge of the research discipline and protocols in question be involved in the review. The second was that the review be conducted in a consistent and transparent manner with reviewers' roles and responsibilities clearly articulated.

## GUIDING PRINCIPLES

1. **The Value of Research; the Value of Research Space:** Coupled with instructional space, UAlbany's research space provides the springboard for institutional excellence.
  - a. Research plays a direct role in advancing the careers of UAlbany faculty, staff and students. With these collective interests in mind the University will responsibly manage this valuable and limited resource through careful allocation, assessment and reallocation as appropriate.
  - b. The relative costs of creating, operating and maintaining various types of laboratories will factor in to the management of research space.
2. **Space Allocation:** Space is allocated in support of University priorities, values and strategic goals.
  - a. Research space is allocated to research projects and activities, not individuals.
  - b. Space allocation is based on research activities, accounting for related equipment and required personnel. In the interest of preserving scarce renovation dollars, the University will house research in existing facilities that are already outfitted with appropriate systems infrastructure to the extent possible.
  - c. All space assignments are subject to evaluation, audit and possible reassignment to align with strategic priorities.
3. **Configuration and Distribution of Research Space:** Newly constructed space will be flexible and adaptable to a range of research activities.
  - a. Although space will be assigned to support specific research activities, the construction of that space will not be so unique as to preclude reuse for other functions.
  - b. Shared facilities including core instrumentation and storage will be encouraged. This approach optimizes space utilization and construction resources and minimizes duplication of facilities.
  - c. Proximity to interdisciplinary research collaborators and resources such as core instrumentation will be factored into allocation considerations as will be departmental affiliations.
  - d. Research space will be developed to support interdisciplinary collaborative research initiatives. This includes, where possible, the organization of research space around open and shared laboratory modules.
  - e. As a public research university, UAlbany will strive for openness and transparency in its research enterprise: making faculty research visible and on display to celebrate the importance of research activities.
  - f. Research space will be allocated to support the inclusion of undergraduate participation in faculty research and, as appropriate, the accommodation of co-curricular student research activity in faculty laboratories.
4. **UAlbany Research Priorities:** A set of strategic institutional research objectives will prioritize facilities investments and corollary support with transparency. These priorities will be sufficiently articulated and differentiated so as to distinguish between similar research endeavors within a single discipline.
  - a. Research supported by University-approved grants, contracts or cooperative agreements take precedence over unfunded academic research with allowances for disciplines that traditionally receive less grant support.
  - b. Special initiatives including imminent opportunities that advance the position of the University such as extraordinary grant funding or recruitment may be prioritized.
  - c. Space for growth capacity may be provided to incubate select research activity provided that the proposed research is accompanied by target metrics for success.

Alongside the development of a methodology for assessment this second component of the guidelines will necessarily include a range of supporting parameters or criteria that shape those methodologies. As noted in the guiding principles, the fundamental purpose of the allocation guidelines are to best support faculty research and the strategic research goals of the University. The initial space allocation is made based on the assumption that an investment of space will achieve certain ends. For periodic audits to be relevant they must be guided by metrics for evaluating space utilization relative to the stated goals of that initial request. In the same manner, a process must be defined in advance that describes how audit findings will be reviewed and confirmed. Committee members expressed strong support for the audit process recognizing it represents a clear opportunity to return underutilized research space to more active use. In order for that process to be successful and most importantly, endorsed by the University community there was equally strong support for an articulated process for review of audit findings that includes constituents with expertise in the corollary discipline and research practice. That said, while there was clear consensus around transparency and clarity of process, the Committee did not reach consensus on the degree to which specific space audits should be shared openly. Some committee members expressed the opinion that a more public process would contribute to a sense of fairness and transparency and support a cultural shift toward the recognition that research space is a valuable resource for achieving specific ends and must not be hoarded. Others were of the opinion that the scrutiny of a more open process would be detrimental to building a collaborative research culture. The appropriate degree of openness for the space audit process remains a topic for discussion and resolution.

### 3. Fine Tuning the Space Allocation [In Development]

In addition to criteria for evaluating the degree to which strategic research goals are met the guidelines will also describe provisions for adjusting the quantity or type of space allocated. Like the other guidelines components, it will be necessary for the University to describe both methodologies for fine tuning the space allocation along with the criteria by which those methodologies will be developed and implemented. Perhaps most importantly, the Committee noted that

for the audit process to be productive, modest budget allocations must be established to relocate research and alter research space for reuse. Furthermore, it remains to be determined whether those budgets will sit at the level of a division or the University.

Implicit in the practice of adjusting space allocations is support for an agency equipped to evaluate and build consensus around space planning alternatives. This includes the development and updating of a long-term facilities plan that tracks the University's strategic research priorities as well as the resources to keep current the campus' physical space inventory to correlate space use with occupancy.

In addition to setting a practice for adjusting space allocations the University will develop criteria to inform those adjustments. These will include criteria for evaluating the classification of space such as whether space is individually occupied or shared and the proper distribution of space between research cores and PI teams. Given the increased quantity of research that is conducted in a collaborative team environment, if the guidelines are to assist in making specific reallocation adjustments a methodology must be in place to clarify space assignment. Similarly, in order to make informed decisions concerning space planning and realignment it will be helpful to have a mapping of collaborative relationships and research adjacency requirements, both between PI groups and between researchers and their equipment cores.

### Summary

The three components described above are characteristic of research space allocation guidelines adopted by other colleges and universities. Based on feedback from the Committee tasked with review of this effort, the FSPC has concluded that a complete set of guidelines will include each of these components with their corresponding methodologies and supporting parameters and that all three do not fall under the aegis of a single campus agency. Development of the portions of the first component set forth in this study was led by the Office of Campus Planning because the methodologies described are spatial in nature. A range of university stakeholders will be involved in subsequent aspects of the guidelines based on their respective roles and responsibilities at the University.

## IV. Taxonomy of Research Space Types

The initial space allocation is based on a taxonomy of space types that, at the highest level, are based on the primary place in which that research takes place: the desktop, the benchtop or space unique to specialized instrumentation or equipment. This first level of categorization distinguishes research that is primarily theoretical or experimental in nature. It provides special consideration for research that is highly reliant on specialized instrumentation or equipment that, in turn, determines the characteristic features of the necessary research space.

These three primary typologies include a range of secondary sub-types that account for nuances in how research is conducted within each primary category. Special consideration is given to the importance of inter- and trans-disciplinary research and to the need for research space allocation to remain nimble to changing exigencies through the inclusion of “cluster” allocations for groups of PIs working on collaborative projects. In this cluster model, space is allocated to a collective of PI teams. While it is expected that the research space needs of an individual PI team will increase or decrease over time, the cluster can internally manage these evolving space needs.

A tertiary set of typologies within each secondary sub-type accounts for different sizes of research teams: small, medium or large. The resultant set of 25 laboratory typologies organized into the overall taxonomy described graphically to the right will be used to provide a framework for allocating an initial quantity of space across all UAlbany divisions and disciplines.

The diagrams on the following pages describe each of the three primary typologies along with the secondary and tertiary categories for each. Based on consultation with representatives from each of the University’s divisions it can be expected the entirety of the UAlbany research enterprise can be mapped to this taxonomy. The diagrams do not represent architectural design solutions but rather, illustrate the relative quantities of space to be allocated.

<i>primary</i>		<i>secondary</i>	<i>tertiary</i>		
<b>desktop</b>	<i>theorists</i>	Office-Based	○	○	○
		Computational Lab		○	○
		Theoretical Cluster		○	○
<b>benchtop</b>	<i>experimentalists</i>	Dry Laboratory	○	○	○
		Wet Laboratory	○	○	○
		Ballroom / Lab Loft		○	○
		Hybrid Cluster		○	○
<b>specialized instrumentation or equipment</b>	<i>discipline- / activity-specific</i>	High- / Wide-Bay			○
		Behavioral Laboratory	○	○	○
		Clinical Laboratory	○	○	○
		Visual & Performing Arts			○
			<i>small</i>	<i>medium</i>	<i>large</i>

The above diagram describes the full taxonomy used for developing a preliminary space allocation based on the research methodologies conducted by a given PI team.

## Initial Space Allocation: Taxonomy of Research Space Types (continued)

The taxonomy proposed is intended to inform an initial space allocation based on research practice and quantity of research team members involved in active research. The allocation, measured in assignable square feet (ASF) is calculated measuring from wall to wall at floor level, deducting for fixed built-in features such as radiator enclosures but including furnishings such as laboratory casework. Unassignable spaces such as public circulation, building structure, mechanical equipment, and bathrooms are similarly excluded. This initial space allocation will be modified to account for research utilizing instrumentation that requires special consideration. Furthermore, the initial allocation will be adjusted to support research that advances the University's strategic research priorities. These interests may range from raising the profile of the institution through publications and citations to anticipated increases in overall grant funding.

Theoretical research, described on pages 15 through 17, is typically conducted on the desktop without the aid of specialized instrumentation except for computer workstations. Such spaces are outfitted with simple engineering infrastructure including recirculating air ventilation systems and no distributed plumbed or specialty electric infrastructure. Such environments are suitable for disciplines across all divisions, including the humanities and social sciences as well as engineering and the natural sciences.

Experimental research conducted at the benchtop is described on pages 18 through 21. Each of these space types requires specialized engineering infrastructure to support research procedures and associated instrumentation. Both dry and wet laboratories are appropriate for a range of natural sciences and engineering disciplines while larger scale lab loft or ballroom laboratories are indicated for select engineering disciplines such as mechanical and electrical engineering. As with theoretical researchers, a cluster model for benchtop research has been included to support interdisciplinary research across multiple PI teams.

Additional space typologies have been included to account for experimental research that is predominantly conducted around specialized instrumentation or equipment requiring a more customized approach to space allocation. These include:

- high- and wide-bay research conducted within mechanical engineering.
- facility-specific practices requiring behavioral and clinical laboratory space, and
- the visual and performing arts disciplines in which faculty research is highly practice- or activity-specific.



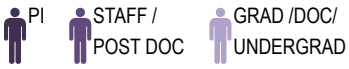
**theorists**

**Office-Based**



Computer-based analytic research that does not require equipment with specialized power, cooling, security or lighting controls. Furniture can be contract standard in lieu of custom millwork. Temperature and humidity controls are comparable to those of office work areas with no specialized laboratory exhaust. All disciplines may include researchers that work solely in an office-based environment at a range of scales: from individual practitioners to groups of varying sizes.

**GROUP COMPOSITION**



**Individual**



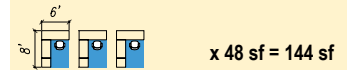
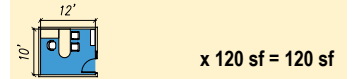
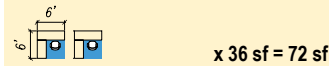
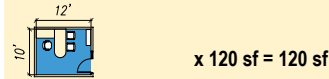
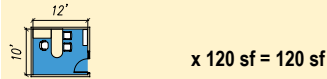
**Small Group:  
PI Team of four people**



**Large Group:  
PI Team of ten people**



**OFFICE SPACE**



**LABORATORY SPACE**

**+ ACCESS TO SHARED SPACE (15%)**

N/A

= 36 sf

= 71 sf

**INITIAL ALLOCATION (rounded up to nearest 10 sf)**

**120 nasf**

**280 nasf**

**550 nasf**

*These quantities represent an initial calculation and will be vetted based on equipment use and UAlbany research priorities.*

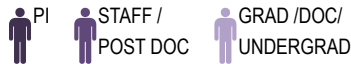
**theorists**

**Computational Laboratory**



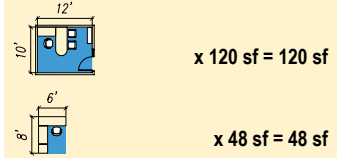
Computer-based analytic research utilizing equipment with specialized power, cooling, security and/or lighting controls. Furniture can be contract standard in lieu of custom millwork. Temperature and humidity controls are comparable to those of office work areas with no specialized laboratory exhaust. Traditionally, these types of spaces are required within disciplines such as Bioinformatics and Electrical and Computer Engineering. Given the increased importance of data analytics in a range of fields across all the Natural and Social Sciences, this typology may be required across all divisions.

**GROUP COMPOSITION**

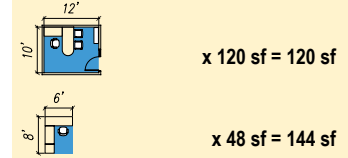


**OFFICE SPACE**

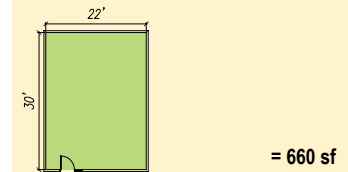
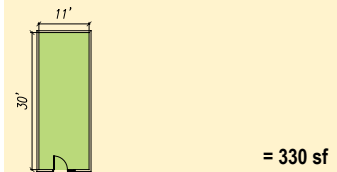
**1-Module PI team of six people**



**2-Module PI Team of eight people**



**LABORATORY SPACE**



**+ ACCESS TO SHARED SPACE (15%)**

**INITIAL ALLOCATION (rounded up to nearest 10 sf)**

= 75 sf  
**570 nasf**

= 124 sf  
**950 nasf**

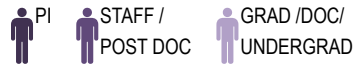
*These quantities represent an initial calculation and will be vetted based on equipment use and UAlbany research priorities.*

**theorists**

**Theoretical Cluster**



Computer-based analytic research utilizing equipment with specialized power, cooling, security and/or lighting controls. Space is assessed based on research goals for the cluster. Movable furniture can be contract standard. Temperature and humidity controls are comparable to those of office work areas with no specialized laboratory exhaust. This space typology is a scaled version of the prior two theoretical laboratory space types that recognizes the increased importance of collaborative research clusters to the University's strategic research interests.



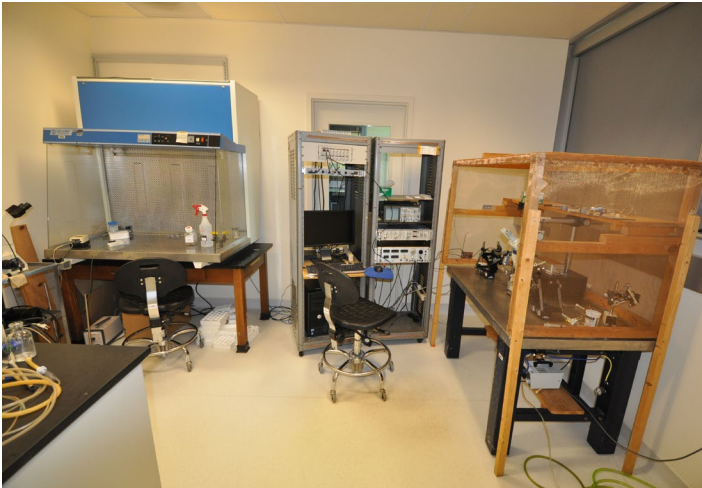
**OFFICE SPACE**

	Cluster of four PI teams	Cluster of six PI teams
<b>PI</b>	(4)	(6)
<b>STAFF / POST DOC</b>	(4)	(6)
<b>GRAD /DOC/ UNDERGRAD</b>	(12)	(16)
<b>OFFICE SPACE</b>	(4) x 120 sf = 480 sf (4) x 48 sf = 192 sf (12) x 36 sf = 432 sf	(6) x 120 sf = 480 sf (6) x 48 sf = 192 sf (16) x 36 sf = 432 sf
<b>LABORATORY SPACE</b>	= 660 sf	= 1,320 sf
<b>+ ACCESS TO SHARED SPACE (15%)</b>	= 265 sf	= 385 sf
<b>INITIAL ALLOCATION (rounded up to nearest 10 sf)</b>	<b>2,030 nasf</b>	<b>2,950 nasf</b>

*These quantities represent an initial calculation and will be vetted based on equipment use and UAlbany research priorities.*

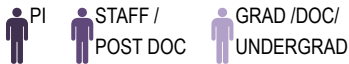
**experimentalists**

**Dry Laboratory**



Advanced computational or applied mathematical analysis / simulation research. Equipment may require specialized power, cooling, security, lighting controls, or vibration isolation. Reconfigurable laboratory area to support alternative equipment layouts. Furnishings include movable and fixed laboratory casework (including vibration isolation tables) with some contract pieces. This category is appropriate for a range of disciplines across the natural sciences and engineering including Physics and Electrical and Computer Engineering.

**GROUP COMPOSITION**



**1-Module PI team of four people**



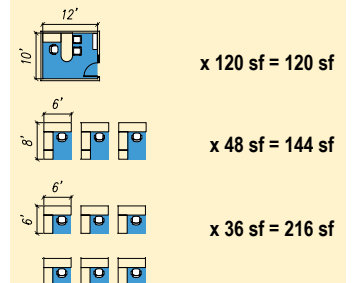
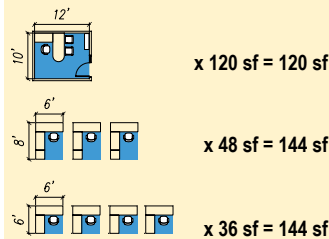
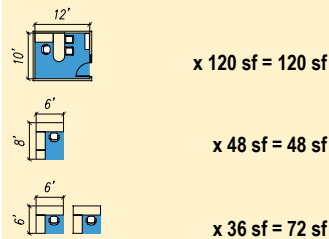
**2-Module PI team of eight people**



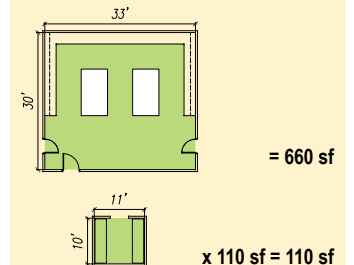
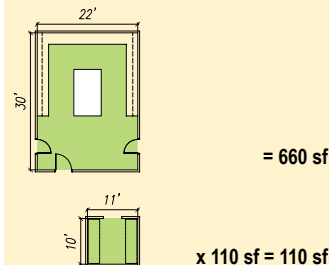
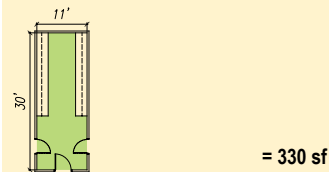
**3-Module PI team of ten people**



**OFFICE SPACE**



**LABORATORY SPACE**



**+ ACCESS TO SHARED SPACE (15%)**

= 86 sf

= 182 sf

= 237 sf

**INITIAL ALLOCATION (rounded up to nearest 10 sf)**

**660 nasf**

**1,350 nasf**

**1,820 nasf**

*These quantities represent an initial calculation and will be vetted based on equipment use and UAlbany research priorities.*

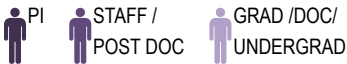
**experimentalists**

**Wet Laboratory**



Research requiring access to water of varying degrees of purity, laboratory exhaust and specialized plumbed utilities. Containment / isolation can be concerns with accommodation of chemical storage and/or biological specimens. Furnishings include movable and fixed laboratory casework with some contract pieces, fume hoods and possibly bio-safety cabinets. In addition to natural science disciplines within the College of Arts and Sciences, this category of research space is appropriate for several engineering disciplines such as Bioengineering, Environmental Engineering as well as select disciplines within the School of Public Health.

**GROUP COMPOSITION**



**2-Module PI team of six people**



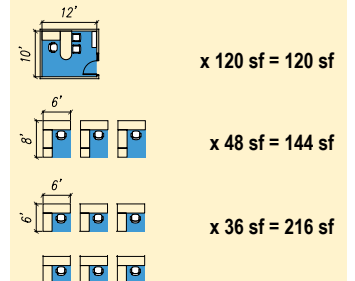
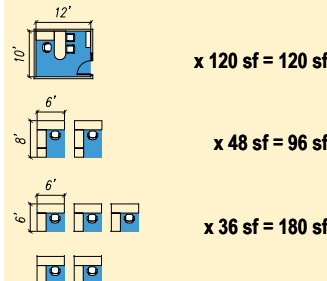
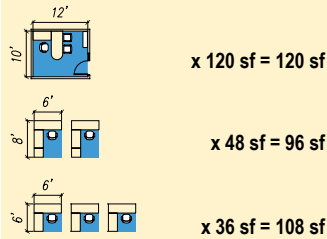
**2-Module PI team of eight people**



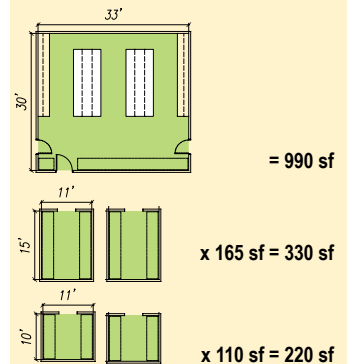
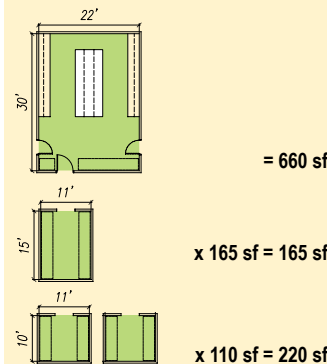
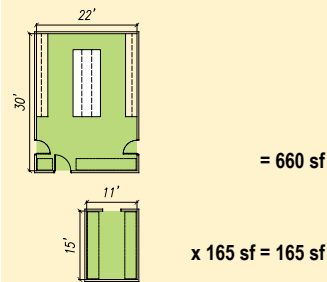
**3-Module PI team of ten people**



**OFFICE SPACE**



**LABORATORY SPACE**



**+ ACCESS TO SHARED SPACE (15%)**

= 172 sf

= 216 sf

= 303 sf

**INITIAL ALLOCATION (rounded up to nearest 10 sf)**

**1,320 nasf**

**1,660 nasf**

**2,320 nasf**

*These quantities represent an initial calculation and will be vetted based on equipment use and UAlbany research priorities.*

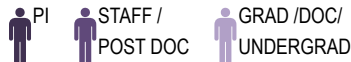
**experimentalists**

**“Ballroom” or “Lab Loft”**



Research requiring large open areas for individual or team-based projects. All laboratory services are routed overhead or along perimeter columns to maximize contiguous open area. Interior demising walls are easily removed. Furnishings include movable laboratory casework with some contract pieces, and possibly fume hoods. This category of research space has been included to support the evolving needs of the College of Engineering and Applied Sciences and may be appropriate for future initiatives in Bioengineering, Electrical Engineering and Mechanical Engineering.

**GROUP COMPOSITION**



**OFFICE SPACE**

	PI team of six people	PI team of eight people
<b>GROUP COMPOSITION</b>		
<b>OFFICE SPACE</b>	 x 120 sf = 120 sf  x 48 sf = 96 sf  x 36 sf = 108 sf	 x 120 sf = 120 sf  x 48 sf = 96 sf  x 36 sf = 180 sf 
<b>LABORATORY SPACE</b>	 = 660 sf  x 110 sf = 110 sf	 = 990 sf  x 110 sf = 220 sf
<b>+ ACCESS TO SHARED SPACE (15%)</b>	= 164 sf	= 241 sf
<b>INITIAL ALLOCATION (rounded up to nearest 10 sf)</b>	<b>1,260 nasf</b>	<b>1,850 nasf</b>

*These quantities represent an initial calculation and will be vetted based on equipment use and UAlbany research priorities.*

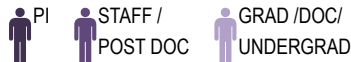
**experimentalists**

**Hybrid Research Cluster**



Interdisciplinary research requiring direct proximity between computational and experimental areas conducted in a cluster or team-based environment. Limited provision of isolation/containment and instrumentation. Suited for teams prone to flux in staffing. Furnishings include movable and fixed laboratory casework with some contract pieces, and possibly fume hoods. This space typology is a scaled version of both dry and wet laboratories in recognition of the increased importance of collaborative research clusters to the University's strategic research interests.

**GROUP COMPOSITION**



**OFFICE SPACE**

**LABORATORY SPACE**

**+ ACCESS TO SHARED SPACE (15%)**

**INITIAL ALLOCATION (rounded up to nearest 10 sf)**

	Cluster of two to four PI teams	Cluster of four to six PI teams
<b>GROUP COMPOSITION</b>	(4) PI, (6) STAFF / POST DOC, (14) GRAD / DOC / UNDERGRAD	(6) PI, (10) STAFF / POST DOC, (20) GRAD / DOC / UNDERGRAD
<b>OFFICE SPACE</b>	(4) x 120 sf = 480 sf (8) x 48 sf = 288 sf (16) x 36 sf = 504 sf	(6) x 120 sf = 720 sf (10) x 48 sf = 480 sf (20) x 36 sf = 720 sf
<b>LABORATORY SPACE</b>	(6) x 110 sf = 1,980 sf (8) x 110 sf = 880 sf	(8) x 110 sf = 2,640 sf (12) x 110 sf = 1,320 sf
<b>+ ACCESS TO SHARED SPACE (15%)</b>	= 620 sf	= 880 sf
<b>INITIAL ALLOCATION (rounded up to nearest 10 sf)</b>	<b>4,750 nasf</b>	<b>6,760 nasf</b>

*These quantities represent an initial calculation and will be vetted based on equipment use and UAlbany research priorities.*

***discipline / activity specific***

**High- and Wide-Bay**



Research requiring large open areas and large-scale instrumentation such as thermodynamics, robotics, civil engineering, and possibly materials science. Significant engineering infrastructure may be required including electrical switchgear, high-hazard occupancy and plumbed laboratory services. Such facilities are currently not present in UAlbany's laboratory portfolio although appropriate space might be available regionally. This research space typology was included to support future initiatives within the College of Engineering and Applied Science and may also be relevant within select practices within the visual arts.

**Procedure-Specific as Available**



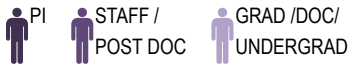
**discipline / activity specific**

**Behavioral and Clinical Laboratory**



Research involving a range of equipment to test subjects and record responses. In the case of human subjects will require confidential intake and reception functions as well as separation of subject groups. Temperature and humidity controls may be comparable to those of office work areas with no specialized laboratory exhaust. In select instances specialized exhaust and ventilation may be required. Specialized equipment may include food pantries, eye- and motion-tracking hardware and other functions that will require additional space. Movable furniture can be contract standard. Consideration should be given to collocating such labs as a shared core resource depending on strategic research priorities.

**GROUP COMPOSITION**



**1-Module PI team of four people**

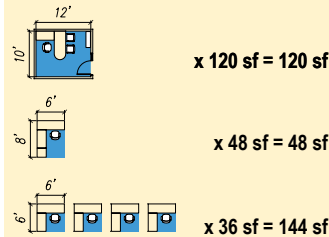
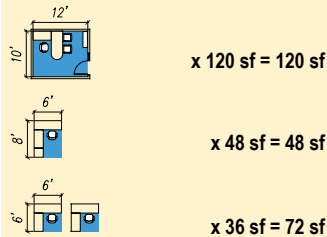


**2-Module PI team of six people**



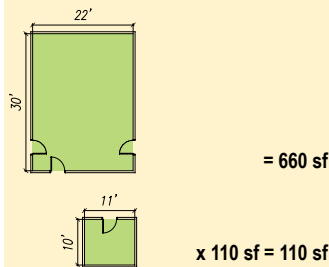
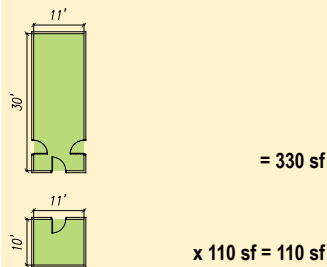
**Shared Core Facility**

**OFFICE SPACE**



Office space allocated on a unitized basis according to the quantity of team members

**LABORATORY SPACE**



Specialized core research facilities developed based on strategic research priorities

**+ ACCESS TO SHARED SPACE (15%)**

= 102 sf

= 162 sf

**INITIAL ALLOCATION (rounded up to nearest 10 sf)**

**780 nasf**

**1,240 nasf**

*These quantities represent an initial calculation and will be vetted based on equipment use and UAlbany research priorities.*

***discipline / activity specific***

**Visual & Performing Arts**



Research space needs within the visual and performing arts are directly related to the equipment and instrumentation used within each discipline. Such spaces may include sculpture studios, rehearsal space, performance venues and exhibition space that are highly discipline- and activity-specific. Within these practice areas, the allocation of space is less a function of the size of the research team than a unit commitment of space in support of that activity.

**Procedure-Specific as Available**



