



ADDENDUM NO. 3

EXHIBIT C
PROGRAM

REQUEST FOR QUALIFICATIONS

PART A: PRE-CONSTRUCTION SERVICES (Design-Assist) and
PART B: CONSTRUCTION SERVICES (Construction Management at Risk)

Laboratory Renovations
Medical Education Building
LSU Health Sciences Center
New Orleans, Louisiana
Project No. 19-604N-21-02, F.19002360

June 16, 2022



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PROGRAM
LSUHSC-NO Medical Education Building Laboratory Renovations
Planning and Construction
New Orleans, LA
State Project 19-604N-21-02, WBS F.19002360

This project shall consist of the full renovation of the upper three (3) floors of the Medical Education Building on the LSUHSC campus in New Orleans. The seven-story building, completed in 1983, is LSUHSC's oldest occupied academic building. The upper three floors comprise approximately 100,000sf, including existing balconies that will be enclosed to provide additional usable space. The work is intended to bring the facility into compliance with Centers for Disease Controls and National Institute for Health standards for laboratory and research design. To improve space efficiency, function and ventilation, the new design will include an open lab concept with researcher-specific lab support spaces. To meet modern air quality and ventilation requirements, existing research ductwork and individual ventilation systems will be replaced with four rooftop-mounted variable manifold ventilation units. Exhaust valve boxes, installed at each exhaust outlet, will be connected to the Building Management System and all fume hoods will be replaced. To maximize air quality control, minimize utilities usage, and enhance opportunities for collaboration, offices will be clustered. Necessary support services will include new administrative areas, conference rooms, and collaboration spaces. All areas will receive new equipment to replace the outdated items now in service. As part of the overall renovation, the existing restrooms will be reconfigured to meet current accessibility standards and to improve fixture counts. Additionally, individual toilet rooms will be provided on each floor. Improvements to the building envelope will provide improved natural lighting and will enhance the aesthetics of the building exterior. Since research is ongoing, the entire laboratory may not be able to be shut down at once. Therefore, phasing could be a crucial component of the design and construction schedules.

LSU MEB Lab Renovations

PROGRAM COMPLETION PHASE REPORT
FEBRUARY 11, 2022

LSU HEALTH SCIENCES CENTER

PERKINS —
EASTMAN

Human by Design

gouldevans

TLC ENGINEERING SOLUTIONS

sef SCHREIBER ENDOMAS FANAGAN

LSU Health
NEW ORLEANS
School of Medicine



ROOF MECHANICALS

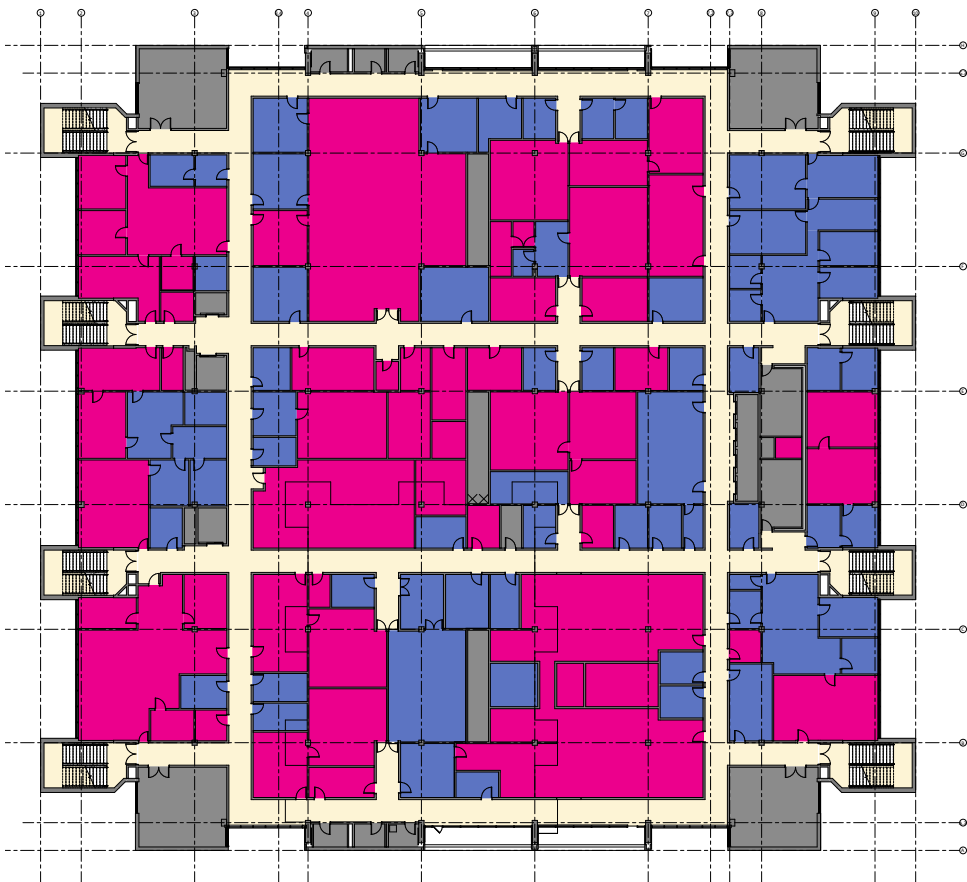
- 7TH FLOOR
- 6TH FLOOR
- 5TH FLOOR
- 4TH FLOOR (CEILINGS WORK)

EXISTING SPACE TYPOLOGY DISTRIBUTION

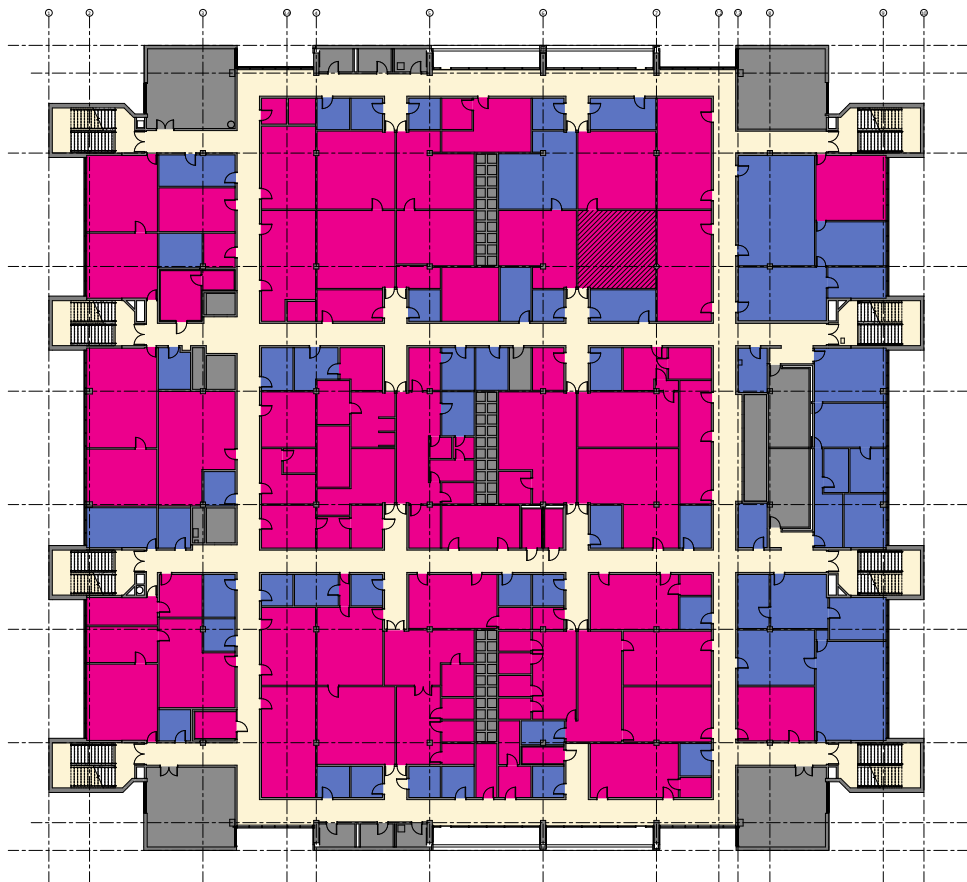
EXISTING LEVEL 5 FLOOR PLAN

EXISTING LEVEL 6 FLOOR PLAN

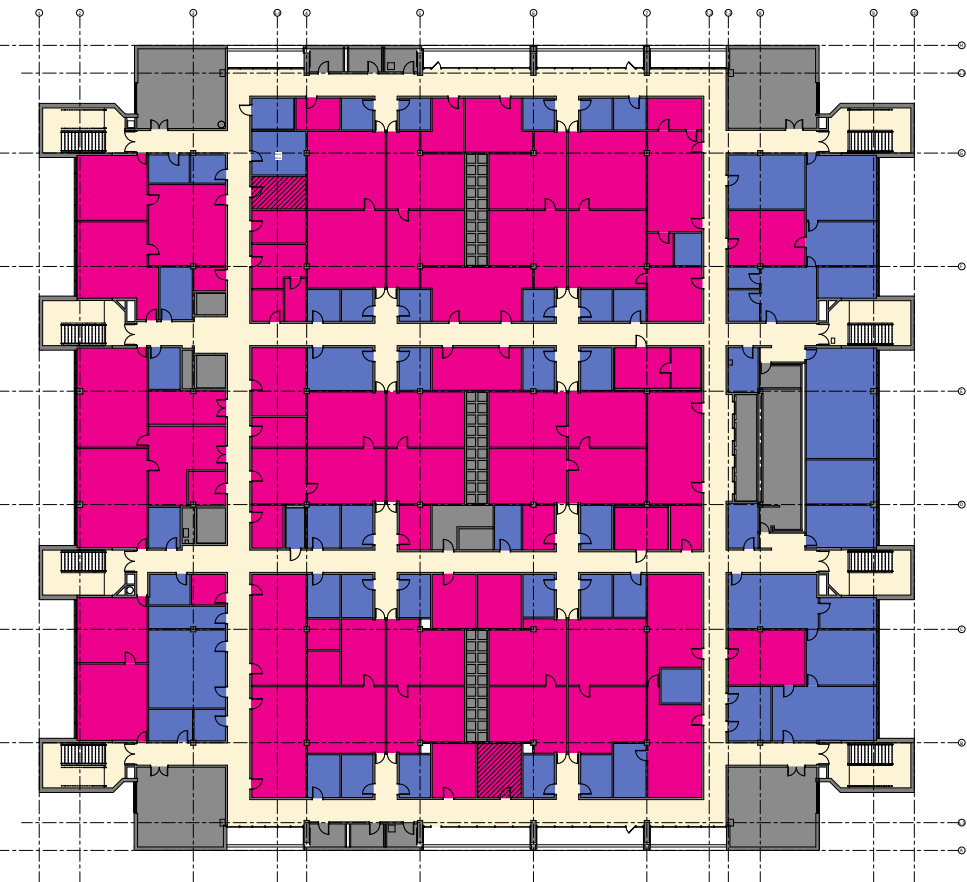
EXISTING LEVEL 7 FLOOR PLAN



LAB: 21,930 SF
OFFICE: 11,962 SF
CORE: 4,672 SF



LAB: 23,886 SF
OFFICE: 9,304 SF
CORE: 4,533 SF



LAB: 23,154 SF
OFFICE: 10,119 SF
CORE: 4,672 SF

- LAB
- OFFICE
- CIRCULATION
- CORE

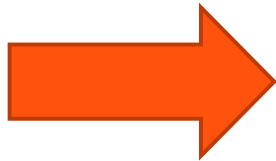
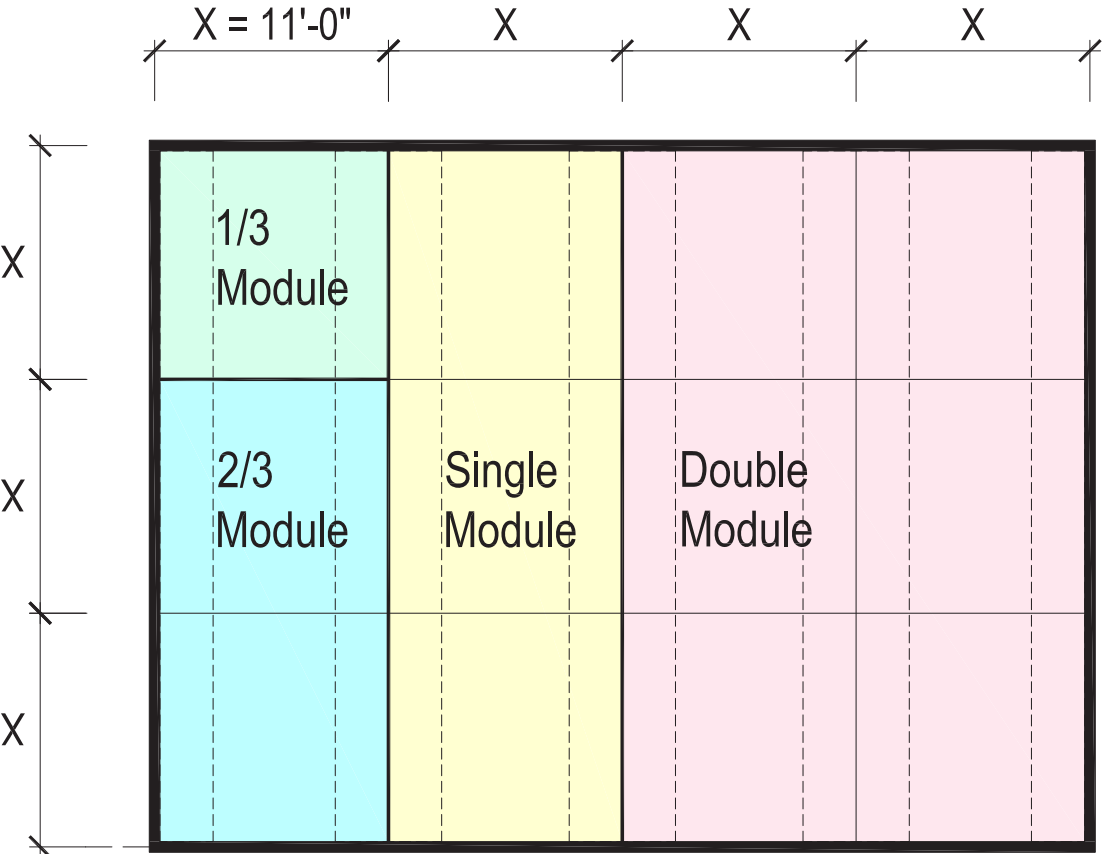
Figure: Existing Space Typology Distribution Floor Plans

Source: LSU - MEB PROGRAMMING DOCUMENT

PLANNING PRINCIPLES

MODULAR DESIGN

NIH GUIDELINES - TYPICAL MODULE CONFIGURATION



- WET LABORATORY
- LAB SUPPORT / CORE LAB
- OFFICE / ADMINISTRATION
- COLLABORATION

CONCEPTUAL LAB MODULE STUDY

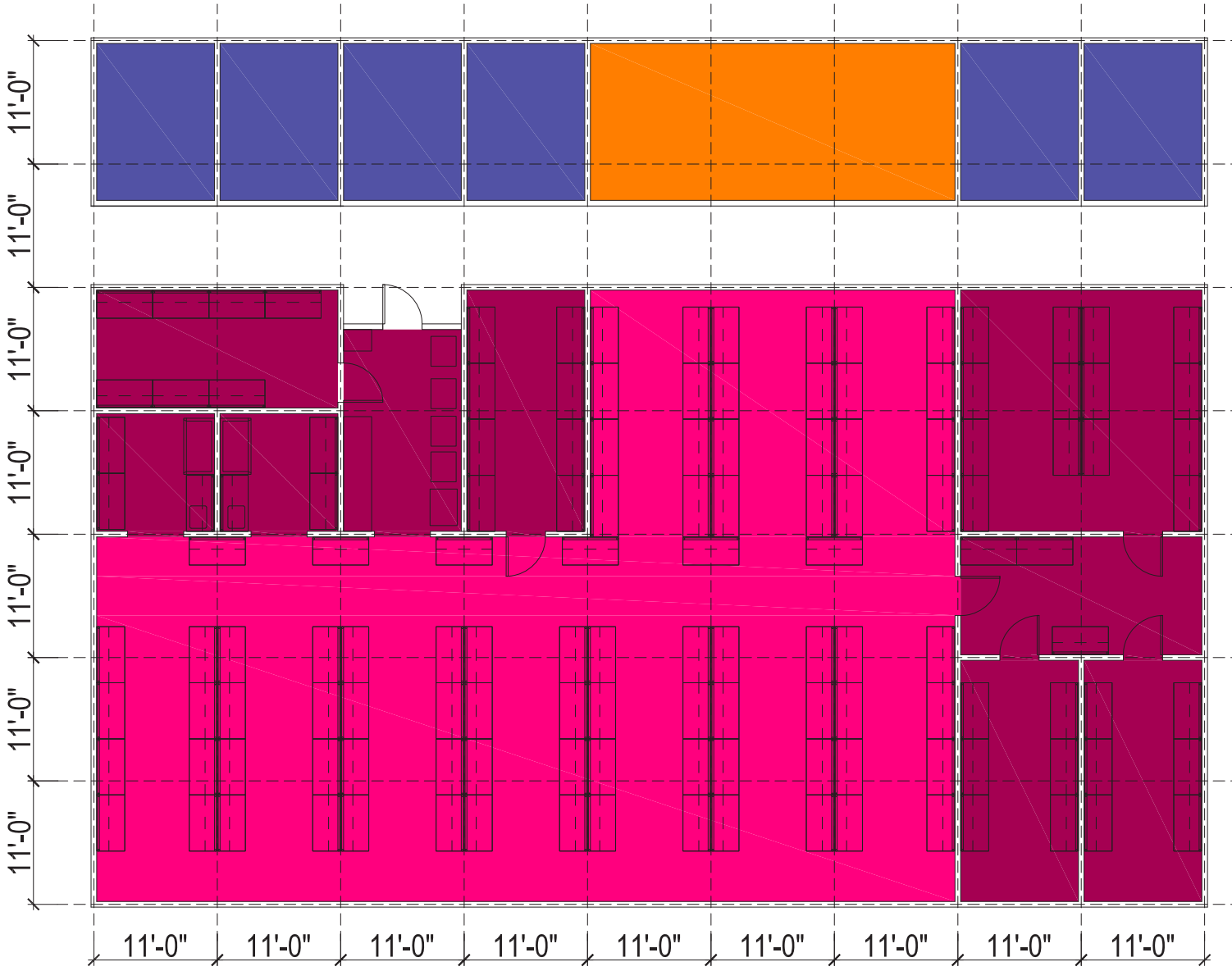


Figure: Typical Lab Module

Figure: Conceptual Lab Model Study

3.1 Program Development

The functional space program detailed in the following sections reflect the input from LSU Health Leadership, Facilities Design & Construction and departmental research personnel. During the program development and analysis phase, it was determined that one of the six research departments currently occupying the space, Pathology, will be located elsewhere and will not be part of the proposed MEB renovation.

While information gathering and program analysis confirmed the functional and equipment requirements that are unique to the five remaining research departments of Anatomy & Cell Biology, Biochemistry, Microbiology & Immunology, Pharmacology and Physiology, it is important to note that all wet lab, dry lab, specialty and support space, regardless of research focus, is sized incrementally using the aforementioned laboratory module, allowing all floors to be organized into a more generic and consistent layout.

This approach will allow the renovated floors to accommodate specific needs of current research while remain “future-proof”; adaptable to future, yet to be determined research initiatives, changes in team size and equipment, with minimal impact to the physical environment and ongoing research operations.

| Prelim: 2021-02-08 Projected Space Requirements by Program Group & Function | Department NSF | | Remarks |
|---|----------------|----------------|---|
| | EXTG* | PROPOSED | |
| Department Areas | | | |
| Summary | | | |
| BIOCHEMISTRY | 15,357 | 14,979 | |
| MICROBIOLOGY & IMMUNOLOGY | 17,521 | 14,226 | |
| ANATOMY & CELL BIOLOGY | 20,112 | 12,418 | <i>Excludes Animal Facility Spaces</i> |
| PHARMACOLOGY | 18,776 | 16,749 | <i>Excludes Animal Facility Spaces</i> |
| PHYSIOLOGY | 16,950 | 14,780 | <i>Excludes Animal Facility Spaces</i> |
| PATHOLOGY | 15,370 | 0 | <i>Department to be relocated off site</i> |
| ANIMAL FACILITY | 0 | 3,889 | <i>Reduced from 9,422 NSF to leverage central animal facility</i> |
| SHARED LAB SUPPORT | 0 | 9,885 | <i>Autoclave, Media Prep, Nitrogen, Chemical Hold</i> |
| COLLABORATION | 0 | 5,552 | |
| BUILDING SERVICES | | 2,385 | <i>Electrical, IT, JC, Closets; All Gender</i> |
| NEW RESEARCH INITIATIVES | 0 | 13,973 | |
| Total | 104,086 | 108,836 | |
| | | | <i>*includes extg department animal spaces & shared lab support</i> |

Figure Departmental Summary

SPACE CATEGORIES SUMMARY BY DEPARTMENT

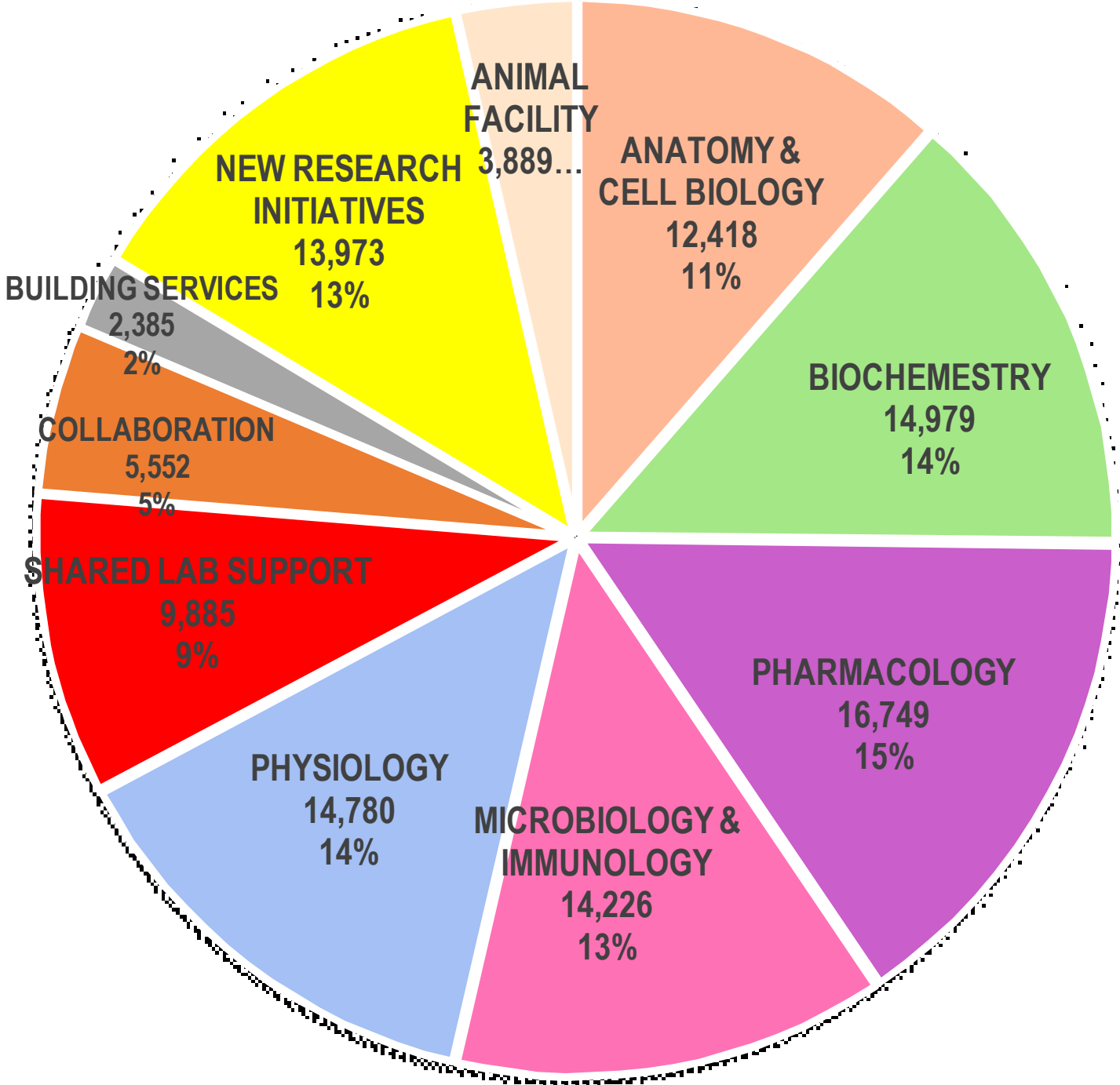


Figure Space Allocation by Department

FUNCTIONAL SPACE PROGRAM

BIOCHEMISTRY - LABORATORY & SUPPORT

| Prelim: 2022-01-13 Projected Space Requirements by Program Group & Function | Existing Program | | | | | Proposed Program | | | | | | | | Remarks |
|---|------------------|-----------------------------|---|-------------------|-----------------------|------------------|-----------------------------|---|---------------------|-------------|-------------|---------------|---------------|---|
| | Extg PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Extg No. of Staff | Proj PI Growth 10 yrs | PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Prjctd No. of Staff | Space Count | Lab Modules | NSF per Space | NASF | |
| BIOCHEMISTRY | | | | | | | | | | | | | | |
| LABORATORY & SUPPORT | | | | | | | | | | | | | | |
| Laboratory | | | | | | | | | | | | | | |
| Research Lab - Wet | 6 | 4 | 5 | 30 | 4 | 10 | 3 | 4 | 40 | | 10 | 360 | 3,600 | 10 PI'S X 4 per res group (1 PI + 3) = 40 staff x 10 LF bench ea. = 400 LF / 40 ELF per module = 10 lab modules. Note: PI number 10 year projection reduction due to funding cuts |
| SUBTOTAL Wet Lab | 6 | | | 30 | | 10 | | 4 | 40 | | | | 3,600 | |
| Research Lab - Dry | | | | | | | | | | | | | | 400 sf min for X-ray crystallography machine space + 200 sf support lab |
| X-Ray Crystallography | | | | | | 1 | 3 | 4 | 4 | 1 | | 462 | 462 | Requires a min 450 nsf Room |
| X-Ray Crystallography Support Lab | | | | | | | | | | 1 | | 225 | 225 | adjacent lab to crystallography |
| Write Up Space (Outside of Lab) | | | | | | | | | | 30 | | 48 | 1,440 | |
| SUBTOTAL Dry Lab | | | | | | 1 | | 4 | | | | | 2,127 | Note: Staff count EXCLUDES front office dept. staff |
| Laboratory Support | | | | | | | | | | | | | | |
| Refrigerator / Freezer Room | | | | | | | | | | 1 | | 462 | 462 | (16) -80's / could be shared w/ floor |
| Cold Room | | | | | | | | | | 1 | | 195 | 195 | To be occupied |
| Tissue Culture-Large | | | | | | | | | | 2 | | 462 | 924 | 1 BSC per PI + dble incubator'; include Refrig. and microscope and additional small work area. |
| Tissue Culture-Small | | | | | | | | | | 1 | | 225 | 225 | 1 BSC per PI + dble incubator'; include Refrig and microscope and additional small work area. |
| Microscopy Room | | | | | | | | | | 0 | | 225 | 0 | Will occasionally use core lab in CSRB / could share others on fl. |
| Prep / Equipment / Instr. Room | | | | | | | | | | 1 | | 462 | 462 | centralized equipment room |
| Dry Storage | | | | | | | | | | 0 | | 225 | 0 | In-lab storage (base cabinetry plus perimeter shelving) |
| Equipment Hold | | | | | | | | | | 1 | | 225 | 225 | Could be Linear Equipment Storage Rooms (Alcoves off Wet Lab & Lab Support Spaces |
| Chemical Storage | | | | | | | | | | 0 | | 55 | 0 | In-lab storage (approved flammable liquid storage cabinetry) |
| Fume Hoods | | | | | | | | | | 9 | | 110 | 990 | 1 FH per (2) PI's plus 60% (11/2 = 5.5 x 1.60 = 9 FH; 4ft OR 5ft FH |
| Autoclave / Waste Holding | | | | | | | | | | | | | | Included in shared support below Shared 1 central per floor |
| Media Prep / Sterilizer | | | | | | | | | | | | | | Included in shared support below Shared 1 central per floor |
| Radioisotope Lab | | | | | | | | | | | | | | Included in shared support below 1 per floor. Central Location; Can be shared with other department |
| SUBTOTAL Lab Support | | | | | | | | | | | | | 6,747 | |
| DEPARTMENTAL SUBTOTAL Lab & Lab Support | 6 | | | 30 | | 11 | 3 | | 44 | | | | 12,474 | |

Figure: Functional Space Program - Biochemistry

FUNCTIONAL SPACE PROGRAM

BIOCHEMISTRY - OFFICE & ADMINISTRATION

| Prelim: 2022-01-13 | | Existing Program | | | | | Proposed Program | | | | | | | Remarks | | |
|---|-------------|------------------|-----------------------------|---|-------------------|-----------------------|------------------|-----------------------------|---|---------------------|-------------|-------------|---------------------------------|---------------|--|--|
| Projected Space Requirements by | | Extg PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Extg No. of Staff | Proj PI Growth 10 yrs | PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Prjctd No. of Staff | Space Count | Lab Modules | NSF per Space | | NASF | |
| Program Group & Function | | | | | | | | | | | | | | | | |
| OFFICE & ADMINISTRATION | | | | | | | | | | | | | | | | |
| Office | | | | | | | | | | | | | | | | |
| Department Head / PI | Office | | | | | | | | | | 1 | | 225 | 225 | Dept. Head is a PI | |
| Principal Investigator | Office | | | | | | | | | | 9 | | 130 | 1,170 | Excludes Dept. Head PI | |
| Business Manager | Office | | | | 1 | | | | 1 | 1 | | | 130 | 130 | | |
| Assistant Business Manager | Office | | | | 1 | | | | 1 | 1 | | | 130 | 130 | | |
| SUBTOTAL Office Space | | | | | 2 | | | | 2 | 12 | | | | 1,655 | | |
| Administrative Staff | | | | | | | | | | | | | | | | |
| | Open Office | | | | 2 | | | | | 2 | 2 | | 130 | 260 | | |
| SUBTOTAL Admin. Staff | | | | | 2 | | | | 2 | 2 | | | | 260 | | |
| Administrative Support | | | | | | | | | | | | | | | | |
| Conference - Large | | | | | | | | | | | | | Included in shared support core | | 1 per floor | |
| Conference - Small | | | | | | | | | | | 1 | | 300 | 300 | per department - 6-10 people | |
| Copy / Print / Mail Room | | | | | | | | | | | 1 | | 150 | 150 | | |
| Supply Closet | | | | | | | | | | | 1 | | 60 | 60 | | |
| Coffee / Break Area | | | | | | | | | | | | | Included in shared support core | | 1 per floor | |
| File Room | | | | | | | | | | | 1 | | 80 | 80 | | |
| Misc. | | | | | | | | | | | | | | | | |
| SUBTOTAL Admin.Support | | | | | | | | | | | | | | 590 | | |
| DEPARTMENTAL SUBTOTAL Office Space, Admin Staff, Admin Support | | | | | | | | | | | | | | 2,505 | | |
| BIOCHEMISTRY TOTAL | | 6 | | | 30 | | 11 | | | 44 | | | | 14,979 | Note: Staff count INCLUDES Lab & office dept. staff | |
| | | | | | | | | | | | | | Dept. Grossing Factor | 1.25 | 18,724 | |

Figure: Functional Space Program - Biochemistry

FUNCTIONAL SPACE PROGRAM

MICROBIOLOGY & IMMUNOLOGY - LABORATORY & SUPPORT

| Prelim: 2022-01-13 Projected Space Requirements by Program Group & Function | Existing Program | | | | | Proposed Program | | | | | | | | Remarks |
|---|------------------|-----------------------------|---|-------------------|-----------------------|------------------|-----------------------------|---|---------------------|-------------|--------------|---------------|---------------|--|
| | Extg PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Extg No. of Staff | Proj PI Growth 10 yrs | PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Prjctd No. of Staff | Space Count | Lab Modules | NSF per Space | NASF | |
| MICROBIOLOGY & IMMUNOLOGY | | | | | | | | | | | | | | |
| LABORATORY & SUPPORT | | | | | | | | | | | | | | |
| Laboratory | | | | | | | | | | | | | | |
| Research Lab - Wet | | | | | | | | | | | | | | |
| 1-Virology | 4 | 4 | | 16 | 20% | 5 | 4 | 5 | 25 | | 6.25 | 360 | 2,250 | 13 PI'S X 5 research groups (1 PI + 4) = 65 staff x 10 LF bench ea. = 650 LF / 40 ELF per module = 16.25 lab modules ~ 17 modules (NOTE: Must separate the above into 3 individual lab groups noted; incl possible anterooms). Number of extg PI's account for only 2/3 of current PI's. Other PI's in CSRB; 60% MEB & 40% CSRB. Total # of Extg Pis is 20. BSL2 (+) w/ anteroom, 1 tissue culture hood per PI with stacked Incubator. |
| 2-Bacteriology / Immunology (3 PIs) | 3 | 4 | | 12 | 20% | 4 | 4 | 5 | 20 | | 5 | 360 | 1,800 | |
| 3-Mycology / Parasitology (3 PIs) | 3 | 4 | | 12 | 20% | 4 | 4 | 5 | 20 | | 5 | 360 | 1,800 | |
| SUBTOTAL Wet Lab | 10 | | | 40 | | 13 | | | 65 | | 16.25 | | 5,850 | |
| Research Lab - Dry | | | | | | | | | | | | | | Currently 10 Grad Students and 1 post doc.; Typically 2 Post Docs per office. 4 grad students; Want to be near PI and labs; Research Associates or Techs. – May have |
| Write Up Space (Outside of Lab) | | | | | | | | | | 52 | | 48 | 2,496 | |
| SUBTOTAL Dry Lab | 0 | | | 0 | | 0 | | | | | | | 2,496 | Note: Staff count EXCLUDES front office dept. staff |
| Laboratory Support | | | | | | | | | | | | | | |
| Refrigerator / Freezer Room | | | | | | | | | | 1 | | 462 | 462 | Needs to accommodate (12) -80 freezers |
| Cold Room | | | | | | | | | | 1 | | 195 | 195 | Shared intra-dept.; currently 2 @ 60 sf each |
| Warm Room | | | | | | | | | | 1 | | 195 | 195 | Shared intra-dept.; currently 1 @ 60 sf |
| Tissue Culture | | | | | | | | | | 1 | | 341 | 341 | |
| Microscopy Room | | | | | | | | | | 1 | | 225 | 225 | live-cell tissue / fluorescence microscopy |
| Prep / Equipment / Instr. Room | | | | | | | | | | 1 | | 462 | 462 | Incl. PCR, qel imaging, plate readers, tissue processors, etc. |
| Liquid Nitrogen Room | | | | | | | | | | | | | | Included in Shared Support Below 1 per floor |
| Dry Storage | | | | | | | | | | 0 | | 0 | 0 | In-lab storage (base cabinetry plus perimeter shelving) |
| Equipment Hold | | | | | | | | | | 1 | | 225 | 225 | Could be Linear Equipment Storage Rooms (Alcoves off Wet Lab & Lab Support Spaces) |
| Chemical Storage | | | | | | | | | | 0 | | 0 | 0 | In-lab storage (approved flammable liquid storage cabinetry) |
| Autoclave / Waste Holding | | | | | | | | | | | | | | Included in Shared Support Below Shared 1 central per floor |
| Media Prep / Sterilizer | | | | | | | | | | | | | | Included in Shared Support Below Shared 1 central per floor |
| Fume Hood Alcove | | | | | | | | | | 8 | | 110 | 880 | 1 FH per (2) PI's plus 20% (13/2 = 6.5 x 1.20 = 3.9 ~ 8 FH) |
| Radioisotope Lab | | | | | | | | | | 0 | | 0 | 0 | Will use one in the other department |
| PCR Lab | | | | | | | | | | 0 | | 0 | 0 | In Prep / Equip / Instrument Room |
| Flow Cytometry | | | | | | | | | | 0 | | 0 | 0 | In core facility elsewhere |
| Biohazard / Containment (BSL3) | | | | | | | | | | 0 | | 0 | 0 | Use of BSL3 facility in CSRB |
| Shop | | | | | | | | | | 0 | | 0 | 0 | None req'd for this dept. - use existing on 2 |
| Misc. | | | | | | | | | | 0 | | 0 | 0 | None req'd for this dept. - use existing on 2 |
| Shared Support (In-Core Facility) | | | | | | | | | | | | | | |
| Autoclave / Waste Holding | | | | | | | | | | | | | | Included in Shared Support Core Shared 1 Central per floor |
| Media Prep / Sterilizer | | | | | | | | | | | | | | Included in Shared Support Core Shared 1 Central per floor |
| Radioisotope Lab | | | | | | | | | | | | | | Included in Shared Support Core Shared 1 Central per floor |
| SUBTOTAL Lab Support | | | | | | | | | | | | | 2,985 | |
| DEPARTMENTAL SUBTOTAL Lab & Lab Support | 10 | | | 40 | | 13 | | | 65 | | | | 11,331 | Note: Staff count EXCLUDES front office dept. staff |

Figure: Functional Space Program - Microbiology & Immunology

FUNCTIONAL SPACE PROGRAM

MICROBIOLOGY & IMMUNOLOGY - OFFICE & ADMINISTRATION

| Prelim: 2022-01-13 Projected Space Requirements by | | Existing Program | | | | | Proposed Program | | | | | | | Remarks | |
|---|-------------|------------------|-----------------------------|---|-------------------|-----------------------|------------------|-----------------------------|---|---------------------|-------------|-------------|------------------------------|---------------|--|
| Program Group & Function | | Extg PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Extg No. of Staff | Proj PI Growth 10 yrs | PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Prjctd No. of Staff | Space Count | Lab Modules | NSF per Space | | NASF |
| OFFICE & ADMINISTRATION | | | | | | | | | | | | | | | |
| Office | | | | | | | | | | | | | | | |
| Department Head | Office | | | | | | | | | | 1 | | 225 | 225 | Dept. Head is a PI |
| Principal Investigator | Office | | | | | | | | | | 12 | | 130 | 1,560 | Excludes Dept. Head PI |
| Business Manager | Office | | | | 1 | | | | 1 | 1 | | | 130 | 130 | |
| Assistant Business Manager | Office | | | | 1 | | | | 1 | 1 | | | 130 | 130 | |
| SUBTOTAL Office Space | | | | | 2 | | | | 2 | 15 | | | | 2,045 | |
| Administrative Staff | | | | | | | | | | | | | | | |
| | Open Office | | | | 2 | | | | 2 | 2 | | | 130 | 260 | |
| SUBTOTAL Admin. Staff | | | | | 2 | | | | 2 | 2 | | | | 260 | Note: Staff count INCLUDES front office dept. staff |
| Administrative Support | | | | | | | | | | | | | | | |
| Conference - Large | | | | | | | | | | | | | | | Included in Shared Support Below 1 per floor |
| Conference - Small | | | | | | | | | | 1 | | | 300 | 300 | per department - 6-10 people |
| Copy/Print/Mail Room | | | | | | | | | | 1 | | | 150 | 150 | |
| Supply Closet | | | | | | | | | | 1 | | | 60 | 60 | |
| Coffee / Break Area | | | | | | | | | | | | | | | Included in Shared Support Below 1 per floor |
| File Room | | | | | | | | | | 1 | | | 80 | 80 | |
| Conference Service | | | | | | | | | | 0 | | | 0 | 0 | |
| Reading / Study Room | | | | | | | | | | 0 | | | 0 | 0 | |
| Misc. | | | | | | | | | | 0 | | | 0 | 0 | |
| SUBTOTAL Admin. Support | | | | | | | | | | | | | | 590 | |
| DEPARTMENTAL SUBTOTAL Office Space, Admin Staff, Admin Support | | | | | 4 | | | | 4 | 4 | | | | 2,895 | Note: Staff count excludes Dept. head and Pis. They are accounted for in Lab Staff Count |
| MICROBIOLOGY & IMMUNOLOGY TOTAL | | 10 | 0 | | 44 | | 13 | | 69 | | | | | 14,226 | Note: Staff count INCLUDES Lab & office dept. staff |
| | | | | | | | | | | | | | Dept. Grossing Factor | 1.25 | 17,783 |

Figure: Functional Space Program - Microbiology & Immunology

FUNCTIONAL SPACE PROGRAM

ANATOMY & CELL BIOLOGY - LABORATORY & SUPPORT

| Prelim: 2022-01-13 Projected Space Requirements by Program Group & Function | Existing Program | | | | | Proposed Program | | | | | | | | Remarks |
|---|------------------|-----------------------------|---|-------------------|-----------------------|------------------|-----------------------------|---|---------------------|-------------|-------------|---------------|---|---------|
| | Extg PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Extg No. of Staff | Proj PI Growth 10 yrs | PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Prjctd No. of Staff | Space Count | Lab Modules | NSF per Space | NASF | |
| ANATOMY & CELL BIOLOGY | | | | | | | | | | | | | | |
| LABORATORY & SUPPORT | | | | | | | | | | | | | | |
| Laboratory | | | | | | | | | | | | | | |
| Research Lab - Wet | 5 | 4 | 5 | 25 | 3 | 8 | 4 | 5 | 40 | 10.00 | 360 | 3,600 | 8 PI'S X 5 per res group (1 PI + 4) = 40 staff x 10 LF bench ea. = 400 LF / 40 ELF per module = 10 lab modules | |
| SUBTOTAL Wet Lab | 5 | | 5 | 25 | | 8 | | 5 | 40 | | 360 | 3,600 | | |
| Research Lab - Dry | | | | | | | | | | | | | | |
| Computational | 1 | 4 | 5 | 5 | 2 | 3 | 4 | 5 | 15 | 5.00 | 236 | 1,180 | 3 PI'S X 5 per res group (1 PI + 4) = 15 staff x 10 LF bench ea. = 150 LF / 30 ELF per 2/3 module = 5 dry lab modules | |
| Write Up Space (Outside of Lab) | | | | | | | | | | 32 | 48 | 1,536 | | |
| SUBTOTAL Dry Lab | 1 | | | 5 | | 3 | | 15 | | | | 2,716 | Note: Staff count EXCLUDES front office dept. staff | |
| Laboratory Support | | | | | | | | | | | | | | |
| Refrigerator / Freezer Room | | | | | | | | | | 1 | 225 | 225 | Freezers (4 Minus 80 , 1 per 2 PIs); shared farm intra-dept. | |
| Cold Room | | | | | | | | | | 1 | 195 | 195 | | |
| Tissue Culture | | | | | | | | | | 1 | 225 | 225 | 1 cell culture room w/ 2 BSC's | |
| Microscopy Room | | | | | | | | | | 1 | 225 | 225 | incl. 2-photon & fluorescence microscopes (shared ?) | |
| Prep / Equipment / Instr. Room | | | | | | | | | | 1 | 462 | 462 | Shared (?) | |
| Dry Storage | | | | | | | | | | 0 | 0 | 0 | In-lab storage (base cabinetry plus perimeter shelving) | |
| Equipment Hold (new) | | | | | | | | | | 1 | 225 | 225 | Could be Linear Equipment Storage Rooms (Alcoves off Wet Lab & Lab | |
| Chemical Storage | | | | | | | | | | 0 | 0 | 0 | In-lab storage (approved flammable liquid storage cabinetry) | |
| Autoclave / Waste Holding | | | | | | | | | | | | | Included in Shared Support Core Shared 1 central per floor | |
| Media Prep / Sterilizer | | | | | | | | | | | | | Included in Shared Support Core Shared 1 central per floor | |
| Viral Injection Room | | | | | | | | | | 1 | 110 | 110 | | |
| Electrophysiology Room | | | | | | | | | | 1 | 225 | 225 | 2 rigs per PI / 2 rigs per room = 16 rigs | |
| Media Studio | | | | | | | | | | 0 | 225 | 0 | Could be located on 2nd floor | |
| Fume Hood Alcove | | | | | | | | | | 5 | 55 | 275 | 1 FH per (2) PI's plus 20% (8/2 = 4 x 1.20 = 4.8 ~ 5 FH) | |
| SUBTOTAL Lab Support | | | | | | | | | | | | 2,167 | | |
| DEPARTMENTAL SUBTOTAL Wet Lab, Dry Lab & Lab Support | 6 | | | 30 | | 11 | | 55 | | | | 8,483 | | |
| Animal Facilities (In Shared Core Facility) | | | | | | | | | | | | | | |
| Animal Holding Room-Mice Single | | | | | | | | | | 1 | 225 | 225 | 1 small; 675 Mice Holding Capacity is more than enough | |
| Animal Holding Room-Mice Double | | | | | | | | | | 0 | 462 | 0 | | |
| Animal Holding Room-Rat Single | | | | | | | | | | 0 | 225 | 0 | | |
| Animal Holding Room-Rat Double | | | | | | | | | | 0 | 462 | 0 | | |
| Animal Holding Room-Fruit Flies | | | | | | | | | | 0 | 331 | 0 | includes area for vestibule | |
| Animal Procedure-Single | | | | | | | | | | 1 | 225 | 225 | 1 small; | |
| Animal Procedure-Double | | | | | | | | | | 0 | 462 | 0 | | |
| Animal Behavioral-Single | | | | | | | | | | 1 | 225 | 225 | 1 small | |
| Animal Behavioral-Double | | | | | | | | | | 0 | 225 | 0 | | |
| Animal Necropsy | | | | | | | | | | 0 | 225 | 0 | | |
| Animal Vapor Delivery | | | | | | | | | | 0 | 225 | 0 | | |
| Animal Imaging | | | | | | | | | | | | | Included in Shared Animal Support w/ small table top in-vivo imaging equipment plus ultrasound set-up; | |
| ANIMAL SUBTOTAL In Shared Core Facility | | | | | | | | | | | | 675 | | |
| DEPARTMENTAL SUBTOTAL Wet Lab, Dry Lab, Lab Support & Animal Spaces | | | | | | | | | | | | 9,158 | Note: Staff count EXCLUDES front office dept. staff | |

Figure: Functional Space Program - Anatomy & Cell Biology

FUNCTIONAL SPACE PROGRAM

ANATOMY & CELL BIOLOGY - OFFICE & ADMINISTRATION

| Prelim: 2022-01-13 Projected Space Requirements by | | Existing Program | | | | | Proposed Program | | | | | | | Remarks | |
|---|---|------------------|-----------------------------|---|-------------------|-----------------------|------------------|-----------------------------|---|---------------------|-------------|-------------|---|---------------|---|
| Program Group & Function | | Extg PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Extg No. of Staff | Proj PI Growth 10 yrs | PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Prjctd No. of Staff | Space Count | Lab Modules | NSF per Space | | NASF |
| OFFICE & ADMINISTRATION | | | | | | | | | | | | | | | |
| Office | | | | | | | | | | | | | | | |
| Department Head | Office | | | | | | | | | | 1 | | 225 | 225 | Note: Dept. head is a PI |
| Principal Investigator | Office | | | | | | | | | | 10 | | 130 | 1,300 | Note: Excludes Dept. Head who is also a PI |
| Business Manager | Office | | | | 1 | | | | 1 | 1 | | | 130 | 130 | |
| Assistant Business Manager | Office | | | | 1 | | | | 1 | 1 | | | 130 | 130 | |
| SUBTOTAL | Office Space | | | | 2 | | | | 2 | 13 | | | | 1,785 | |
| Administrative Staff | | | | | | | | | | | | | | | |
| Administrative Assistants | Open Office Area | | | | 2 | | | | 2 | 1 | | | 260 | 260 | Shared Space Size of 2 offices |
| SUBTOTAL | Admin. Staff | | | | 2 | | | | 2 | 1 | | | | 260 | Note: Staff count INCLUDES front office dept. staff |
| DEPARTMENTAL SUBTOTAL | Office and Administrative | 0 | | | 4 | | | | 4 | 14 | | | | 2,045 | |
| Office (Special) | | | | | | | | | | | | | | | |
| Teaching Faculty/Pis | Office | | | | 10 | | | | 10 | 10 | | | 130 | 1,300 | Note: May or May not be on top 3 floors |
| SUBTOTAL | Office Space-Special | 0 | | | 10 | | | | 10 | 10 | | | | 1,300 | |
| DEPARTMENTAL SUBTOTAL | Office, Administrative and Special Office | 0 | | | 14 | | | | 14 | 24 | | | | 3,345 | |
| Administrative Support | | | | | | | | | | | | | | | |
| Conference - Large | | | | | | | | | | | | | | | Included in Shared Support below 1 per floor |
| Conference - Small | | | | | | | | | | | | | 1 | 300 | per department - 6-10 people |
| Copy / Print / Mail Room | | | | | | | | | | | | | 1 | 150 | |
| Supply Closet | | | | | | | | | | | | | 1 | 60 | |
| Coffee / Break Area | | | | | | | | | | | | | | | Included in Shared Support below 1 per floor |
| File Room | | | | | | | | | | | | | 1 | 80 | |
| A/V, Radio, TV | | | | | | | | | | | | | 0 | 0 | |
| SUBTOTAL | Admin. Support | | | | | | | | | | | | | 590 | |
| DEPARTMENTAL SUBTOTAL | Office, Admin Staff & Admin. Support | | | | | | | | | | | | | 2,635 | |
| DEPARTMENTAL SUBTOTAL | Office, Office Special, Admin Staff & Admin. Support | | | | | | | | | | | | | 3,935 | |
| ANATOMY & CELL BIOLOGY TOTAL (excludes Special Office & Animal Space at Shared Facility) | | 6 | | | 34 | | 11 | | 59 | | | | | 10,528 | |
| ANATOMY & CELL BIOLOGY TOTAL (includes Special Office, excludes Animal Space) | | 6 | | | 34 | | 11 | | 59 | | | | | 12,418 | |
| ANATOMY & CELL BIOLOGY TOTAL (includes Special Office & Animal Space at Shared Facility) | | 6 | | | 44 | | 11 | | 69 | | | | | 13,093 | |
| | | | | | | | | | | | | | w/ Dept. Grossing Factor (excludes Special Office & Animal Space) | 1.25 | 13,160 |
| | | | | | | | | | | | | | w/ Dept. Grossing Factor (includes Special Office, excludes Animal Space) | 1.25 | 15,523 |
| | | | | | | | | | | | | | w/ Dept. Grossing Factor (includes Special Office & Animal Space) | 1.25 | 16,366 |

Figure: Functional Space Program - Anatomy & Cell Biology

FUNCTIONAL SPACE PROGRAM

PHARMACOLOGY - LABORATORY & SUPPORT

| Prelim: 2022-02-11 Projected Space Requirements by Program Group & Function | Existing Program | | | | | Proposed Program | | | | | | | | Remarks |
|---|------------------|-----------------------------|---|-------------------|-----------------------|------------------|-----------------------------|---|---------------------|-------------|-------------|---------------|---------------|--|
| | Extg PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Extg No. of Staff | Proj PI Growth 10 yrs | PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Prjctd No. of Staff | Space Count | Lab Modules | NSF per Space | NASF | |
| PHARMACOLOGY | | | | | | | | | | | | | | |
| LABORATORY & SUPPORT | | | | | | | | | | | | | | |
| Laboratory | | | | | | | | | | | | | | |
| Research Lab - Wet | 9 | 4 | 5 | 45 | 6 | 15 | 4 | 5 | 75 | | 19 | 360 | 6,840 | 15 PI'S X 5 per res group (1 PI + 4) = 75 staff x 10 LF bench ea. = 750 LF / 40 ELF per bench |
| SUBTOTAL Wet Lab | 9 | | | 45 | 6 | 15 | | 4 | 75 | | | | 6,840 | |
| Research Lab - Dry | | | | | | | | | | | | | | |
| Write Up Space (Outside of Lab) | | | | | | | | | | 60 | | 48 | 2,880 | no computation |
| SUBTOTAL Dry Lab | 0 | | | 0 | | 0 | | 0 | 0 | | | | 2,880 | Note: Staff count EXCLUDES front office dept. staff |
| Laboratory Support | | | | | | | | | | | | | | |
| Refrigerator / Freezer Room | | | | | | | | | | 1 | | 462 | 462 | Allow for (15) -80's (1 per PI incl growth); shared farm intra-dept. |
| Cold Room | | | | | | | | | | 0 | | 0 | 0 | |
| Tissue Culture | | | | | | | | | | 4 | | 225 | 900 | Each w/ 5 foot BSC |
| Microscopy Room | | | | | | | | | | 3 | | 225 | 675 | |
| Prep / Equipment / Instr. Room | | | | | | | | | | 1 | | 462 | 462 | Incl. scintillation counter |
| Dry Storage-Equip Hold | | | | | | | | | | 1 | | 200 | 200 | In-lab storage (base cabinetry plus perimeter shelving) |
| Equipment Hold | | | | | | | | | | 1 | | 225 | 225 | Could be Linear Equipment Storage Rooms (Alcoves off Wet Lab & Lab Support Spaces) |
| Chemical Storage | | | | | | | | | | 0 | | 0 | 0 | In-lab storage (approved flammable liquid storage cabinetry) |
| Autoclave / Waste Holding | | | | | | | | | | | | | | Included in shared support core |
| Media Prep / Sterilizer | | | | | | | | | | | | | | Shared 1 central per floor |
| Electrophysiology Room | | | | | | | | | | 3 | | 225 | 675 | 2 rigs per room |
| Warm Room | | | | | | | | | | 0 | | 0 | 0 | Warm room not required |
| Fume Hood Alcove | | | | | | | | | | 5 | | 55 | 275 | 1 FH per (4) PI's plus 20% (15/4 = 3.75 x 1.20 = 4.5 ~ 5 FH); distribute evenly throughout lab, Could be 4ft FHs |
| LAB SUPPORT SUBTOTAL Lab Support | | | | | | | | | | | | | 3,874 | |
| DEPARTMENTAL SUBTOTAL Wet Lab, Dry Lab & Lab Support | 9 | | | 45 | | 15 | | 75 | | | | | 13,594 | |
| Animal Facilities (In Shared Core Facility) | | | | | | | | | | | | | | |
| Animal Holding Room-Mice Single | | | | | | | | | | 1 | | 225 | 225 | 1 each for mice |
| Animal Holding Room-Mice Double | | | | | | | | | | 0 | | 462 | 0 | |
| Animal Holding Room-Rat Single | | | | | | | | | | 1 | | 225 | 225 | 1 each for rats |
| Animal Holding Room-Rat Double | | | | | | | | | | 0 | | 462 | 0 | |
| Animal Holding Room-Fruit Flies-Single | | | | | | | | | | 1 | | 331 | 331 | 1 each for fruit flies; nsf includes vestibule |
| Animal Procedure Single | | | | | | | | | | 2 | | 225 | 450 | 2 dedicated rm's adequate assuming use of CSRB room(s) |
| Animal Procedure Double | | | | | | | | | | 0 | | 462 | 0 | |
| Animal Behavioral-Single | | | | | | | | | | 2 | | 225 | 450 | Each room w/ capacity for 15 sound-attenuating enclosures (w/ 15 "skinner" boxes) |
| Animal Behavioral-Double | | | | | | | | | | 0 | | 462 | 0 | |
| Animal Necropsy | | | | | | | | | | 0 | | 225 | 0 | |
| Animal Vapor Delivery | | | | | | | | | | 0 | | 225 | 0 | |
| Animal Imaging | | | | | | | | | | | | | | Included in shared Animal Support |
| SUBTOTAL Animal Facilities | | | | | | | | | | | | | 1,681 | w/ small table top in-vivo imaging equipment plus ultrasound set-up; |
| DEPARTMENTAL SUBTOTAL Wet Lab, Dry Lab, Lab Support & Animal Spaces | | | | | | | | | | | | | 15,275 | |

Figure: Functional Space Program - Pharmacology

FUNCTIONAL SPACE PROGRAM

PHARMACOLOGY - OFFICE & ADMINISTRATION

| Prelim: 2022-02-11 Projected Space Requirements by Program Group & Function | Existing Program | | | | | Proposed Program | | | | | | | | Remarks | |
|---|------------------|-----------------------------|---|-------------------|-----------------------|------------------|-----------------------------|---|---------------------|-------------|-------------|---------------|---------------|--|---|
| | Extg PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Extg No. of Staff | Proj PI Growth 10 yrs | PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Prjctd No. of Staff | Space Count | Lab Modules | NSF per Space | NASF | | |
| OFFICE & ADMINISTRATION | | | | | | | | | | | | | | | |
| Office | | | | | | | | | | | | | | | |
| Department Head | Office | | | | | | | | | 1 | | 225 | 225 | Dept Head is a PI | |
| Principal Investigator | Office | | | | | | | | | 14 | | 130 | 1,820 | Excludes Dept Head PI | |
| Business Manager | Office | | | | 1 | | | | 1 | 1 | | 130 | 130 | | |
| Assistant Business Manager | Office | | | | 1 | | | | 1 | 1 | | 130 | 130 | | |
| SUBTOTAL Office | | | | | 2 | | | | 2 | 17 | | | 2,305 | | |
| Administrative Staff | | | | | | | | | | | | | | | |
| Administrative Staff | Open office | | | | 2 | | | | 2 | 2 | | 130 | 260 | | |
| SUBTOTAL Admin. Staff | | | | | 2 | | | | 2 | 2 | | | 260 | | |
| Administrative Support | | | | | | | | | | | | | | | |
| Conference - Large | | | | | | | | | | | | | | Included in shared support below 1 per floor | |
| Conference - Small | | | | | | | | | | 1 | | 300 | 300 | per department - 6-10 people | |
| Copy/Print/Mail Room | | | | | | | | | | 1 | | 150 | 150 | | |
| Supply Closet | | | | | | | | | | 1 | | 60 | 60 | | |
| Coffee / Break Area | | | | | | | | | | | | | | Included in shared support below 1 per floor | |
| File Room | | | | | | | | | | 1 | | 80 | 80 | | |
| Conference Service | | | | | | | | | | | | | | | |
| Data Processing | | | | | | | | | | | | | | | |
| Misc. | | | | | | | | | | | | | | | |
| SUBTOTAL Admin.Support | | | | | | | | | | | | | 590 | | |
| DEPARTMENTAL SUBTOTAL Office, Administrative, Administrative Support | | | | | | | | | | | | | 3,155 | | |
| PHARMACOLOGY TOTAL (exclds Animal Space at Shared Facility) | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | 16,749 | | |
| PHARMACOLOGY TOTAL | | | | | | | | | | | | | | | |
| | | 9 | | | 45 | | | | 15 | | | | 75 | 18,430 | Note: Staff count INCLUDES front office dept. staff |

Figure: Functional Space Program - Pharmacology

FUNCTIONAL SPACE PROGRAM

PHYSIOLOGY - LABORATORY & SUPPORT

| Prelim: 2022-02-11 Projected Space Requirements by Program Group & Function | Existing Program | | | | | Proposed Program | | | | | | | | Remarks |
|---|------------------|-----------------------------|---|-------------------|-----------------------|------------------|-----------------------------|---|---------------------|------------------------------------|-------------|---------------|--|---|
| | Extg PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Extg No. of Staff | Proj PI Growth 10 yrs | PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Prjctd No. of Staff | Space Count | Lab Modules | NSF per Space | NASF | |
| PHYSIOLOGY | | | | | | | | | | | | | | |
| LABORATORY & SUPPORT | | | | | | | | | | | | | | |
| Laboratory | | | | | | | | | | | | | | |
| Research Lab - Wet | 9 | 4 | 5 | 45 | 5 | 14 | 4 | 5 | 70 | | 14.00 | 360 | 5,040 | 14PI'S X 5 per res group (1 PI + 4) = 70 staff x 10 LF bench ea. = 700LF / 40 ELF per module = 17.5 modules ~ 18 modules |
| SUBTOTAL Wet Lab | 9 | | | 45 | | 14 | | 5 | 70 | | | | 5,040 | |
| Research Lab - Dry | | | | | | | | | | | | | | |
| Write Up Space (Outside of Lab) | | | | | | | | | | 56 | | 48 | 2,688 | Should be close to behavioral space and wet labs |
| SUBTOTAL Dry Lab | 0 | | | 0 | | 0 | | 0 | 0 | | | | 2,688 | |
| Laboratory Support | | | | | | | | | | | | | | |
| Refrigerator / Freezer Room | | | | | | | | | | 2 | | 225 | 450 | (12) -80freezer |
| Cold Room | | | | | | | | | | 1 | | 190 | 190 | cold room |
| Tissue Culture | | | | | | | | | | 2 | | 225 | 450 | 1 for primary rodent & cell lines; 1 for human & primate samples |
| Microscopy Room | | | | | | | | | | 2 | | 225 | 450 | 1 light; 1 fluorescence |
| Prep / Equipment / Instr. Room | | | | | | | | | | 1 | | 462 | 462 | Incl. PCR machines, imagers, plate readers and microscopes |
| Dry Storage | | | | | | | | | | 0 | | 0 | 0 | In-lab storage (base cabinetry plus perimeter shelving) |
| Equipment Hold | | | | | | | | | | 1 | | 225 | 225 | |
| Chemical Storage | | | | | | | | | | 0 | | 0 | 0 | In-lab storage (approved flammable liquid storage cabinetry) |
| Autoclave / Waste Holding | | | | | | | | | | Included in shared support core | | | Shared 1 central per floor | |
| Media Prep / Sterilizer | | | | | | | | | | Included in shared support core | | | Shared 1 central per floor | |
| Electrophysiology Room | | | | | | | | | | 2 | | 225 | 450 | 1 each for rats & mice; 2 rigs each |
| Dark Room | | | | | | | | | | 1 | | 110 | 110 | Room houses an auto developer |
| Radioisotope Lab | | | | | | | | | | Included in shared support core | | | | |
| Histology Lab | | | | | | | | | | 1 | | 225 | 225 | Volume of specimens / equip must be verified for room size |
| Fume Hood Alcove | | | | | | | | | | 9 | | 55 | 495 | 1 FH per (2) PI's plus 20% (14/2 = 7 x 1.20 = 8.4) 9 evenly distributed |
| SUBTOTAL Lab Support | | | | | | | | | | | | | 3,507 | |
| DEPARTMENTAL SUBTOTAL Wet Lab, Dry Lab & Lab Support | 9 | | | 45 | | 14 | | 5 | 70 | | | | 11,235 | |
| Animal Facility | | | | | | | | | | | | | | |
| Animal Holding Room-Mice Single | | | | | | | | | | 2 | | 225 | 450 | For mice - capacity for 225 cages ~ 675 mice @ 3 per cage |
| Animal Holding Room-Mice Double | | | | | | | | | | 0 | | 462 | 0 | |
| Animal Holding Room-Rat Single | | | | | | | | | | 1 | | 225 | 225 | |
| Animal Holding Room-Rat Double | | | | | | | | | | 1 | | 462 | 462 | For rats - capacity for 595 cages ~ 595 rats @ 1 per cage |
| Animal Holding Room-Fruit Flies | | | | | | | | | | 0 | | 225 | 0 | |
| Animal Procedure - Single | | | | | | | | | | 3 | | 225 | 675 | 1 for cardiac cath & vascular reactivity; 1 for vessel isolation & functional measures (could be shared) |
| Animal Procedure - Double | | | | | | | | | | 2 | | 462 | 924 | 1 each for rats & mice |
| Animal Behavioral-Single | | | | | | | | | | 3 | | 225 | 675 | (could be shared);camera's |
| Animal Behavioral-Double | | | | | | | | | | 3 | | 462 | 1,386 | Capacity for 30 sound-attenuating enclosures (w/ 30 "skinner" boxes) 2 for rats; 1for mice (could be shared) (could be shared) min. 28 skinner boxes per room |
| Animal Necropsy | | | | | | | | | | 2 | | 225 | 450 | 1 each for rats & mice; 2 fh; Shared with Pharmacology |
| Animal Vapor Delivery | | | | | | | | | | 4 | | 225 | 900 | 2 each for rats & mice (day/night cycle + reverse cycle); includes ventilated animal racks (could be shared) |
| Animal Imaging | | | | | | | | | | 1 Included in shared support below | | | w/ small table top in-vivo imaging equipment plus ultrasound set-up; | |
| SUBTOTAL Animal Facility | | | | | | | | | | | | | 6,147 | |
| DEPARTMENTAL SUBTOTAL Wet Lab, Dry Lab, Lab Support & Animal Spaces | | | | | | | | | | | | | 17,382 | |

Figure: Functional Space Program - Physiology

FUNCTIONAL SPACE PROGRAM

PHYSIOLOGY - OFFICE & ADMINISTRATION

| Prelim: 2022-02-11 Projected Space Requirements by Program Group & Function | | Existing Program | | | | Proposed Program | | | | | | | | Remarks |
|---|---------------|------------------|-----------------------------|---|-------------------|-----------------------|----|-----------------------------|---|---------------------|-------------|-------------|---------------|--|
| | | Extg PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Extg No. of Staff | Proj PI Growth 10 yrs | PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Prjctd No. of Staff | Space Count | Lab Modules | NSF per Space | |
| OFFICE & ADMINISTRATION | | | | | | | | | | | | | | |
| Office | | | | | | | | | | | | | | |
| Department Head | Office | | | | | | | | | 1 | | 225 | 225 | Dept. Head is a PI |
| Principal Investigator | Office | | | | | | | | | 14 | | 130 | 1,820 | Excludes Dept. Head PI |
| Business Manager | Office | | | | 1 | | | | 1 | 1 | | 130 | 130 | |
| Assistant Business Manager | Office | | | | 1 | | | | 1 | 1 | | 130 | 130 | |
| Teaching Faculty | Office | | | | 2 | | | | 2 | 2 | | 130 | 260 | 2 persons |
| Non-Research Faculty | Shared Office | | | | 2 | | | | 2 | 1 | | 130 | 130 | Office shared by 2 persons |
| SUBTOTAL Office | | | | | 6 | | | | 6 | 20 | | | 2,695 | |
| Administrative Staff | | | | | | | | | | | | | | |
| Administrative Staff | Open Office | | | | 2 | | | | 2 | 2 | | 130 | 260 | |
| SUBTOTAL Admin. Staff | | | | | 2 | | | | 2 | 2 | | | 260 | |
| Administrative Support | | | | | | | | | | | | | | |
| Conference - Large | | | | | | | | | | | | | | Included in shared support below 1 per floor |
| Conference - Small | | | | | | | | | | 1 | | 300 | 300 | per department - 6-10 people |
| Copy / Print / Mail Room | | | | | | | | | | 1 | | 150 | 150 | |
| Supply Closet | | | | | | | | | | 1 | | 60 | 60 | |
| Coffee / Break Area | | | | | | | | | | | | | | Included in shared support below 1 per floor |
| File Room | | | | | | | | | | 1 | | 80 | 80 | |
| Lounge | | | | | | | | | | | | | | |
| Misc. | | | | | | | | | | | | | | |
| SUBTOTAL Admin. Support | | | | | | | | | | | | | 590 | |
| DEPARTMENTAL TOTAL Office, Administrative, Admin. Support | | | | | | | | | | | | | 3,545 | |
| PHYSIOLOGY TOTAL (exclds Animal Space at Shared Facility) | | | | | | | | | | | | | | |
| PHYSIOLOGY TOTAL | | 9 | | | 45 | | | | 14 | | | | 20,927 | Note: Staff count INCLUDES front office dept. staff |

Figure: Functional Space Program - Physiology

PROGRAM DRIVERS

SHARED LAB SUPPORT

| Prelim: 2022-01-13 Projected Space Requirements by Program Group & Function | Existing MEB / CSRB | | | | | Proposed Program | | | | | | Remarks |
|---|---------------------|-------------|----------|---------------|------|------------------|--------------|------------|-------------------|---------------|--------------|--|
| | No. of Staff | Space Count | Room No. | NSF per Space | NASF | Cell Biology | Pharmacology | Physiology | Total Space Count | NSF per Space | NASF | |
| SHARED | | | | | | | | | | | | |
| LABORATORY & SUPPORT | | | | | | | | | | | | |
| Laboratory Support | | | | | | | | | | | | |
| Autoclave / Waste Holding | | | | | | | | | 3 | 300 | 900 | Shared 1 central per floor; 2 small autoclaves and 1 glass washer |
| Media Prep / Sterilizer | | | | | | | | | 3 | 225 | 675 | Shared 1 central per floor; 1 small autoclave |
| Liquid Nitrogen Room | | | | | | | | | 3 | 225 | 675 | Shared 1 central per floor |
| Radioisotope Lab | | | | | | | | | 1 | 225 | 225 | w/ small table top in-vivo imaging equipment plus ultrasound set-up; |
| Chemical Waste Hold | | | | | | | | | 3 | 75 | 225 | 1 per floor; 10 gal flammable cabinet with Shelving |
| SUBTOTAL Lab & Lab Support | | | | | | | | | | | 2,700 | |
| ADMINISTRATIVE & SUPPORT | | | | | | | | | | | | |
| Administrative Support | | | | | | | | | | | | |
| Conference - Large | | | | | | | | | 3 | 800 | 2,400 | 1 per floor (needs to accommodate 50 persons) |
| Coffee / Lunch / Break Area | | | | | | | | | 3 | 800 | 2,400 | 1 per floor |
| SUBTOTAL Admin. Support | | | | | | | | | | | 4,800 | |
| BUILDING SERVICES | | | | | | | | | | | | |
| Building Services | | | | | | | | | | | | |
| Electrical Room | | | | | | | | | 12 | 130 | 1,560 | 4 per floor |
| IT Closet | | | | | | | | | 3 | 120 | 360 | 1 per floor |
| Janitors Closet | | | | | | | | | 3 | 100 | 300 | Mop Sink, Shelf, Cart; less than 60sf |
| All Gender Restroom (unisex) | | | | | | | | | 3 | 55 | 165 | 1 per floor |
| SUBTOTAL Building Services | | | | | | | | | | | 2,385 | |
| SHARED TOTAL | | | | | | | | | | | 9,885 | |

Figure: Program - Shared Lab Support

PROGRAM DRIVERS

NEW RESEARCH INITIATIVES - 5TH FLOOR

| Prelim: 2022-02-11 Projected Space Requirements by Program Group & Function | Existing Program | | | | | Proposed Program | | | | | | | | Remarks |
|---|------------------|-----------------------------|---|-------------------|-----------------------|------------------|-----------------------------|---|---------------------|-------------|-------------|---------------------------------|--------------|---|
| | Extg PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Extg No. of Staff | Proj PI Growth 10 yrs | PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Prjctd No. of Staff | Space Count | Lab Modules | NSF per Space | NASF | |
| RESEARCH INITIATIVES: 5TH FLOOR | | | | | | | | | | | | | | |
| LABORATORY & SUPPORT | | | | | | | | | | | | | | |
| Laboratory | | | | | | | | | | | | | | |
| Research Lab - Wet | | | | | | 3 | 4 | 5 | 15 | | 4.00 | 360 | 1,440 | 3PI'S X 5 per res group (1 PI + 4) = 15 staff x 10 LF bench ea. = 150LF / 40 ELF per module = 4 lab modules |
| <i>SUBTOTAL Wet Lab</i> | | | | | | 3 | | 5 | 15 | | | 360 | 1,440 | |
| Research Lab - Dry | | | | | | | | | | | | | | |
| Computational | | | | | | | | | | | | | | |
| Write Up Space (Outside of Lab) | | | | | | | | | | 12 | | 46 | 552 | |
| <i>SUBTOTAL Dry Lab</i> | | | | | | | | | 0 | 12 | | | 552 | |
| Laboratory Support | | | | | | | | | | | | | | |
| Fume Hood Alcove | | | | | | | | | | 4 | | 55 | 220 | 1 FH per (2) PI's plus 20% (8/2 = 4 x 1.20 = 4.8 ~ 5 FH) |
| <i>SUBTOTAL Lab Support</i> | | | | | | | | | | | | | 220 | |
| DEPARTMENTAL SUBTOTAL Wet Lab, Dry Lab & Lab Support | | | | | | 3 | | | 15 | | | | 2,212 | |
| OFFICE & ADMINISTRATION | | | | | | | | | | | | | | |
| Office | | | | | | | | | | | | | | |
| Principal Investigator | Office | | | | | | | | | 3 | | 130 | 390 | |
| Administrative Staff | | | | | | | | | | | | | | |
| <i>SUBTOTAL Admin. Staff</i> | | | | | | | | | 0 | 0 | | | 0 | |
| <i>SUBTOTAL Office Space</i> | | | | | | | | | 0 | 3 | | | 390 | |
| DEPARTMENTAL SUBTOTAL Office, Admin Staff & Admin. Support | | | | | | | | | | | | | 390 | |
| RESEARCH INITIATIVES 5TH FLOOR TOTAL | | | | | | | | | | | | | | |
| | | | | | | 3 | | | 15 | | | | 2,602 | |
| | | | | | | | | | | | | <i>w/ Dept. Grossing Factor</i> | 1.25 | 3,253 |

Figure: Program - New Research Initiatives 5th Floor

PROGRAM DRIVERS

NEW RESEARCH INITIATIVES - 6TH FLOOR

| Prelim: 2022-02-11 Projected Space Requirements by Program Group & Function | Existing Program | | | | | Proposed Program | | | | | | | | Remarks |
|---|------------------|-----------------------------|---|-------------------|-----------------------|------------------|-----------------------------|---|---------------------|-------------|-------------|--------------------------|--------|---|
| | Extg PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Extg No. of Staff | Proj PI Growth 10 yrs | PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Prjctd No. of Staff | Space Count | Lab Modules | NSF per Space | NASF | |
| RESEARCH INITIATIVES: 6TH FLOOR | | | | | | | | | | | | | | |
| LABORATORY & SUPPORT | | | | | | | | | | | | | | |
| Laboratory | | | | | | | | | | | | | | |
| Research Lab - Wet | | | | | | 10 | 4 | 5 | 50 | | 13.00 | 360 | 4,680 | 10PI'S X 5 per res group (1 PI + 4) = 50 staff x 10 LF bench ea. = 500LF / 40 ELF per module = 13 modules |
| SUBTOTAL Wet Lab | | | | | | 10 | | 5 | 50 | | | 360 | 4,680 | |
| Research Lab - Dry | | | | | | | | | | | | | | |
| Write Up Space (Outside of Lab) | | | | | | | | | | 40 | | 48 | 1,920 | |
| SUBTOTAL Dry Lab | | | | | | | | | 0 | | | | 1,920 | |
| Laboratory Support | | | | | | | | | | | | | | |
| Refrigerator / Freezer Room | | | | | | | | | | 1 | | 225 | 225 | |
| Cold Room | | | | | | | | | | 1 | | 195 | 195 | |
| Tissue Culture | | | | | | | | | | 2 | | 225 | 450 | |
| Microscopy Room | | | | | | | | | | 2 | | 225 | 450 | |
| Prep / Equipment / Instr. Room | | | | | | | | | | 1 | | 462 | 462 | |
| Equipment Hold | | | | | | | | | | 1 | | 225 | 225 | |
| Electrophysiology | | | | | | | | | | 2 | | 225 | 450 | |
| Histology | | | | | | | | | | 1 | | 225 | 225 | |
| Fume Hood Alcove | | | | | | | | | | 5 | | 55 | 275 | 1 FH per (2) PI's |
| SUBTOTAL Lab Support | | | | | | | | | | | | | 2,957 | |
| DEPARTMENTAL SUBTOTAL Wet Lab, Dry Lab & Lab Support | | | | | | | | | 50 | | | | 9,557 | |
| OFFICE & ADMINISTRATION | | | | | | | | | | | | | | |
| Office | | | | | | | | | | | | | | |
| Principal Investigator | | | | | | | | | | | | 11 | 130 | 1,430 |
| SUBTOTAL Office Space | | | | | | | | | 0 | 11 | | | 1,430 | |
| Administrative Staff | | | | | | | | | | | | | | |
| SUBTOTAL Admin. Staff | | | | | | | | | 0 | 0 | | | 0 | |
| DEPARTMENTAL SUBTOTAL Office and Administrative | | | | | | | | | 0 | | | | 1,430 | |
| RESEARH INITIATIVES 6H FLOOR TOTAL | 0 | | | 0 | | 0 | | | 50 | | | | 10,987 | |
| | | | | | | | | | | | | w/ Dept. Grossing Factor | 1.25 | 13,734 |

Figure: Program - New Research Initiatives 6th Floor

PROGRAM DRIVERS

NEW RESEARCH INITIATIVES - 7TH FLOOR

| Prelim: 2022-02-11 Projected Space Requirements by Program Group & Function | Existing Program | | | | | Proposed Program | | | | | | | | Remarks | |
|---|------------------|-----------------------------|---|-------------------|-----------------------|------------------|-----------------------------|---|---------------------|-------------|-------------|---|------------|---------|--|
| | Extg PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Extg No. of Staff | Proj PI Growth 10 yrs | PI | Avg # of Researchers per PI | Avg Research Group Size (PI + Researcher) | Prjctd No. of Staff | Space Count | Lab Modules | NSF per Space | NASF | | |
| RESEARCH INITIATIVES: 7TH FLOOR | | | | | | | | | | | | | | | |
| LABORATORY & SUPPORT | | | | | | | | | | | | | | | |
| Laboratory | | | | | | | | | | | | | | | |
| Research Lab - Wet | | | | | | 0 | 0 | 0 | 0 | | 0.00 | 360 | 0 | | |
| SUBTOTAL Wet Lab | | | | | | 0 | 0 | 0 | 0 | | | 360 | 0 | | |
| Research Lab - Dry | | | | | | | | | | | | | | | |
| Write Up Space (Outside of Lab) | | | | | | | | | | 8 | | 48 | 384 | | |
| SUBTOTAL Dry Lab | | | | | | | | | | | | | 384 | | |
| Laboratory Support | | | | | | | | | | | | | | | |
| Tissue Culture | | | | | | | | | | 0 | 0.00 | 225 | 0 | | |
| Microscopy Room | | | | | | | | | | 0 | | 225 | 0 | | |
| Fume Hood Alcove | | | | | | | | | | 0 | | 55 | 0 | | |
| SUBTOTAL Lab Support | | | | | | | | | | | | | 0 | | |
| DEPARTMENTAL SUBTOTAL Wet Lab, Dry Lab & Lab Support | | | | | | 0 | | | 0 | | | | 384 | | |
| OFFICE & ADMINISTRATION | | | | | | | | | | | | | | | |
| Office | | | | | | | | | | | | | | | |
| Principal Investigator | | | | | | | | | | 0 | | 130 | 0 | | |
| SUBTOTAL Office Space | | | | | | | | | 0 | 0 | | | 0 | | |
| Administrative Staff | | | | | | | | | | | | | | | |
| Administrative Assistants | | | | | | | | | 0 | 0 | | 260 | 0 | | |
| SUBTOTAL Admin. Staff | | | | | | | | | 0 | 0 | | | 0 | | |
| DEPARTMENTAL SUBTOTAL Office and Administrative | | | | | | | | | 0 | 0 | | | 0 | | |
| RESEARCH INITIATIVES 7TH FLOOR TOTAL | 0 | | | 0 | | 0 | | | 0 | | | | 384 | | |
| | | | | | | | | | | | | w/ Dept. Grossing Factor (excludes Special Office & Animal Space) | 1.25 | 480 | |

Figure: Program - New Research Initiatives 7th Floor

PROGRAM DRIVERS

FACULTY & ADMINISTRATIVE OFFICE SPACE

1 per Department Head (225 NASF each)

1 per Business Manager (130 NASF each)

1 per Business Manager Assistant (130 NASF each)

1 per PI (130 NASF each)

Shared Admin... Space (260 NASF per 2 Admin.)

| Prelim: 2021-02-08 Projected Space Requirements by Program Group & Function | OFFICES | | Remarks |
|---|---------|-----------|-------------------------------------|
| | EXTG* | PROPOSED | |
| OFFICES | | | |
| Summary: | | | |
| BIOCHEMISTRY | | 12 | |
| MICROBIOLOGY & IMMUNOLOGY | | 15 | |
| ANATOMY & CELL BIOLOGY | | 13 | |
| PHARMACOLOGY | | 17 | |
| PHYSIOLOGY | | 1 | |
| PATHOLOGY | | 0 | Department to be relocated off site |
| RESEARCH INITIATIVES | | 13 | |
| Total | | 71 | |
| *No. of existing offices in MEB not provided | | | |

PROGRAM DRIVERS

FUME HOOD REQUIREMENTS

AVERAGE: 2 per PI

| Prelim: 2021-02-08 Projected Space Requirements by Program Group & Function | FUME HOODS | | Remarks |
|---|-------------|-----------|-------------------------------------|
| | EXTG* | PROPOSED | |
| FUME HOODS | | | |
| Summary | | | |
| BIOCHEMISTRY | | 9 | 1 FH per 2 PI'S + 60% |
| MICROBIOLOGY & IMMUNOLOGY | | 8 | 1 FH per 2 PI'S + 20% |
| ANATOMY & CELL BIOLOGY | | 5 | 1 FH per 2 PI'S + 20% |
| PHARMACOLOGY | | 5 | 1 FH per 4 PI 's + 20% |
| PHYSIOLOGY | | 1 | 1 FH per 2 PI'S + 20% |
| PATHOLOGY | | 0 | Department to be relocated off site |
| RESEARCH INITIATIVES | | 9 | 1 FH per 2 PI'S + 20% |
| Total | 115* | 37 | |
| * Souce: LSU MEB Lab Rennovation Report, Summer 2021 | | | |

3.2 Room Typologies

In parallel with the functional space program development, the team developed a set of typical “space typology” plans, essentially a series of individual “room” plans reflecting both general research and unique support functions that are associated with LSU Health specifically and bio-medical research laboratory facilities in general. These include, but are not limited to, a typical wet lab and dry lab, tissue culture, microscopy, electrophysiology room, cold room, freezer room, preparation & equipment room, autoclave / waste holding and media prep.

The purpose of these plan studies are to validate the applicability of the proposed standardized laboratory dimensional module to any current or future functional requirement as well as to establish the square foot floor areas assigned to the various functional spaces listed in the detailed functional space program.

In addition, given the extensive use of animal models by the departments of Anatomy/Cell Biology, Pharmacology and Physiology, typical animal holding, behavioral, imaging and procedure rooms were also developed using the proposed dimensional module.

It should be noted that the room typologies shown here-in are preliminary concept plans; bench and equipment layouts will be refined in the later design phases of the project. And given the modular organization of all spaces, can be adapted to those research team assignments as may be determined at time of project occupancy.

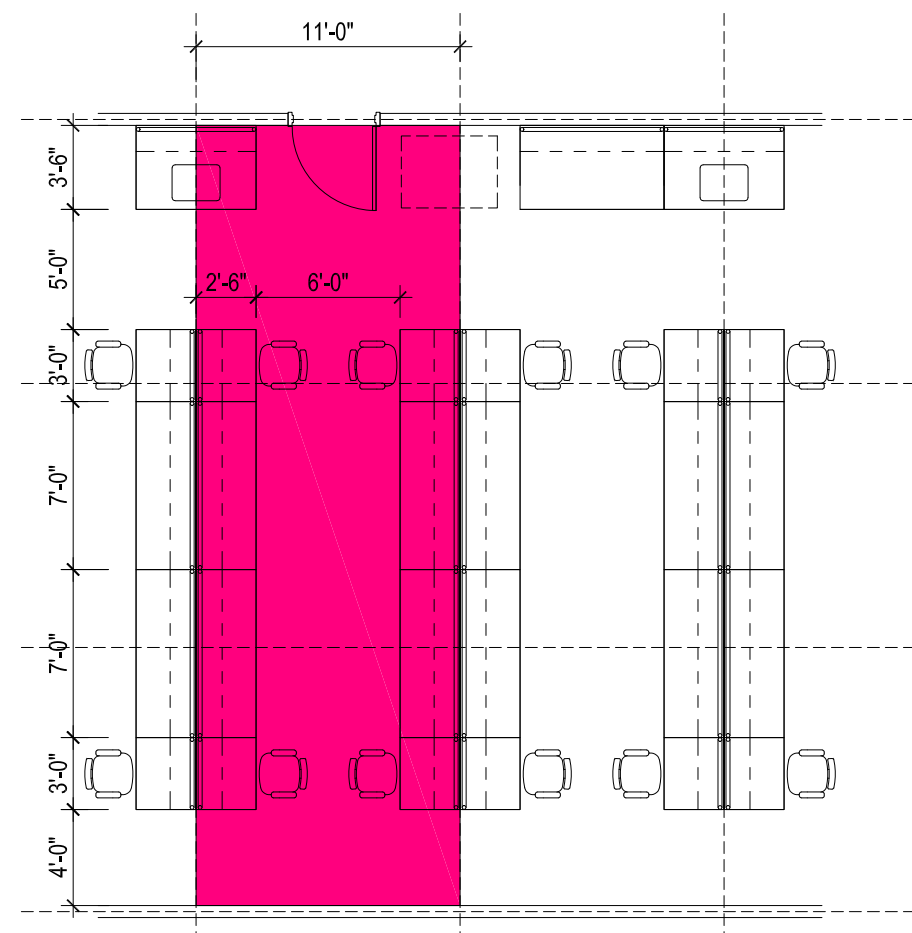


Figure: Wet Lab Module

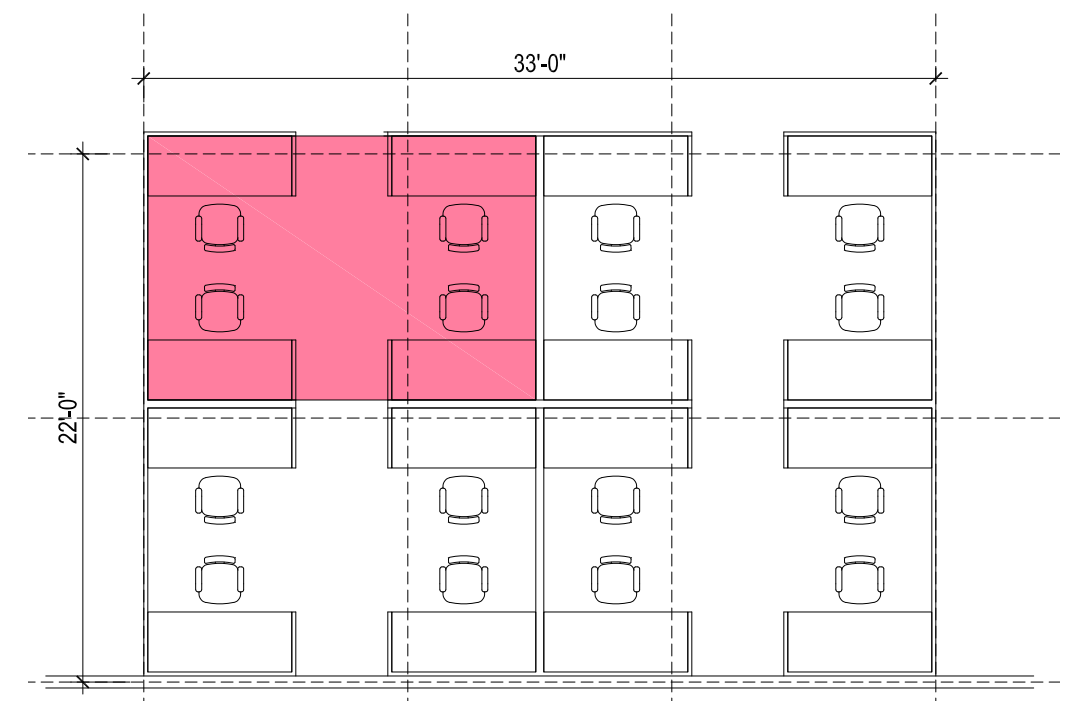


Figure: Computational / Write-Up

TEST FIT DEPARTMENTAL ALLOCATION

LEVEL 5 FLOOR PLAN



Figure: Test Fit Departmental Allocation - Level 5 Floor Plan

TEST FIT DEPARTMENTAL ALLOCATION LEVEL 6 FLOOR PLAN

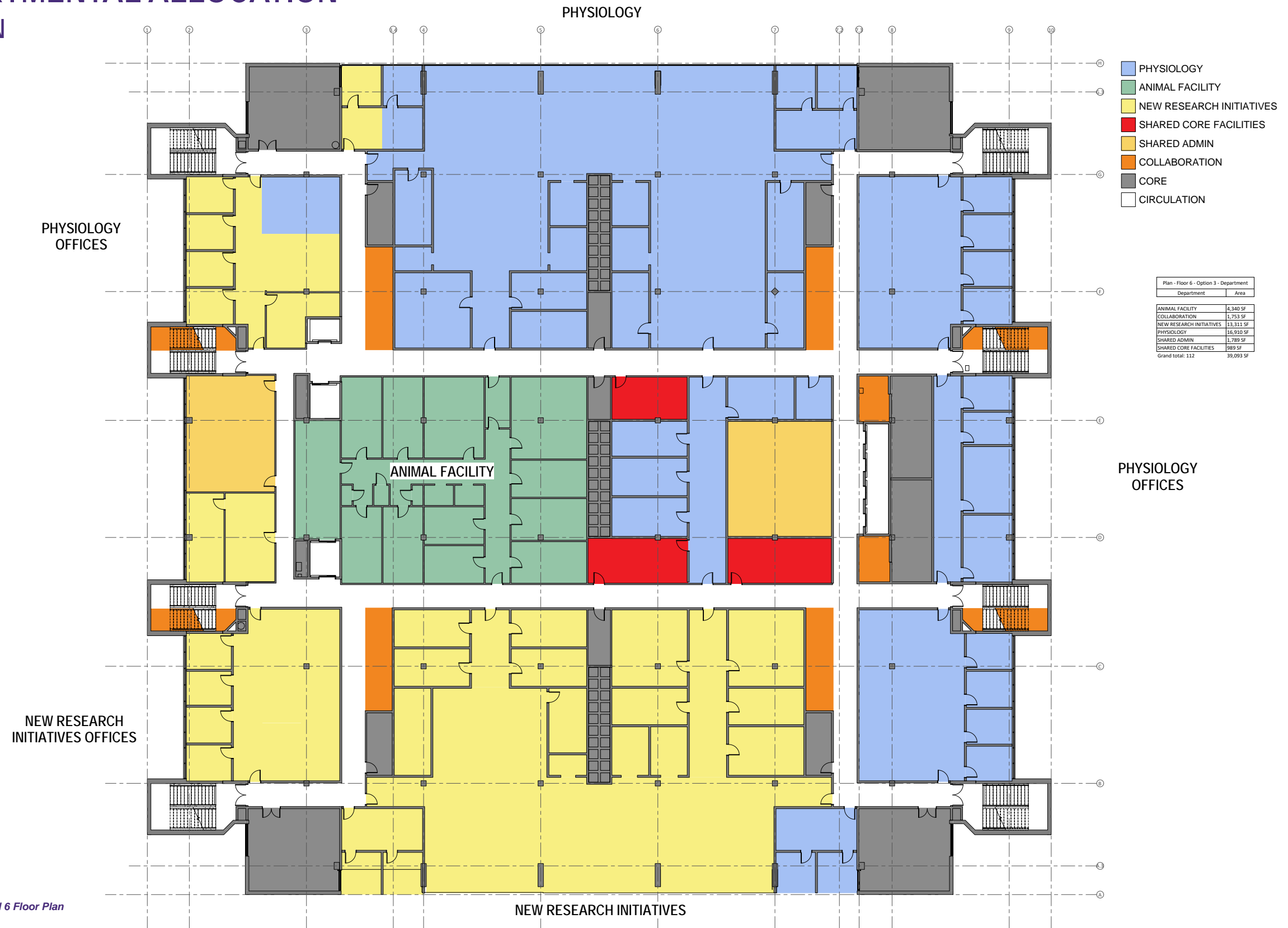


Figure: Test Fit Departmental Allocation - Level 6 Floor Plan

TEST FIT DEPARTMENTAL ALLOCATION

LEVEL 7 FLOOR PLAN



Figure: Test Fit Departmental Allocation - Level 7 Floor Plan

4.0 Engineering Approach

PROGRAM NARRATIVE FOR MEP

The following is the design teams understanding of the Owner’s project requirements, and related MEP considerations for the program space. Within the program comes existing conditions, and new MEP design requirements to meet current code, project design goals, which will be outlined to indicate the approach to achieve each goal.

SUSTAINABILITY DESIGN FOR RENOVATED SYSTEMS

In addition to adopting the goals mentioned in the Centralized Systems, the following strategies should be explored for 40% energy saving over the existing building energy consumption. In order to establish this metric, the design team will need to gather information for 12 months of electrical usage, broken down between HVAC and non-HVAC, which should include any chilled and hot water flow / energy metering (GPM/BTUH) available. In the absence of this data, we have established a working energy model that mimics the existing systems as best we understand, employing a means for comparison to how the proposed HVAC system will perform to meet LSU and State established requirements for the Louisiana Energy Codes.

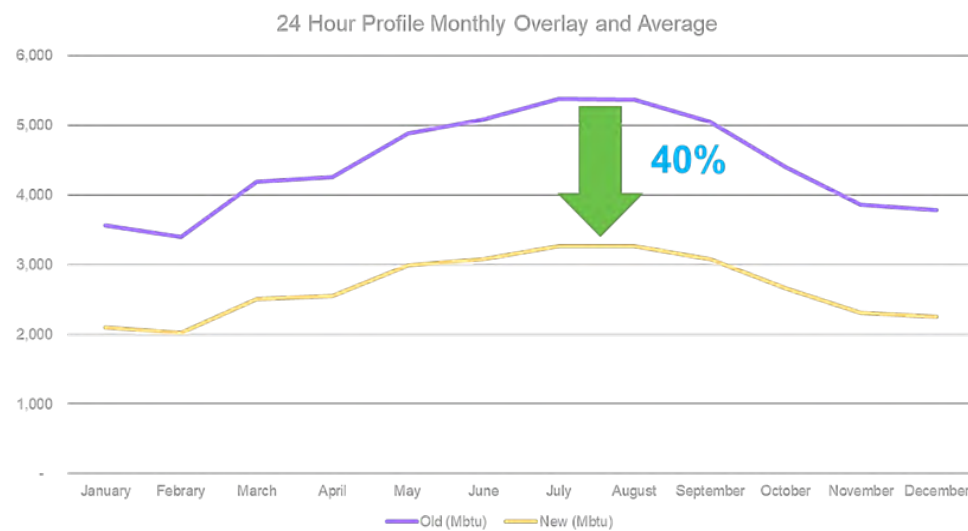


Figure: Energy Savings Goals

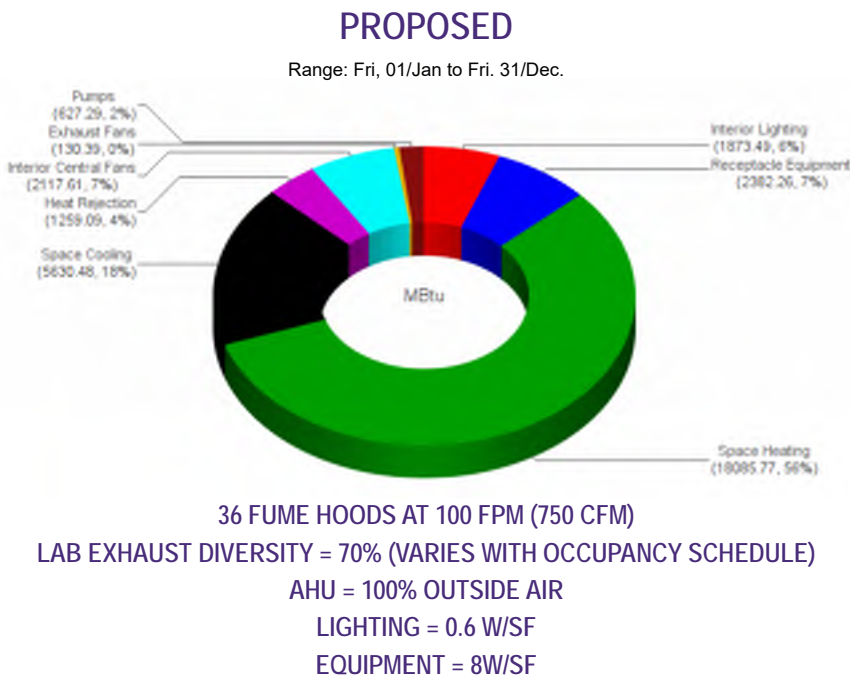
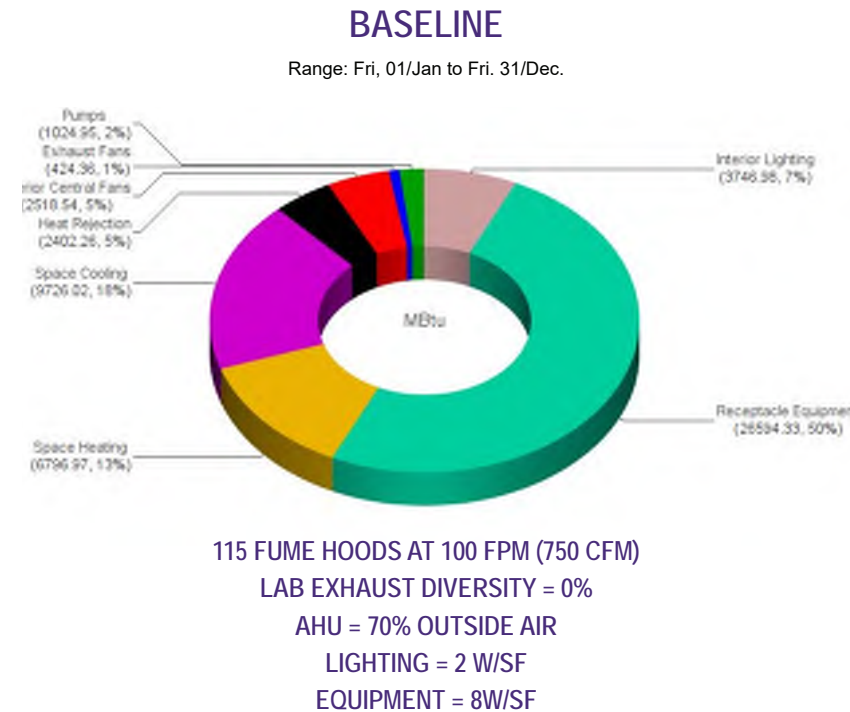


Figure: Baseline & Proposed Energy Model

ECMS – ENERGY CONSERVATION MEASURES FOR PROPOSED

- VAV fume hood exhaust system, min 100 fpm.
- Airside Energy Recovery for EA to OA, on the roof. Replacing the (2) DOAS units or custom units to dehumidify the air BEFORE it enters the building.
- Waterside Energy Recovery from pre-cool to re-heat coil for dehumidification.
- Transfer Class 1 air from the Office to the Labs for Class 2. Maintaining quadrant AHU is ok – which means the offices will get 100% OA, but we can return from those spaces if they don't transfer to the lab.

Metering will be provided to allow for reports and trends to be generated each month for energy usage of each system type for use towards verification of building operations.

CENTRALIZED SYSTEMS

Designed in 1975, the original building has much of the HVAC piping and ductwork original to the building, having upgraded some centralized equipment over the years; building air handlers and conversions to the LSU Central Energy Plant (CEP), the approach is to maintain the centralized services using a 10" chilled water main and 6" hot water main from the local central energy plant. Mechanical and Electrical infrastructure improvements or extensions of existing systems as follows:

MECHANICAL

- Chilled Water Design = 10°F ΔT; Goal = 22°F ΔT at the Air Handler (Figure 2)
- Hot Water Design = 30°F ΔT at 160°F fed from 100# steam heat exchanger, constant temperature, variable flow; Goal = no change.

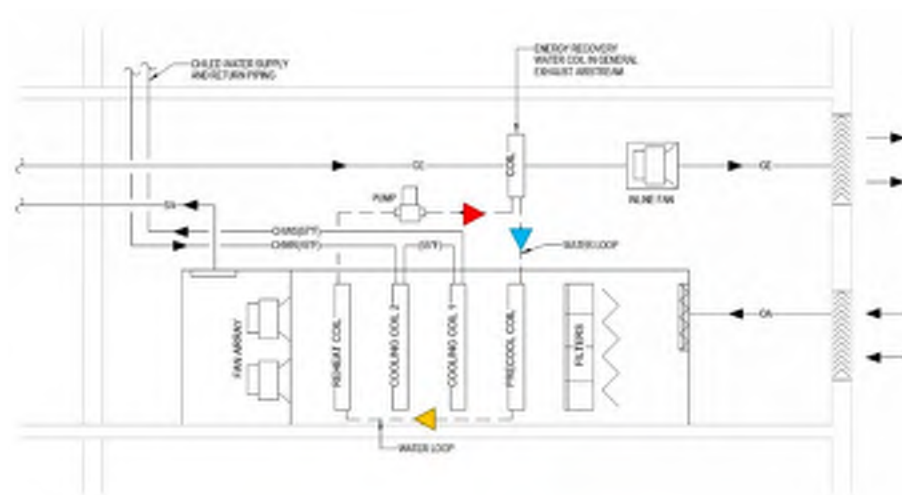


Figure: Air Handler ECMs

PLUMBING - WATER DISTRIBUTION AND LABORATORY PIPING

Similar to the HVAC system, the piping distribution is routed vertically in risers at the cores. Distribution is on the floor below the floor served, meaning one must access the ceiling below to get to supply piping to the labs above.

- Change everything to overhead piping and feed to in ceiling supply columns/modules for laboratory gases.
- Replace galvanized pipe risers with copper.
- Replace glass piping with polypropylene (Orion) acid waste piping.
- Maintain existing acid neutralization tanks at lower level.
- Maintain cast iron piping for sanitary.
- Emergency showers – use floor drains.
- RO system is centralized – 500 gal, Type II, local polishing for Type

FIRE PROTECTION

The wet pipe fire protection system is fed from an existing 6" fire protection system at level one with risers in each stairwell. The renovated floors shall remain as fully sprinkled with the following conditions:

1. Laboratory Classification – Class D (minimal fire hazard) (4.2.1.1)
2. Business Occupancy – Group 1, Ordinary Hazard. (5.3.3, 6.2.1.1.(2))

Due to the age of the piping, it is recommended that all piping, sprinklers, and zone control valves be new for the renovated floors.

- Concealed type sprinkler heads will be utilized wherever possible.
- Freeze proof heads will be provided at the walk in coolers and freezers.

ELECTRICAL

Will maintain the essential normal and standby power feed to the existing MEB building, serving as 100% emergency back-up for this building in the event of an outage. The 4000 ampere, 480/277V, 3 phase, 4 wire double-ended distribution switchgear located on the second floor of the MEB and will be utilized for the project.

TECHNOLOGY

The existing MDF will be utilized and extended to serve new IDF rooms on floors 5,6, and 7.

BUILDING INFRASTRUCTURE DISTRIBUTION

MECHANICAL

We propose maintaining the existing chilled and hot water piping risers originate on the 2nd floor and have (4) vertical risers in each mechanical room which will remain. Hot water piping to reheat coils will be extended from the mechanical rooms and routed in accessible locations to terminal boxes.

Provide new Air Handling Equipment typical each floor - (4) four Single Duct VAV, zoned separate AHUs for Laboratories vs Office and core spaces, sized as follows:

Labs = 8 ARCH of 100% OA, design up to 15 ARCH for future capacity availability.

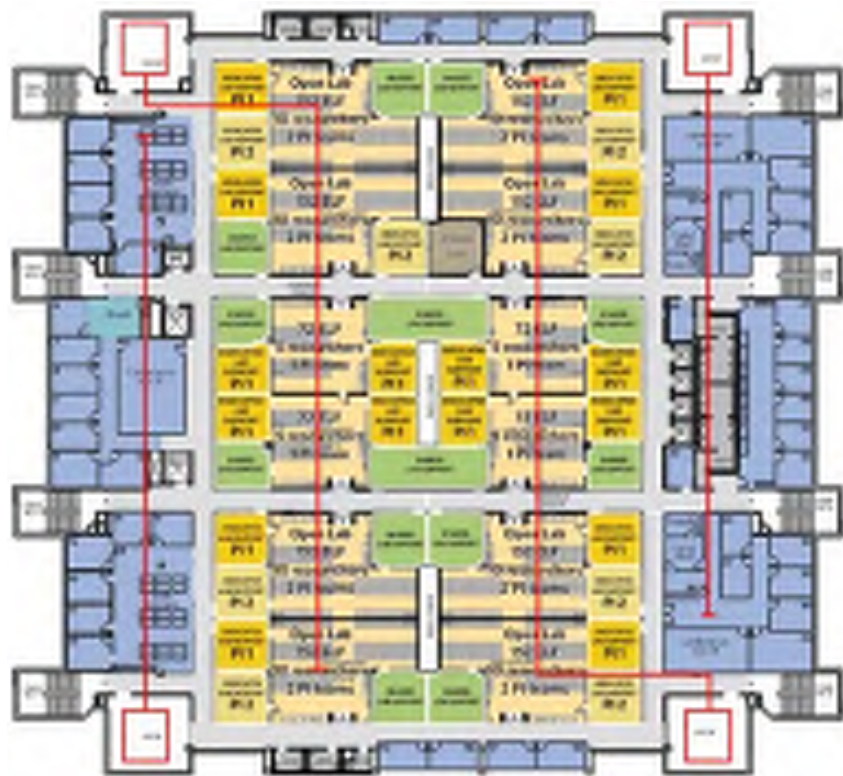


Figure: Air Handler Zoning

ELECTRICAL

The four existing normal 1600 ampere, 480/277V, 3 phase, 4 wire bussed duct risers originating from the second floor main building distribution switchgear and rising to each A, B, C, & D quadrant corner of floors 5, 6, & 7 will be utilized to supply normal power to the project floors. These bussed ducts are co-located within the mechanical room in each quadrant corner. The existing electrical branch distribution panels within the mechanical rooms are antiquated, do not provide the code required working space, and do not meet NIH standards. All the existing electrical distribution gear in the mechanical room will be demolished.

A new electrical room will be provided adjacent to the existing mechanical room in each quadrant to adhere with the LSU desire to separate the mechanical and electrical equipment and to alleviate the existing conditions noted above. The four existing normal bussed duct risers will remain at their existing quadrant location within the mechanical room due to downtime, vintage, and cost to relocate. New normal feeder taps will be provided on the bussed ducts to new electrical gear located in each respective new dedicated electrical room as required for the design circuiting characteristics of the quadrant.

New HVAC equipment power for each quadrant mechanical room will derive from new panels connected to the existing 'AC' feeder risers in each quadrant that originates from the second floor main double-ended switchgear.

New rooftop exhaust fan power will derive from the existing 'ACR' distribution panels located within the penthouse.

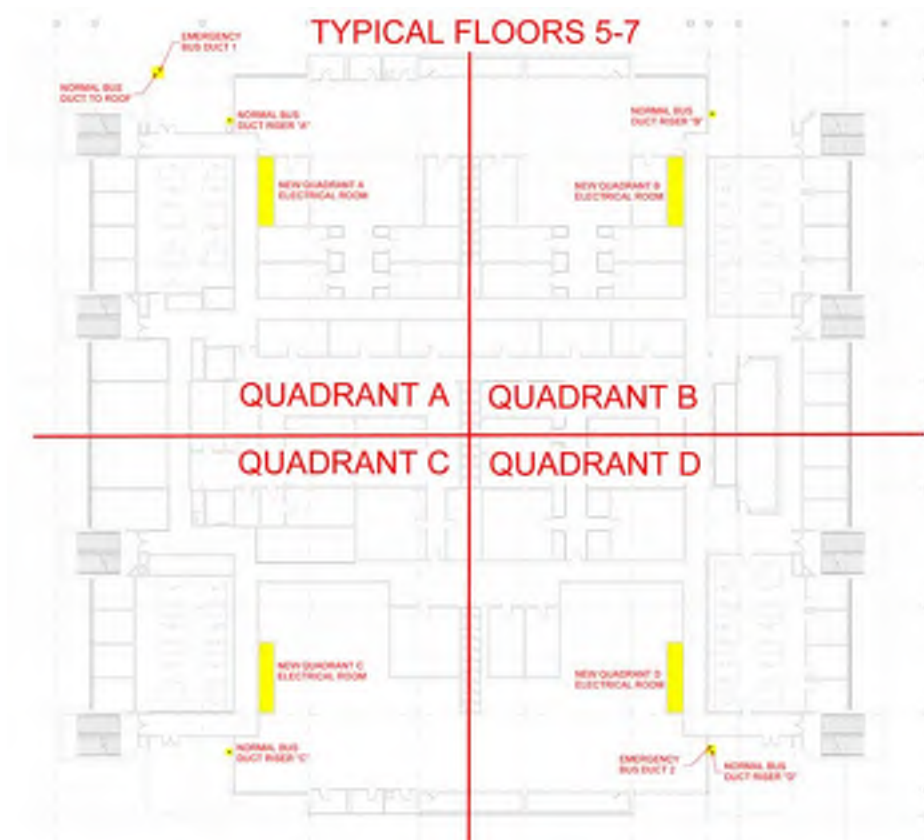


Figure: Electric Riser Zoning

BUILDING INFRASTRUCTURE DISTRIBUTION

EMERGENCY ELECTRICAL SYSTEM

The existing 750KW, 480/277V, 3 phase, 4 wire rooftop generator will supply critical and life safety loads to the project floors 5, 6 & 7.

The rooftop generator's emergency critical power is distributed by two bussed duct risers feeding down from roof level to the third floor in quadrant A and D within the two respective mechanical rooms. The two existing emergency critical bussed duct risers are of newer vintage but will remain at their existing quadrant location within the mechanical room due to downtime and cost to relocate. The mechanical design team will work around the existing bussed ducts when designing placement of new HVAC equipment within the mechanical rooms.

New emergency critical feeder taps will be provided to each bus riser on floors 5,6, & 7 to new emergency critical electrical distribution gear located in each respective new dedicated electrical room as required for the design circuiting characteristics of the quadrant.

The rooftop generator's life safety power is distributed to transfer switches located on the second floor emergency electrical room. New life safety panels will be provided in each of the new dedicated electrical rooms of each quadrant on floors 5,6, & 7 as required for the design circuiting characteristics of the floor. These new life safety panels will be fed from the life safety distribution gear located on the second floor.

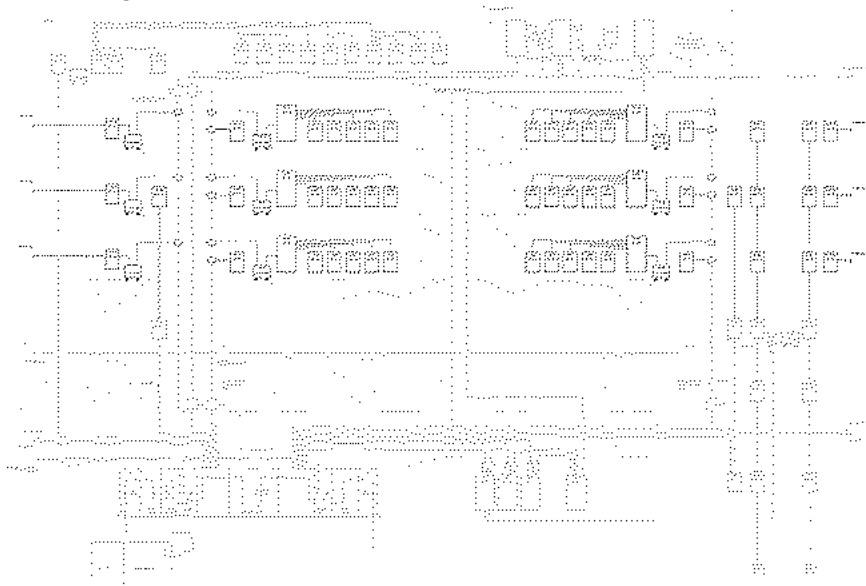


Figure: Electrical Riser Diagram

MISCELLANEOUS BRANCH POWER REQUIREMENTS

All existing power and lighting on each floor will be demolished with the exception of the normal and emergency bussed ducts which will remain existing as noted above and tapped with new breakers as required in the design of each floor.

LIGHTING

New Lighting shall be provided throughout floors 5,6, & 7 in all spaces.

- Daylight Harvesting will be utilized throughout office and collaboration areas.
- Lighting fixture types will be recessed within lab and office areas.

FIRE ALARM SYSTEM

The existing MEB building Siemens addressable fire alarm system will be utilized for this project and will not have to be upgraded. New annunciation and detection devices will be provided on each floor of the project. Fire alarm terminal cabinets, notification appliance signal/power boosters, etc. will be located in the new electrical rooms on levels 5,6, & 7 as required and fed by the life safety branch.



Figure: Lab Technology

TECHNOLOGY

The new spaces will have state of the art technology systems in collaboration spaces and meeting rooms to provide students and faculty with the latest tools in technology to advance their research programs. The new areas will have access control and CCTV cameras integrated with the existing building security systems to provide students and faculty the level of security required for a facility of this type.

- Existing technology infrastructure and devices on floors 5,6, and 7 will be demo'd and new provided.
- Each floor shall have a minimum of one Telecommunication Distribution Rooms (TDR) to serve the network devices in that area. A 12ft x 10ft telecommunications room shall be provided on each floor
- TDR's will host telecommunications, security and audio visual equipment as needed. All of these systems are networked based and will connect to the local area network in these spaces.