CHAPTER 278: RESEARCH AND DEVELOPMENT (R&D)

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1. PURPOSE AND SCOPE

This document outlines Space Planning Criteria Standards for Program Guide (PG) 18-9 Chapter 278: Research and Development. It applies to all research facilities at the Department of Veterans Affairs (VA).

Research and Development (R&D), as used in these criteria, includes the following components: Biomedical Laboratory Research and Development (BLR&D) Service Rehabilitation Research and Development (RR&D) Service, Clinical Science Research and Development (CSR&D) Service, Health Services Research and Development (HSR&D) Service, and Veterinary Medical Unit (VMU).

Research and Development (R&D) scope and functions are detailed in the following VHA Policy documents:

VHA Directive 1058 *The Office of Research Oversight* (2017)
VHA Directive 1058.01 *Research and Compliance Reporting Requirements* (2020)
VHA Directive 1200 *Research and Development Program* (2016)
VHA Directive 1200.01 *Research and Development Committee* (2019)
VHA Directive 1200.02 *Research Business Operations* (2017)
VHA Directive 1200.05 *Requirements for the Protection of Human Subjects in Research* (2019)
VHA Handbook 1200.07 *Use of Animals in Research* (2011)
VHA Directive 1200.08 *Safety of Personnel and Security of Laboratories involved in VA Research* (2019)

2. DEFINITIONS

Biomedical Laboratory Research and Development (BLR&D) Service: preclinical research to understand life processes from the molecular, genomic, and physiological levels for the purpose of advancing science and the understanding of how diseases affect Veterans.

Biosafety Level 2 (BSL-2): Practices, safety equipment, and facility design and construction are for work with a broad spectrum of indigenous moderate risk agents that are present in the community and associated with human disease of varying severity.

Clinical Science Research and Development (CSR&D) Service: Conducts clinical research on volunteer patients/subjects that might necessitate controlled conditions, such as isolation and/or observation. Studies can range from small population of inpatient (4-5 beds) to large out-patient groups.

Health Services Research and Development (HSR&D) Service: Research focused on the health care delivery systems, with specific emphasis on patient needs and quality of care provided.

Office of Research and Development (ORD): The Department of Veterans Affairs (VA) Research and Development program goal is to improve the lives of Veterans and all Americans through health care discovery and innovation.

Research Core: A shared support zone between several Labs that includes Equipment, Tissue Culture Lab, Fume Hood(s), Cold Room(c), Glass Wash, and Microscope Rooms.

Research and Development (R&D): The investigation of biomedical problems and hypotheses related to the human health, diseases, impairments, and disabilities, as well as systematic study of problems and hypotheses related to the delivery of health care. VA R&D consists of Biomedical Laboratory Research and Development (BLR&D) Service, Health Services Research and Development (HSR&D) Service, Clinical Science Research and Development (CSR&D) Service, and Rehabilitation Research and Development (RR&D) Service.

Rehabilitation Research and Development (RR&D) Service: Includes all research related to chronic disabling conditions in Veterans.

Veterinary Medical Unit (VMU): A facility with specifically designed environments for the care and support of animals used for research. This typically includes animal holding rooms, procedure rooms, cage wash cleaning and sterilization, staff areas, and support spaces.

Space Planning / SEPS

Accessible: A site, building, facility, or portion thereof that complies with provisions outlined in the Architectural Barriers Act of 1968 (ABA).

Architectural Barriers Act (ABA): A set of standards developed to ensure that all buildings financed with federal funds are designed and constructed to be fully accessible to everyone. This law requires all construction, renovation, or leasing of sites, facilities, buildings, and other elements, financed with federal funds, to comply with the Architectural Barriers Act Accessibility Standards (ABAAS). The ABAAS replaces the Uniform Federal Accessibility Standards (UFAS).

Building Gross (BG) Factor: A Factor applied to the sum of all the Departmental Gross Square Footage (DGSF) in a project to determine the Building Gross Square Footage. This factor accounts for square footage used by the building envelope, structural systems, horizontal and vertical circulation including main corridors, elevators, stairs and escalators, shafts, and mechanical spaces. The Department of Veterans Affairs has set this factor at 1.35 and included guidance in case of variance when developing a Program for Design (PFD) in SEPS.

Department Net to Gross (DNTG) Factor: A parameter, determined by the VA for each clinical and non-clinical department PG-18-9 space planning criteria chapter, used to convert the programmed Net Square Feet (NSF) area to the Department Gross Square Feet (DGSF) area.

Full-Time Equivalent (FTE): A staffing parameter equal to the amount of time assigned to one full time employee. It may be composed of several part-time employees whose combined time commitment equals that of one full-time employee (i.e., 40 hours per week).

Functional Area (FA): The grouping of rooms and spaces based on their function within a clinical service or department.

Huddle Space: A multi-use space, often placed at the rear of the teamwork area, used for extended team huddles, precepting, local neighborhood staff training, and team projects. Often combined with trainee/hoteling staff workstations. May double as the trainee workroom when students or trainees are present.

Input Data Statement(s): A question or set of questions designed to elicit information about the healthcare project to generate a Program for Design (PFD) based on the parameters set forth in this set of documents. This information is processed through mathematical and logical operations in the VA Space and Equipment Planning System (SEPS). Depending on the type of information sought, Input Data Statements are tagged (M) for Mission or (W) for Workload or (S) for Staffing.

JSN (Joint Schedule Number): A unique five alpha-numeric code assigned to each content item in the PG-18-5 Standard. JSNs are defined in DoD's Military Standard 1691 and included in SEPS Content Table.

Net Square Feet / Net Square Meters (NSF/NSM): The area of a room or space derived from that within the interior surface of the bounding walls or boundaries.

Program for Design (PFD): A project specific itemized listing of the spaces, rooms, and square foot area required for the proper operation of a specific service / department, and the corresponding area for each. PFDs are generated by SEPS based on the PG-18-9 Standard.

PG-18-5: A Department of Veterans Affairs' Equipment Guidelist Standard for planning, design, and construction of VA healthcare facilities; a Program Guide (PG) that lists assigned room contents (medical equipment, furniture, and fixtures) to each room in PG-18-9. PG-18-5 follows PG-18-9's chapter organization and nomenclature.

PG-18-9: A Department of Veterans Affairs' Program Guide for the Space Planning Criteria Standard use to develop space planning guidance for the planning, design, and construction of VA healthcare facilities; a Program Guide (PG) that provides space planning guidance for VA Medical Centers (VAMCs) and Community Bases Outpatient Clinics (CBOCs). PG-18-9 is organized by chapters, as of September 2021 there are 56 clinical and non-clinical PG-18-9 chapters; they are implemented and deployed in SEPS so that space planners working on VA healthcare projects can develop baseline space programs.

PG-18-12: A Department of Veterans Affairs' Design Guide Standard for planning, design and construction of VA healthcare facilities, a Program Guide (PG) that provides design guidance for VA Medical Centers (VAMCs) and Community Bases Outpatient Clinics (CBOCs). The narrative section details functional requirements, and the Room Template section details the planning and design of key rooms in PG-18-9. Not all PG-18-9 chapters have a corresponding PG-18-12 Design Guide; one Design Guide can cover more than one PG-18-9 chapter.

Room Area: The square footage required for a clinical, non-clinical or research function to take place in a room / space. It takes into account the floor area required by equipment

(medical, non-medical and research), furniture, circulation, and appropriate function / code-mandated clearances. Room area is measured in Net Square Feet (NSF).

Room Code (RC): A unique five alpha-numeric code assigned to each room in the PG-18-9 Standard. Room Codes in PG-18-9 are unique to VA and are the basis for SEPS's Space Table for VA projects.

Room Criteria Statement (RCS): A mathematical / logical formulation assigned to each room / space included in PG-18-9 incorporating answers to Input Data Statements (IDSs) to determine the provision of the room / space in the baseline space program or Program for Design (PFD) for a project.

SEPS: Acronym for Space and Equipment Planning System which produces equipment lists and Program for Design for a healthcare project based on specific information entered in response to Input Data Questions.

SEPS Importer: A style-based format developed to allow upload of RCSs and IDSs to SEPS to implement and operationalize space planning criteria in PG-18-9 in the SEPS digital tool. This format establishes the syntax used in the RCSs and allows the use of Shortcuts. Shortcuts allow developers of space planning criteria statements to simplify RCSs making full use of their logical and mathematical functionality. A shortcut can refer to an RCS, a room in any FA or a formula. Shortcuts are [bracketed] when used in FAs and RCSs and are listed along with their equivalences at the end of the Space Planning Criteria section.

Space Planning Concept Matrix (SPCM): A working document developed during the chapter update process. It lists all the rooms organized by Functional Area and establishes ratios between the directly and the indirectly workload driven rooms for the planning range defined in this document. The matrix is organized in ascending workload values in ranges reflecting existing facilities and potential future increase. Section 5 of this document Space Planning Criteria reflects the values in the SPCM.

Technical Information Library (TIL): The Office of Construction and Facilities Management (CFM) provides support for all major construction and lease projects. The TIL contains design and construction standards for the Department of Veterans Affairs. The TIL is aimed at VA employees in medical centers, community based clinics, regional offices, and national cemeteries as well as A/E consultants and provides relevant technical information for project development. Department of Veterans Affairs Technical Information Library (VA TIL).

VA Room Family (VA RF): An organizational system of rooms / spaces grouped by function, a 'Room Family'. There are two "Orders" in the VA RF: Patient Care (PC) and Patient Care Support (PCS); Patient Care has four sub-orders: Clinical, Inpatient, Outpatient and Residential Clinical. There are also four sub-orders in the Patient Care Support order: Building Support, Clinical Support, Staff Support and Veteran Support. Each room in a Family has a unique Room Code and NSF assigned based on its Room Contents and function which correspond to the specific use of the room. The same RC can be assigned to different Room Names with the same function in this document and can be assigned an NSF that varies

based on the PG-18-5 Room Contents assigned to the room. All rooms in this PG-18-9 Chapter belong to the Patient Care Support Order.

VA Technical Information Library (TIL): A resource website maintained by the Facilities Standards Service (FSS) Office of Construction and Facilities Management (CFM) containing a broad range of technical publications related to the planning, design, leasing, and construction of VA facilities. VA-TIL can be accessed at: https://www.cfm.va.gov/TIL/

Workstation: Area outfitted with equipment and furnishings, typically allocated 56 NSF each. Managers and other staff with no direct reports as well as part-time, seasonal, and job-sharing staff may qualify for a workstation. Such environments are particularly conducive to team-oriented office groupings. These environments work best when they have access to conference and small group meeting spaces.

3. OPERATING RATIONALE AND BASIS OF CRITERIA

A. Workload driven space planning criteria have been developed for the functional groups of the Department of Veterans Affairs Office of Research and Development (ORD). These criteria are predicated on established and/or anticipated best practice standards as well as applicable policy requirements for biomedical, rehabilitation, clinical, and health services research as well as the supporting veterinary services. They are the baseline space programs for the Research and Development components of a VA construction project. These criteria are subject to modification and adjustment relative to developments in state-of-the-art equipment, research type, and subsequent detailed planning and design.

B. Update of the Space Planning and Design Standards is a research based effort executed with participation of VHA Office of Research and Development (ORD) Subject Matter Experts, VA-Construction and Facilities Management Office (CFM) professional staff and specialty consultants hired for the task. The functional groups and spaces contained herein were based on a review of current applicable VHA policies and guidelines, and technology developments.

C. Research activities of VA Research and Development (R&D) take place in the following main components:

1. Biomedical Laboratory Research and Development (BLR&D) Service,
2. Rehabilitation Research and Development (RR&D) Service,
3. Clinical Science Research and Development (CSR&D) Service,
4. Health Services Research and Development (HSR&D) Service, and
5. Veterinary Medical Unit (VMU)

These components are referenced either by their full name, their abbreviation in parenthesis followed by Service (except for VMU) or their abbreviation as needed throughout this document.

D. The Space Planning Criteria Matrix (SPCM) details all the baseline set of spaces for the above components organized in 30 ranges for BLR&D and VMU, and in one range each for RR&D, CSR&D, and HSR&D. The BLR&D and VMU ranges are based on the number of

Principal Investigators (PIs) working on a site/facility; each range represents 3 PIs and their support personnel. The SPCM details space requirements for a facility ranging from 3 to 90 PIs. For the other three R&D components, the SPCM provides a set of 26 typical office and support spaces for researchers; no lab space is included nor space planning parameters due to varied nature of research activities of these three components. Planners must use these spaces as the starting point in the planning process of these three R&D components and define final quantity and mix as well as any additional spaces on a project-by-project basis. Space for the Non-Profit Program is provided following the 30 BLR&D ranges in Small, Medium, and Large requirements each corresponding to 10 ranges.

E. The SPCM includes 189 rooms organized in 17 Functional Areas, each room is assigned a Room Name, Room Code, baseline NSF/NSM and a resulting quantity and NSF value for each range. The VA278 Functional Areas:

1. R&D Reception Area
2. BLR&D Service Research Area
3. BLR&D Service Support Area
4. BLR&D Service Staff Area
5. RR&D Service Staff Area
6. CSR&D Service Staff Area
7. HSR&D Service Staff Area
8. VMU Treatment Area
9. VMU Surgery Area
10. VMU Imaging / Behavioral Study Area
11. VMU Animal Area
12. VMU Cagewash Area
13. VMU Support Area
14. VMU Staff Area
15. R&D Non-Profit (N-P) Staff Area
16. R&D Staff and Administrative Area
17. R&D Support Area

F. Section 4: Input Data Statements and Section 5: Space Planning Criteria in this document reflect the range values and ratios in the SPCM; these sections have been implemented in the Space and Equipment Planning System (SEPS) software. Planners developing R&D projects must access these criteria in SEPS to generate a Program for Design (PFD) -the space program- for their project (s).

G. Based on its intended function, each room / space in a PG-18-9 is assigned a:

1. Room Name (RN),
2. Room Code (RC),
3. Room Area, the Net Square Feet (NSF) and its corresponding “soft metric” Net Square Meters (NSM),
4. Room Criteria Statement(s) (RCS(s)) based on the SPCM range values correlated to answers to Input Data Statements (IDSs) and SEPS Importer Shortcuts (at end of

Section 4); a RCS defines a room condition to calculate the resulting NSF assigned to the room, and

5. Room Comment if needed.

The Room Name, Room Code, and Room Comment (when available) as well as the Functional Area Names are transferred verbatim to a project Program for Design (PFD); the resulting NSF is generated by computation of the Room Criteria Statement (RCS) parameters based on response(s) to the Input Data Statements (IDSs) during creation of a SEPS project.

H. A baseline space program, a PFD, is generated as a result of Planner's answers to Input Data Statements (IDSs) (Section 4). A Project Room Contents (PRC) Report which includes furniture, equipment and fixtures assigned to each Room Code can also be generated in SEPS, Room Contents are defined in PG-18-5.

I. Determination of the number and area of the Reception and Support rooms is based on assigned ratios to the research areas defined in the SPCM for each Range.

J. The Room Codes included in this chapter come from the VA Room Family (VARF) definition which are applicable to all PG-18-9 chapters. Based on function, rooms belong to the Patient Care Support (PCS) category. In addition to the "R&D" Room Family, rooms included in this document belong to the following families: "Bldg Sprt", "Clncl Sprt", "Educ Svc", "Lgstcs Svc", "OIT", Police Svc", and "Stff Sprt"

K. Section 5, sub-section Q lists the SEPS Importer Shortcuts used in Section. These shortcuts are inserted into the Room Criteria Statement (RCS) for each room; shortcuts correspond to Input Data Statements in Section 4. SEPS uses them to determine the space requirements for a project based on answers to the Input Data Statements provided by planners.

L. Refer to PG-18-5: Research and Development Equipment Guidelist for the Room Content assignment for each room included in this document.

M. Refer to PG-18-12: Research and Development Design Guide for additional planning and design information and Room Guideplates/Templates for selected R&D rooms in this document.

N. SEPS is accessible to government planners and private sector consultants working on VA projects during their Period of Performance (PoP) through the MAX.gov website.

O. The Research and Development Department Net to Gross (DNTG) factor is **1.30**; this value is multiplied by the total programmed net square feet (NSF) area to determine the departmental gross square feet (DGSF); the DNTG factor can not be changed. The Building Gross area is calculated, in SEPS, by applying the default 1.35 factor, planners can adjust this value.

4. INPUT DATA STATEMENTS (IDS)

A. How many Principal Investigators (PIs) will conduct research in the Biomedical Laboratory Research and Development (BLR&D) Service? (S)

B. Is Rehabilitation Research and Development (RR&D) Service authorized? (M)
C. Is Clinical Science Research and Development (CSR&D) Service authorized? (M)
D. Is Health Services Research and Development (HSR&D) Service authorized? (M)
E. Is an R&D Non-Profit (N-P) authorized? (M)
   1. What size R&D Non-Profit (N-P) is authorized? (Misc) (Values: 1, 2, 3) (Note: 1=Small, 2=Medium, 3=Large)

5. SPACE PLANNING CRITERIA

A. FA 1: R&D RECEPTION AREA

1. R&D Waiting, Stff Sprt (SS222) .....100 NSF (9.3 NSM)
   a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 30
   b. Provide one at 130 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 31 and 60
   c. Provide one at 170 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 61 and 90

   Baseline 100 NSF accommodates two standard chairs @ 9 NSF each, one bariatric chair @ 14 NSF, one accessible space @ 10 NSF, and circulation; total four people.

   130 NSF accommodates four standard chairs @ 9 NSF each, one bariatric chair @ 14 NSF, one accessible space @ 10 NSF, and circulation; total six people.

   170 NSF accommodates six standard chairs @ 9 NSF each, one bariatric chair @ 14 NSF, one accessible space @ 10 NSF, and circulation; total eight people.

   Please refer to R&D PG-18-12 Design Guide Section 2.11

2. R&D Contact / Information Station, Bldg Sprt (SB091) .....30 NSF (2.8 NSM)
   a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90

   Allocated NSF accommodates a phone / intercom connection to Administrative Officer (AO) office. Please refer to R&D PG-18-12 Design Guide Section 2.11

3. R&D Visitor Universal Toilet, Bldg Sprt (SB191) .....60 NSF (5.6 NSM)
   a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 30
   b. Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 31 and 90

   Allocated NSF accommodates one accessible toilet @ 25 NSF, one wall-hung lavatory @ 12 NSF, ABA clearances, and circulation.

4. R&D Security Station, Police Svc (SB851) .....80 NSF (7.5 NSM)
   a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45
   b. Provide one at 100 NSF if [number of Principal Investigators (PIs) conducting

research in BLR&D] is between 46 and 90

Allocated NSF accommodates a security personnel workstation, task chair and visitor privacy area. Please refer to R&D PG-18-12 Design Guide Section 2.11

B. FA 2: BLR&D SERVICE RESEARCH AREA

1. BLR&D Lab Access / Protocol Room, R&D (SC701) .....165 NSF (15.4 NSM)

a. Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 9

b. Provide an additional one for every portion of nine [number of Principal Investigators (PIs) conducting research in BLR&D] greater than nine if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 10 and 90 (Maximum 11)

The Lab Access / Protocol is the laboratory space immediately adjacent to the general use corridor accessing the overall laboratory space. It must be planned as the entry space for lab coats, glove, eyeglasses, or other protocols required for entering the overall lab. It can be stocked with other supplies that may be helpful to have stored at this location. It must also support protocols required for exiting the lab including lab coat removal and hanging, laundry container, glove disposal and handwashing. Please refer to R&D PG-18-12 Design Guide Section 2.5.2

2. BLR&D Bench Unit, R&D (SC702).....500 NSF (46.5 NSM)

a. Provide three if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 3

b. Provide an additional three for every portion of three [number of Principal Investigators (PIs) conducting research in BLR&D] greater than three if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 4 and 90 (Maximum 90)

This is the primary place for hands-on experimental work that does not require a specialized closed environment which along with the Bench Support and Ghost Corridor form the fundamental unit of the laboratory research space. Please refer to R&D PG-18-12 Design Guide Section 2.5.2 and Room Template, Room Data Sheet and Equipment Guidelist Section 4.2.1

3. **BLR&D Ghost Corridor, R&D (SC703) .....135 NSF (12.6 NSM)**
   a. *Provide three if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 3*
   b. *Provide an additional three for every portion of three [number of Principal Investigators (PIs) conducting research in BLR&D] greater than three if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 4 and 90 (Maximum 90)*

   This space interconnects multiple adjacent Bench Units and their Bench Support, it also connects to access/egress points to the research space. Please refer to R&D PG-18-12 Design Guide Section 2.5.2 and Room Template, Room Data Sheet and Equipment Guidelist Section 4.2.1

4. **BLR&D Bench Support, R&D (SC704) .....55 NSF (5.2 NSM)**
   a. *Provide three if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 3*
   b. *Provide an additional three for every portion of three [number of Principal Investigators (PIs) conducting research in BLR&D] greater than three if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 4 and 90 (Maximum 90)*

   This space accommodates sinks, refrigerators, storage, and other mixed use on one side of the Ghost Corridor. The Bench Support, the Bench Unit and the Ghost Corridor form the fundamental unit of the laboratory space. Please refer to R&D PG-18-12 Design Guide Section 2.5.2 and Room Template, Room Data Sheet and Equipment Guidelist Section 4.2.1

C. FA 3: BLR&D SERVICE SUPPORT AREA

1. **BLR&D Core Room, R&D (SC711).....165 NSF (15.4 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 3*
   b. *Provide an additional one for every portion of three [number of Principal Investigators (PIs) conducting research in BLR&D] greater than three if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 4 and 90 (Maximum 30)*

   Flexible space for multiple potential uses. Please refer to R&D PG-18-12 Design Guide Section 2.5.3

2. **BLR&D Microscopy Room, R&D (SC712) .....165 NSF (15.4 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 18*
   b. *Provide an additional one for every portion of 18 [number of Principal Investigators (PIs) conducting research in BLR&D] greater than 18 if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 18 and 90 (Maximum 5)*

   Allocated NSF accommodates standing Electron Microscopes and confocal microscope placed on vibration isolation table. Please refer to R&D PG-18-12 Design Guide Section 2.5.3 and Room Template, Room Data Sheet and Equipment Guidelist Section 4.2.7

3. **BLR&D**
   Glassware Washing / Sterilization Room, R&D (SC713).....460 NSF (42.8 NSM)
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 30*
   b. *Provide one at 510 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 31 and 60*
   c. *Provide one at 580 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 61 and 90*

   Sterilizing, washing and drying glassware and decontamination of waste, material, and glassware through autoclaving. Please refer to R&D PG-18-12 Design Guide Section 2.5.3 and Room Template, Room Data Sheet and Equipment Guidelist Section 4.2.6

4. **BLR&D Walk-in Refrigerator / Cold Room, R&D (SC714) .....165 NSF (15.4 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 18*
   b. *Provide an additional one for every portion of 18 [number of Principal Investigators (PIs) conducting research in BLR&D] greater than 18 if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 18 and 90 (Maximum 5)*

   Cold temperature tolerance refrigerated room. Typically 4°C with one bench for working in cold and racks or shelves on other wall for storage. Please refer to R&D PG-18-12 Design Guide Section 2.5.3

5. **BLR&D Research Informatics Room, R&D (SC715).....160 NSF (14.9 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 18*
   b. *Provide an additional one for every portion of 18 [number of Principal Investigators (PIs) conducting research in BLR&D] greater than 18 if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 18 and 90 (Maximum 5)*

Space for research workstation to access data on servers located in the main computer room for the facility / campus. Trends with bioinformatics is PI access to certain data. Please refer to R&D PG-18-12 Design Guide Section 2.5.3

6. **BLR&D General Storage Room, R&D (SC716) .....165 NSF (15.4 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 3*
   b. *Provide an additional one for every portion of three [number of Principal Investigators (PIs) conducting research in BLR&D] greater than three if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 4 and 90 (Maximum 30)*

   Allocated NSF accommodates storage of PPE, glassware, reagents, supplies, etc. Please refer to R&D PG-18-12 Design Guide Section 2.5.3

7. **BLR&D Equipment Room, R&D (SC717) .....165 NSF (15.4 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 3*
   b. *Provide an additional one for every portion of three [number of Principal Investigators (PIs) conducting research in BLR&D] greater than three if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 4 and 90 (Maximum 30)*

   Heat and noise producing equipment such as refrigerators, floor centrifuges, etc. must be located in this room. Please refer to R&D PG-18-12 Design Guide Section 2.5.3

8. **BLR&D Service Core, R&D (SC718).....330 NSF (30.7 NSM)**
   a. *Provide three if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 6*
   b. *Provide an additional three for every portion of six [number of Principal Investigators (PIs) conducting research in BLR&D] greater than six if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 7 and 90 (Maximum 45)*

   The service core doubles as a linear equipment room for ultra-low temperature freezers, liquid nitrogen dewars, gas cylinders and manifolds supporting adjacent closed laboratory spaces. The overhead space allows for the main distribution / runs for the HVAC, plumbing, electrical, IT / Telecom / Security systems and components as well as maintenance access to VAV boxes, dampers, valves, etc. Please refer to R&D PG-18-12 Design Guide Section 2.5.3

9. **BLR&D Darkroom, R&D (SC719) .....165 NSF (15.4 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90*

This darkroom is for developing film for processes such as autoradiography that has not yet moved to digital platforms. Please refer to R&D PG-18-12 Design Guide Section 2.5.3

10. **BLR&D Tissue Culture Room, R&D (SC721) .....165 NSF (15.4 NSM)**
    a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 6*
    b. *Provide an additional two for every portion of twelve [number of Principal Investigators (PIs) conducting research in BLR&D] greater than six if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 7 and 90 (Maximum 15)*

    Shared room for cell and tissue culture, including incubators, used up to BSL-2 or for clean cell culture. If more than two rooms are generated, planner can combine two rooms to provide space for 4 workstations/Biological Safety Cabinets. Please refer to R&D PG-18-12 Design Guide Section 2.5.3 and Room Template, Room Data Sheet and Equipment Guidelist Sections 4.2.2 and 4.2.3

11. **BLR&D Isotope Room, R&D (SC722) .....165 NSF (15.4 NSM)**
    a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 10 and 90*

    Allocated NSF accommodates a fume hood for research using high level radioisotopes. Please refer to R&D PG-18-12 Design Guide Section 2.5.3

12. **BLR&D Isotope Work and Storage Room, R&D (SC723).....165 NSF (15.4 NSM)**
    a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 10 and 27*
    b. *Provide an additional one for every portion of eighteen [number of Principal Investigators (PIs) conducting research in BLR&D] greater than 27 if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 28 and 90 (Maximum 5)*

    Allocated NSF accommodates a fume hood for research using low level radioisotopes. Please refer to R&D PG-18-12 Design Guide Section 2.5.3.

13. **BLR&D Flow Cytometry, R&D (SC724) .....165 NSF (15.4 NSM)**
    a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90*

    Allocated NSF accommodates cell sorting equipment which is generally self-contained. Please refer to R&D PG-18-12 Design Guide Section 2.5.3

14. BLR&D Fume Hood Room, R&D (SC725) .....165 NSF (15.4 NSM)

a. Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 6

b. Provide an additional one for every portion of three [number of Principal Investigators (PIs) conducting research in BLR&D] greater than six if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 7 and 90 (Maximum 30)

This is the primary location for hazardous chemical use in general purpose fume hoods and storage of chemicals. It must be located near the bench units. Fume hood rooms can be combined into larger shared fume hood rooms for greater space efficiency. Please refer to R&D PG-18-12 Design Guide Section 2.5.3 and Room Template, Room Data Sheet and Equipment Guidelist Sections 4.2.4 and 4.2.5

15. BLR&D Housekeeping Aides Closet (HAC), Bldg Sprt (SB244).....60 NSF (5.6 NSM)

a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 6

b. Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 7 and 18

c. Provide three if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 19 and 27

d. Provide four if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 28 and 36

e. Provide five if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 37 and 45

f. Provide six if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 54

g. Provide seven if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 55 and 66

h. Provide eight if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 67 and 78

i. Provide nine if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 79 and 84

j. Provide ten if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 85 and 90

D. FA 4: BLR&D SERVICE STAFF AREA

1. BLR&D PI Office, Stff Sprt (SS204).....100 NSF (9.3 NSM)

a. Provide one per each [number of Principal Investigators (PIs) conducting research in BLR&D] (Maximum 90)

Per Executive Order 13589, OMB issued Memorandum M-12-12 Freeze the Footprint (FTF) which mandated a 100 NSF office be provided for GS14 and above staff in a supervisory position. VA adopted this mandate per Chief of Staff (00A) VA-

wide Memorandum on Sep 17, 2013. Please refer to R&D PG-18-12 Design Guide Section 2.5.4

2. **BLR&D Research Associate Workstation, Stff Sprt (SS218).....56 NSF (5.3 NSM)**
   a. *Provide nine if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 6*
   b. *Provide an additional nine for every portion of six [number of Principal Investigators (PIs) conducting research in BLR&D] greater than six if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 7 and 90 (Maximum 135)*

   Per Executive Order 13589, OMB issued Memorandum M-12-12 Freeze the Footprint (FTF) which mandated a 56 NSF workstation be provided for GS14 staff in non-supervisory positions and for GS13 below staff. VA adopted this mandate per Chief of Sf (00A) VA-wide Memorandum on Sep 17, 2013. Please refer to R&D PG-18-12 Design Guide Section 2.5.4

3. **BLR&D Collaboration Station, Stff Sprt (SS212).....60 NSF (5.6 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 6*
   b. *Provide an additional one for every portion of six [number of Principal Investigators (PIs) conducting research in BLR&D] greater than six if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 7 and 90 (Maximum 15)*

   Collaboration stations must be grouped as layout of BLR&D Staff Area allows to facilitate interaction / discussion among researchers (PIs, Research Associates, etc.) outside the Laboratory space. Please refer to R&D PG-18-12 Design Guide Section 2.5.4

4. **BLR&D Huddle Room, Stff Sprt (SS285) .....120 NSF (11.2 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 12*
   b. *Provide an additional one for every portion of twelve [number of Principal Investigators (PIs) conducting research in BLR&D] greater than twelve if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 13 and 90 (Maximum 8)*

   Private meeting space, accommodates a table and seating for 4 people, equipped with VTC equipment.

5. **BLR&D Touch-down Workstation, Stff Sprt (SS218) .....56 NSF (5.3 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 12*
   b. *Provide an additional one for every portion of twelve [number of Principal Investigators (PIs) conducting research in BLR&D] greater than twelve if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 13 and 90 (Maximum 8)*

   Non-dedicated workstation for use on an as-needed, temporary basis for Research Assistants, etc. Please refer to R&D PG-18-12 Design Guide Section 2.5.4

6. **BLR&D Private Call Room, Stff Sprt (SS224) .....80 NSF (7.5 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 12*
   b. *Provide an additional one for every portion of twelve [number of Principal Investigators (PIs) conducting research in BLR&D] greater than twelve if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 13 and 90 (Maximum 8)*

   Room for private / confidential conversations / calls equipped with teleconferencing and collaboration technologies. Allocated NSF accommodates a table and chairs for two people.

7. **BLR&D Conference / Multipurpose Room, Educ Svc (SS101) .....675 NSF (62.8 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90*

   Minimum allocated NSF accommodates 10 people. Room must be equipped with VTC equipment.

8. **BLR&D**
   Conference / Multipurpose Storage Room, Lgstcs Svc (SB773).....80 NSF (7.5 NSM)
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90*

   Allocated NSF accommodates shelving for conference room supplies.

9. **BLR&D Copy / Supply Alcove, Stff Sprt (SS268) .....40 NSF (3.8 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 6*
   b. *Provide an additional one for every portion of six [number of Principal Investigators (PIs) conducting research in BLR&D] greater than six if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 7 and 90 (Maximum 15)*

   Please refer to R&D PG-18-12 Design Guide Section 2.5.4

10. BLR&D Mailroom, Lgstcs Svc (SB653).....120 NSF (11.2 NSM)

a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 30

b. Provide one at 160 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 31 and 60

c. Provide one at 200 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 61 and 90

Please refer to R&D PG-18-12 Design Guide Section 2.5.4

11. BLR&D Staff Breakroom, Stff Sprt (SS262) .....240 NSF (22.3 NSM)

a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 12

b. Provide an additional one for every portion of twelve [number of Principal Investigators (PIs) conducting research in BLR&D] greater than twelve if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 13 and 90 (Maximum 8)

Minimum allocated NSF accommodates small kitchenette, 4-person table(s), and VTC equipment.

12. BLR&D Female Staff Toilet, Bldg Sprt (SB202).....60 NSF (5.6 NSM)

a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 9

b. Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 10 and 63

c. Provide three if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 64 and 90

Allocated NSF accommodates one accessible toilet @ 25 NSF, one accessible wall-hung lavatory @ 13 NSF, ABA clearances, and circulation. Locate this space near Staff Conference and Break Rooms.

13. BLR&D Male Staff Toilet, Bldg Sprt (SB203) .....60 NSF (5.6 NSM)

a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 9

b. Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 10 and 78

c. Provide three if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 79 and 90

Allocated NSF accommodates one accessible toilet @ 25 NSF, one accessible wall-hung lavatory @ 13 NSF, ABA clearances, and circulation. Locate this space near Staff Conference and Break Rooms.

14. BLR&D Female Staff Locker Room, Stff Sprt (SS232) .....120 NSF (11.2 NSM)

a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 9*
b. *Provide one at 140 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 10 and 18*
c. *Provide one at 160 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 19 and 27*
d. *Provide one at 180 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 28 and 36*
e. *Provide one at 200 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 37 and 45*
f. *Provide two at 110 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 54*
g. *Provide two at 120 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 55 and 63*
h. *Provide two at 130 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 64 and 72*
i. *Provide two at 140 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 73 and 81*
j. *Provide two at 150 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 82 and 90*

Locate this room adjacent to the Female Staff Toilet.

15. BLR&D Male Staff Locker Room, Stff Sprt (SS241).....120 NSF (11.2 NSM)

a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 9
b. Provide one at 140 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 10 and 18
c. Provide one at 160 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 19 and 27
d. Provide one at 180 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 28 and 36
e. Provide one at 200 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 37 and 45
f. Provide two at 110 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 54
g. Provide two at 120 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 55 and 63
h. Provide two at 130 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 64 and 72
i. Provide two at 140 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 73 and 81
j. Provide two at 150 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 82 and 90

Locate this room adjacent to the Male Staff Toilet.

16. BLR&D Female Staff Shower, Bldg Sprt (SB173) .....70 NSF (6.6 NSM)

a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45
b. Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90

Allocated NSF accommodates one accessible shower @ 28 NSF, one accessible bench @ 16 NSF, ABA clearances, and circulation.

17. BLR&D Male Staff Shower, Bldg Sprt (SB184) .....70 NSF (6.6 NSM)

a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45
b. Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90

Allocated NSF accommodates one accessible shower @ 28 NSF, one accessible bench @ 16 NSF, ABA clearances, and circulation.

18. BLR&D Housekeeping Aides Closet (HAC), Bldg Sprt (SB244).....60 NSF (5.6 NSM)
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 78*
   b. *Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 79 and 90*

E. FA 5: RR&D SERVICE STAFF AREA

1. RR&D Reception, Stff Sprt (SS221).....85 NSF (7.9 NSM)
   a. *Provide one if [RR&D is authorized]*

   Allocated NSF accommodates a receptionist workstation, task chair and file cabinet, space for visitor and circulation.

2. RR&D Waiting, Stff Sprt (SS222) .....100 NSF (9.3 NSM)
   a. *Provide one if [RR&D is authorized]*

   Allocated area accommodates two standard chairs @ 9 NSF each, one bariatric chair at 14 NSF, one accessible space @ 10 NSF, and circulation; total four people.

3. RR&D Patient Interview Room, R&D (SC727).....100 NSF (9.3 NSM)
   a. *Provide one if [RR&D is authorized]*

   Room used for interviewing subjects participating in research projects. Please refer to R&D PG-18-12 Design Guide Section 2.7

4. RR&D Exam Room, R&D (SC728) .....120 NSF (11.2 NSM)
   a. *Provide one if [RR&D is authorized]*

   Room used for clinical examination of subjects participating in research projects. Please refer to R&D PG-18-12 Design Guide Section 2.7

5. RR&D PI Office, Stff Sprt (SS204) .....100 NSF (9.3 NSM)
   a. *Provide three if [RR&D is authorized]*

   Per Executive Order 13589, OMB issued Memorandum M-12-12 Freeze the Footprint (FTF) which mandated a 100 NSF office be provided for GS14 and above staff in a supervisory position. VA adopted this mandate per Chief of Staff (00A) VA-wide Memorandum on Sep 17, 2013. Please refer to R&D PG-18-12 Design Guide Section 2.7

6. RR&D Researcher Workstation, Stff Sprt (SS218).....56 NSF (5.3 NSM)
   a. *Provide six if [RR&D is authorized]*

   Per Executive Order 13589, OMB issued Memorandum M-12-12 Freeze the Footprint (FTF) which mandated a 56 NSF workstation be provided for GS14 staff in non-supervisory positions and for GS13 below staff. VA adopted this mandate per Chief of Sf (00A) VA-wide Memorandum on Sep 17, 2013.

7. RR&D Trainee Workstation, Stff Sprt (SS216) .....36 NSF (3.4 NSM)
   a. *Provide three if [RR&D is authorized]*

Per Executive Order 13589, OMB issued Memorandum M-12-12 Freeze the Footprint (FTF) which mandated a 36 NSF workstation be provided for Trainees and Contractors. VA adopted this mandate per Chief of Sf (00A) VA-wide Memorandum on Sep 17, 2013.

8. **RR&D Collaboration Station, Stff Sprt (SS212) .....60 NSF (5.6 NSM)**
   a. Provide one if [RR&D is authorized]

   Open area equipped with a small table and two chairs for casual team member interaction.

9. **RR&D Touch-down Workstation, Stff Sprt (SS218).....56 NSF (5.3 NSM)**
   a. Provide one if [RR&D is authorized]

   Non-dedicated workstation for use on an as-needed, temporary basis for Visiting Researchers, Research Assistants, etc.

10. **RR&D Huddle Room, Stff Sprt (SS285) .....100 NSF (9.3 NSM)**
    a. Provide two if [RR&D is authorized]

    Private meeting space, accommodates a table and seating for 4 people, equipped with VTC equipment.

11. **RR&D Private Call Room, Stff Sprt (SS224).....80 NSF (7.5 NSM)**
    a. Provide one if [RR&D is authorized]

    Room for private / confidential conversations / calls equipped with teleconferencing and collaboration technologies. Allocated NSF accommodates a table and chairs for two people.

12. **RR&D Conference / Multipurpose Room, Educ Svc (SS101).....300 NSF (27.9 NSM)**
    a. Provide one if [RR&D is authorized]

    Allocated NSF accommodates 10 people. Room must be equipped with VTC equipment.

13. **RR&D**
    Conference / Multipurpose Storage Room, Lgstcs Svc (SB773).....80 NSF (7.5 NSM)
    a. Provide one if [RR&D is authorized]

    Allocated NSF accommodates shelving for conference room supplies.

14. **RR&D Records Storage Room, R&D (SC811).....100 NSF (9.3 NSM)**
    a. Provide one if [RR&D is authorized]

15. **RR&D Research Informatics Room, R&D (SC715) .....100 NSF (9.3 NSM)**
    a. Provide one if [RR&D is authorized]

    Space for research workstation to access data on servers located in the main computer room for the facility / campus. Trends with bioinformatics is PI access to certain data.

16. **RR&D Copy / Supply Alcove, Stff Sprt (SS268).....40 NSF (3.8 NSM)**

a. Provide one if [RR&D is authorized]

17. RR&D Staff Breakroom, Stff Sprt (SS262).....240 NSF (22.3 NSM)
a. Provide one if [RR&D is authorized]

Allocated NSF accommodates small kitchenette, 4-person table(s) and chairs, and VCT equipment.

18. RR&D Vending Alcove, VC Svc (SV692) .....40 NSF (3.8 NSM)
a. Provide one if [RR&D is authorized]

19. RR&D Mailroom, Lgstcs Svc (SB653) .....120 NSF (11.2 NSM)
a. Provide one if [RR&D is authorized]

20. RR&D Storage Room, Lgstcs Svc (SB773).....120 NSF (11.2 NSM)
a. Provide one if [RR&D is authorized]

21. RR&D Coat Closet, Stff Sprt (SS229).....40 NSF (3.8 NSM)
a. Provide one if [RR&D is authorized]

22. RR&D Female Staff Locker Room, Stff Sprt (SS232) .....100 NSF (9.3 NSM)
a. Provide one if [RR&D is authorized]

Locate this room adjacent to the Female Staff Toilet.

23. RR&D Male Staff Locker Room, Stff Sprt (SS241) .....100 NSF (9.3 NSM)
a. Provide one if [RR&D is authorized]

Locate this room adjacent to the Male Staff Toilet.

24. RR&D Female Staff Toilet, Bldg Sprt (SB202).....60 NSF (5.6 NSM)
a. Provide one if [RR&D is authorized]

Allocated NSF accommodates one accessible toilet @ 25 NSF, one accessible wall-hung lavatory @ 13 NSF, ABA clearances, and circulation.

25. RR&D Male Staff Toilet, Bldg Sprt (SB203).....60 NSF (5.6 NSM)
a. Provide one if [RR&D is authorized]

Allocated NSF accommodates one accessible toilet @ 25 NSF, one accessible wall-hung lavatory @ 13 NSF, ABA clearances, and circulation.

26. RR&D Housekeeping Aides Closet (HAC), Bldg Sprt (SB244) .....60 NSF (5.6 NSM)
a. Provide one if [RR&D is authorized]

F. <u>FA 6: CSR&D SERVICE STAFF AREA</u>

1. CSR&D Reception, Stff Sprt (SS221).....85 NSF (7.9 NSM)
a. Provide one if [CSR&D is authorized]

Allocated NSF accommodates a receptionist workstation, task chair and file cabinet, space for visitor and circulation.

2. CSR&D Waiting, Stff Sprt (SS222) .....100 NSF (9.3 NSM)

a. Provide one if [CSR&D is authorized]

Allocated area accommodates two standard chairs @ 9 NSF each, one bariatric chair at 14 NSF, one accessible space @ 10 NSF, and circulation; total four people.

3. **CSR&D Patient Interview Room, R&D (SC727) .....100 NSF (9.3 NSM)**
   a. Provide one if [CSR&D is authorized]

   This space is an interview room where patients participating in research can give informed consent for inclusion in the research study as well as provide data to research coordinators and nurses such as adverse events during the course of the study. Please refer to R&D PG-18-12 Design Guide Section 2.8

4. **CSR&D Exam Room, R&D (SC728) .....120 NSF (11.2 NSM)**
   a. Provide one if [CSR&D is authorized]

   Allocated area and equipment accommodate multi-specialty patient examination. Please refer to R&D PG-18-12 Design Guide Section 2.8

5. **CSR&D Workroom, R&D (SC729) .....120 NSF (11.2 NSM)**
   a. Provide one if [CSR&D is authorized]

   Support space for clinical research performed in the Exam Room. Please refer to R&D PG-18-12 Design Guide Section 2.8

6. **CSR&D PI Office, Stff Sprt (SS204) .....100 NSF (9.3 NSM)**
   a. Provide three if [CSR&D is authorized]

   Per Executive Order 13589, OMB issued Memorandum M-12-12 Freeze the Footprint (FTF) which mandated a 100 NSF office be provided for GS14 and above staff in a supervisory position. VA adopted this mandate per Chief of Staff (00A) VA-wide Memorandum on Sep 17, 2013. Please refer to R&D PG-18-12 Design Guide Section 2.8

7. **CSR&D Researcher Workstation, Stff Sprt (SS218) .....56 NSF (5.3 NSM)**
   a. Provide six if [CSR&D is authorized]

   Per Executive Order 13589, OMB issued Memorandum M-12-12 Freeze the Footprint (FTF) which mandated a 56 NSF workstation be provided for GS14 staff in non-supervisory positions and for GS13 below staff. VA adopted this mandate per Chief of Sf (00A) VA-wide Memorandum on Sep 17, 2013.

8. **CSR&D Trainee Workstation, Stff Sprt (SS216).....36 NSF (3.4 NSM)**
   a. Provide three if [CSR&D is authorized]

   Per Executive Order 13589, OMB issued Memorandum M-12-12 Freeze the Footprint (FTF) which mandated a 36 NSF workstation be provided for Trainees and Contractors. VA adopted this mandate per Chief of Staff (00A) VA-wide Memorandum on Sep 17, 2013.

9. **CSR&D Collaboration Station, Stff Sprt (SS212).....60 NSF (5.6 NSM)**
   a. Provide one if [CSR&D is authorized]

Open area equipped with a small table and two chairs for casual team member interaction.

10. **CSR&D Touch-down Workstation, Stff Sprt (SS218) .....56 NSF (5.3 NSM)**
    a. Provide one if [CSR&D is authorized]

    Non-dedicated workstation for use on an as-needed, temporary basis for Visiting Researchers, Research Assistants, etc.

11. **CSR&D Huddle Room, Stff Sprt (SS285) .....100 NSF (9.3 NSM)**
    a. Provide two if [CSR&D is authorized]

    Private meeting space, accommodates a table and seating for 4 people, equipped with VTC equipment.

12. **CSR&D Private Call Room, Stff Sprt (SS224) .....80 NSF (7.5 NSM)**
    a. Provide one if [CSR&D is authorized]

    Room for private / confidential conversations / calls equipped with teleconferencing and collaboration technologies. Allocated NSF accommodates a table and chairs for two people.

13. **CSR&D**
    Conference / Multipurpose Room, Educ Svc (SS101).....300 NSF (27.9 NSM)
    a. Provide one if [CSR&D is authorized]

    Allocated NSF accommodates 10 people. Room must be equipped with VTC equipment.

14. **CSR&D**
    Conference / Multipurpose Storage Room, Lgstcs Svc (SB773).....80 NSF (7.5 NSM)
    a. Provide one if [CSR&D is authorized]

    Allocated NSF accommodates shelving for conference room supplies.

15. **CSR&D Records Storage Room, R&D (SC812).....100 NSF (9.3 NSM)**
    a. Provide one if [CSR&D is authorized]

16. **CSR&D Research Informatics Room, R&D (SC715).....100 NSF (9.3 NSM)**
    a. Provide one if [CSR&D is authorized]

    Space for research workstation to access data on servers located in the main computer room for the facility / campus. Trends with bioinformatics is PI access to certain data.

17. **CSR&D Copy / Supply Alcove, Stff Sprt (SS268).....40 NSF (3.8 NSM)**
    a. Provide one if [CSR&D is authorized]

18. **CSR&D Staff Breakroom, Stff Sprt (SS262) .....240 NSF (22.3 NSM)**
    a. *Provide one if [CSR&D is authorized]*

    Allocated NSF accommodates small kitchenette, 4-person table(s) and chairs, and VCT equipment.

19. **CSR&D Vending Alcove, VC Svc (SV692).....40 NSF (3.8 NSM)**
    a. *Provide one if [CSR&D is authorized]*

20. **CSR&D Mailroom, Lgstcs Svc (SB653) .....120 NSF (11.2 NSM)**
    a. *Provide one if [CSR&D is authorized]*

21. **CSR&D Storage Room, Lgstcs Svc (SB773).....120 NSF (11.2 NSM)**
    a. *Provide one if [CSR&D is authorized]*

22. **CSR&D Coat Closet, Stff Sprt (SS229).....40 NSF (3.8 NSM)**
    a. *Provide one if [CSR&D is authorized]*

23. **CSR&D Female Staff Locker Room, Stff Sprt (SS232) .....100 NSF (9.3 NSM)**
    a. *Provide one if [CSR&D is authorized]*

    Locate this room adjacent to the Female Staff Toilet.

24. **CSR&D Male Staff Locker Room, Stff Sprt (SS241).....100 NSF (9.3 NSM)**
    a. *Provide one if [CSR&D is authorized]*

    Locate this room adjacent to the Male Staff Toilet.

25. **CSR&D Female Staff Toilet, Bldg Sprt (SB202).....60 NSF (5.6 NSM)**
    a. *Provide one if [CSR&D is authorized]*

    Allocated NSF accommodates one accessible toilet @ 25 NSF, one accessible wall-hung lavatory @ 13 NSF, ABA clearances, and circulation.

26. **CSR&D Male Staff Toilet, Bldg Sprt (SB203) .....60 NSF (5.6 NSM)**
    a. *Provide one if [CSR&D is authorized]*

    Allocated NSF accommodates one accessible toilet @ 25 NSF, one accessible wall-hung lavatory @ 13 NSF, ABA clearances, and circulation.

27. **CSR&D Housekeeping Aides Closet (HAC), Bldg Sprt (SB244).....60 NSF (5.6 NSM)**
    a. *Provide one if [CSR&D is authorized]*

G. <u>FA 7: HSR&D SERVICE STAFF AREA</u>

1. **HSR&D Reception, Stff Sprt (SS221).....85 NSF (7.9 NSM)**
    a. *Provide one if [HSR&D is authorized]*

    Allocated NSF accommodates a receptionist workstation, task chair and file cabinet, space for visitor and circulation.

2. **HSR&D Waiting, Stff Sprt (SS222).....100 NSF (9.3 NSM)**
    a. *Provide one if [HSR&D is authorized]*

Allocated area accommodates two standard chairs @ 9 NSF each, one bariatric chair at 14 NSF, one accessible space @ 10 NSF, and circulation; total four people.

3. **HSR&D PI Office, Stff Sprt (SS204) .....100 NSF (9.3 NSM)**
   a. Provide three if [HSR&D is authorized]

   Per Executive Order 13589, OMB issued Memorandum M-12-12 Freeze the Footprint (FTF) which mandated a 100 NSF office be provided for GS14 and above staff in a supervisory position. VA adopted this mandate per Chief of Staff (00A) VA-wide Memorandum on Sep 17, 2013. Please refer to R&D PG-18-12 Design Guide Section 2.9

4. **HSR&D Researcher Workstation, Stff Sprt (SS218).....56 NSF (5.3 NSM)**
   a. Provide six if [HSR&D is authorized]

   Per Executive Order 13589, OMB issued Memorandum M-12-12 Freeze the Footprint (FTF) which mandated a 56 NSF workstation be provided for GS14 staff in non-supervisory positions and for GS13 below staff. VA adopted this mandate per Chief of Sf (00A) VA-wide Memorandum on Sep 17, 2013.

5. **HSR&D Trainee Workstation, Stff Sprt (SS216) .....36 NSF (3.4 NSM)**
   a. Provide three if [HSR&D is authorized]

   Per Executive Order 13589, OMB issued Memorandum M-12-12 Freeze the Footprint (FTF) which mandated a 36 NSF workstation be provided for Trainees and Contractors. VA adopted this mandate per Chief of Sf (00A) VA-wide Memorandum on Sep 17, 2013.

6. **HSR&D Collaboration Station, Stff Sprt (SS212) .....60 NSF (5.6 NSM)**
   a. Provide one if [HSR&D is authorized]

   Open area equipped with a small table and two chairs for casual team member interaction.

7. **HSR&D Touch-down Workstation, Stff Sprt (SS218).....56 NSF (5.3 NSM)**
   a. Provide one if [HSR&D is authorized]

   Open area equipped with a small table and two chairs for casual team member interaction.

8. **HSR&D Huddle Room, Stff Sprt (SS285) .....100 NSF (9.3 NSM)**
   a. Provide two if [HSR&D is authorized]

   Private meeting space, accommodates a table and seating for 4 people, equipped with VTC equipment.

9. **HSR&D Private Call Room, Stff Sprt (SS224).....80 NSF (7.5 NSM)**
   a. Provide one if [HSR&D is authorized]

   Room for private / confidential conversations / calls equipped with teleconferencing and collaboration technologies. Allocated NSF accommodates a table and chairs for two people.

10. **HSR&D Conference / Multipurpose Room, Educ Svc (SS101).....300 NSF (27.9 NSM)**
    a. *Provide one if [HSR&D is authorized]*

    Allocated NSF accommodates 10 people. Room must be equipped with VTC equipment.

11. **HSR&D Conference / Multipurpose Storage Room, Lgstcs Svc (SB773).....80 NSF (7.5 NSM)**
    a. *Provide one if [HSR&D is authorized]*

    Allocated NSF accommodates shelving for conference room supplies.

12. **HSR&F Records Storage Room, R&D (SC813) .....100 NSF (9.3 NSM)**
    a. *Provide one if [HSR&D is authorized]*

    Please refer to R&D PG-18-12 Design Guide Section 2.9

13. **HSR&D Research Informatics Room, R&D (SC715) .....100 NSF (9.3 NSM)**
    a. *Provide one if [HSR&D is authorized]*

    Space for research workstation to access data on servers located in the main computer room for the facility / campus. Trends with bioinformatics is PI access to certain data. Please refer to R&D PG-18-12 Design Guide Section 2.9

14. **HSR&D Copy / Supply Alcove, Stff Sprt (SS268).....40 NSF (3.8 NSM)**
    a. *Provide one if [HSR&D is authorized]*

15. **HSR&D Staff Breakroom, Stff Sprt (SS262).....240 NSF (22.3 NSM)**
    a. *Provide one if [HSR&D is authorized]*

    Allocated NSF accommodates small kitchenette, 4-person table(s) and chairs, and VCT equipment.

16. **HSR&D Vending Alcove, VC Svc (SV692) .....40 NSF (3.8 NSM)**
    a. *Provide one if [HSR&D is authorized]*

17. **HSR&D Mailroom, Lgstcs Svc (SB653) .....120 NSF (11.2 NSM)**
    a. *Provide one if [HSR&D is authorized]*

18. **HSR&D Storage Room, Clncl Sprt (SB773) .....120 NSF (11.2 NSM)**
    a. *Provide one if [HSR&D is authorized]*

19. **HSR&D Coat Closet, Stff Sprt (SS229).....40 NSF (3.8 NSM)**
    a. *Provide one if [HSR&D is authorized]*

20. **HSR&D Female Staff Locker Room, Stff Sprt (SS232) .....100 NSF (9.3 NSM)**
    a. *Provide one if [HSR&D is authorized]*

    Locate this room adjacent to the Female Staff Toilet.

21. **HSR&D Male Staff Locker Room, Stff Sprt (SS241) .....100 NSF (9.3 NSM)**
    a. *Provide one if [HSR&D is authorized]*

    Locate this room adjacent to the Male Staff Toilet.

22. HSR&D Female Staff Toilet, Bldg Sprt (SB202).....60 NSF (5.6 NSM)

a. Provide one if [HSR&D is authorized]

Allocated NSF accommodates one accessible toilet @ 25 NSF, one accessible wall-hung lavatory @ 13 NSF, ABA clearances, and circulation.

23. HSR&D Male Staff Toilet, Bldg Sprt (SB203).....60 NSF (5.6 NSM)

a. Provide one if [HSR&D is authorized]

Allocated NSF accommodates one accessible toilet @ 25 NSF, one accessible wall-hung lavatory @ 13 NSF, ABA clearances, and circulation.

24. HSR&D Housekeeping Aides Closet (HAC), Bldg Sprt (SB244) .....60 NSF (5.6 NSM)

a. Provide one if [HSR&D is authorized]

H. FA 8: VMU TREATMENT AREA

1. VMU General Procedure / Treatment Room, R&D (SC741) .....220 NSF (20.5 NSM)

a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 30

b. Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 31 and 60

c. Provide three if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 61 and 90

Procedure / Treatment room for small animals. Please refer to R&D PG-18-12 Design Guide Section 2.6.5 and Room Template, Room Data Sheet and Equipment Guidelist Section 4.2.8

2. VMU Irradiator Room, R&D (SC747).....175 NSF (16.3 NSM)

a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90

Allocated NSF accommodates cell irradiation equipment. Please refer to R&D PG-18-12 Design Guide Section 2.6.5

3. VMU Diagnostic Laboratory, R&D (SC748).....175 NSF (16.3 NSM)

a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90

Allocated NSF accommodates diagnostic and specimen processing equipment. Please refer to R&D PG-18-12 Design Guide Section 2.6.5

I. FA 9: VMU SURGERY AREA

1. **VMU Surgical Preparation Room, R&D (SC751).....150 NSF (14.0 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45*
   b. *Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90*

   This room is part of the VMU USDA regulated Operating Suite along with the Operating Room (OR), Recovery Room, Gown / Scrub Room and Surgical Supply Room. Please refer to R&D PG-18-12 Design Guide Section 2.6.6

2. **VMU Operating Room (OR), R&D (SC752).....410 NSF (38.1 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45*
   b. *Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90*

   This room is part of the VMU USDA regulated Operating Suite along with the Surgical Preparation Room, Recovery Room, Gown / Scrub Room and Surgical Supply Room. Please refer to R&D PG-18-12 Design Guide Section 2.6.6 and Room Template, Room Data Sheet and Equipment Guidelist Section 4.2.13

3. **VMU Recovery Room, R&D (SC753).....150 NSF (14.0 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45*
   b. *Provide one at 200 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90*

   This room is part of the VMU USDA regulated Operating Suite along with the Surgical Preparation Room, Operating Room (OR), Gown / Scrub Room and Surgical Supply Room. Please refer to R&D PG-18-12 Design Guide Section 2.6.6

4. **VMU Gown / Scrub Room, R&D (SC754).....80 NSF (7.5 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90*

   This room is part of the VMU USDA regulated Operating Suite along with the Surgical Preparation Room, Operating Room (OR), Recovery Room, and Surgical Supply Room. Please refer to R&D PG-18-12 Design Guide Section 2.6.6

5. **VMU Workroom, R&D (SC755).....175 NSF (16.3 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45*
   b. *Provide one at 225 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90*

   Allocated NSF accommodates surgical tools / equipment sterilizer and prepping

them for use in the Operating Room (OR) and Surgical Procedure Room. Please refer to R&D PG-18-12 Design Guide Section 2.6.6

6. **VMU Surgical Supply Storage Room, R&D (SC756).....80 NSF (7.5 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45*
   b. *Provide one at 120 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90*

   This room is part of the VMU USDA regulated Operating Suite along with the Surgical Preparation Room, Operating Room (OR), Recovery Room, and Gown / Scrub Room. Please refer to R&D PG-18-12 Design Guide Section 2.6.6

J. <u>FA 10: VMU IMAGING / BEHAVIORAL STUDY AREA</u>

1. **VMU**
   Imaging / Behavioral Study Preparation Room, R&D (SC761).....340 NSF (31.6 NSM)
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45*
   b. *Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90*

   This room along with the Animal Holding Room, Behavioral Study Room and Imaging Study Room constitute the VMU Imaging / Behavioral Study Suite. Please refer to R&D PG-18-12 Design Guide Section 2.6.7 and Room Template, Room Data Sheet and Equipment Guidelist Section 4.2.12.

2. **VMU Imaging / Behavioral Study**
   Animal Holding Room, R&D (SC762).....165 NSF (15.4 NSM)
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45*
   b. *Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90*

   This room along with the Preparation Room, Behavioral Study Room and Imaging Study Room constitute the VMU Imaging / Behavioral Study Suite. Please refer to R&D PG-18-12 Design Guide Section 2.6.7 and Room Template, Room Data Sheet and Equipment Guidelist Section 4.2.12.

3. **VMU Behavioral Study Room, R&D (SC763).....165 NSF (15.4 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45*
   b. *Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90*

   This room along with the Preparation Room, Animal Holding Room, and Imaging Study Room constitute the VMU Imaging / Behavioral Study Suite. Please refer to R&D PG-18-12 Design Guide Section 2.6.7 and Room Template, Room Data Sheet and Equipment Guidelist Section 4.2.12.

4. **VMU Imaging Study Room, R&D (SC764).....165 NSF (15.4 NSM)**
   a. *Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45*
   b. *Provide four if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90*

   This room along with the Preparation Room, Animal Holding Room, and Behavioral Study Room constitute the VMU Imaging / Behavioral Study Suite. Please refer to R&D PG-18-12 Design Guide Section 2.6.7 and Room Template, Room Data Sheet and Equipment Guidelist Section 4.2.12.

K. <u>FA 11: VMU ANIMAL AREA</u>

1. **VMU Small Animal Holding Room, R&D (SC771).....335 NSF (31.2 NSM)**
   a. *Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 15*
   b. *Provide four if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 16 and 30*
   c. *Provide five if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 31 and 45*
   d. *Provide six if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 60*
   e. *Provide seven if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 61 and 75*
   f. *Provide eight if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 76 and 90*

   This room accommodates small animals, primarily rodents, but can be utilized for other species with appropriate caging systems. Please refer to R&D PG-18-12 Design Guide Section 2.6.4 and Room Template, Room Data Sheet and Equipment Guidelist Section 4.2.9

2. **VMU Behavioral / Metabolic Studies**
   Small Animal Holding Room, R&D (SC772).....335 NSF (31.2 NSM)
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 30*
   b. *Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 31 and 60*
   c. *Provide three if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 61 and 90*

   This room accommodates small animals, primarily rodents; it can be utilized for other species with appropriate caging systems. Please refer to R&D PG-18-12 Design Guide Section 2.6.4

3. **VMU BSL-2 Small Animal Holding Room, R&D (SC773).....335 NSF (31.2 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in*

BLR&D] is between 1 and 30
b. Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 31 and 60
c. Provide three if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 61 and 90

This room accommodates small animals, primarily rodents; it can be utilized for other species with appropriate caging systems. Please refer to R&D PG-18-12 Design Guide Section 2.6.4

4. **VMU BSL-2 Small Animal Holding Anteroom, R&D (SC774) .....80 NSF (7.5 NSM)**
   a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 30
   b. Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 31 and 60
   c. Provide three if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 61 and 90

   Please refer to R&D PG-18-12 Design Guide Section 2.6.4

5. **VMU Large Animal Holding Room, R&D (SC775) .....420 NSF (39.1 NSM)**
   a. Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 30
   b. Provide three if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 31 and 60
   c. Provide four if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 61 and 90

   This room accommodates larger animal species such as rabbits in cages or sheep or swine in pens. Please refer to R&D PG-18-12 Design Guide Section 2.6.4 and Room Template, Room Data Sheet and Equipment Guidelist Section 4.2.10

6. **VMU**
   Small Animal Quarantine Holding Room, R&D (SC778) .....150 NSF (14.0 NSM)
   a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45
   b. Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90

   Allocated NSF accommodates cages for holding small animals coming into the facility to verify health status and safeguard against potential facility contamination. Please refer to R&D PG-18-12 Design Guide Section 2.6.4

7. **VMU**
   Large Animal Quarantine Holding Room, R&D (SC779) .....200 NSF (18.6 NSM)
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 30*
   b. *Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 31 and 60*
   c. *Provide three if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 61 and 90*

   Allocated NSF accommodates pens for holding large animals coming into the facility to verify health status and safeguard against potential facility contamination. Please refer to R&D PG-18-12 Design Guide Section 2.6.4

8. **VMU Necropsy Room, R&D (SC781) .....190 NSF (17.7 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90*

   Allocated NSF accommodates dissection and necropsy of animals. Please refer to R&D PG-18-12 Design Guide Section 2.6.4 and Room Template, Room Data Sheet and Equipment Guidelist Section 4.2.11

L. <u>FA 12: VMU CAGEWASH AREA</u>

1. **VMU Soiled Cage Room, R&D (SC791) .....500 NSF (46.5 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 30*
   b. *Provide one at 750 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 31 and 90*

   This space is for processing soiled cages: removing bedding, disassembling as required and placing them into washing / sterilizing equipment. Please refer to R&D PG-18-12 Design Guide Section 2.6.8

2. **VMU Cagewash Equipment Room, R&D (SC792).....200 NSF (18.6 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90*

   Allocated NSF accommodates cage washing equipment. Please refer to R&D PG-18-12 Design Guide Section 2.6.8

3. **VMU Clean Cage Room, R&D (SC793) .....500 NSF (46.5 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 30*
   b. *Provide one at 750 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 31 and 90*

   Space to remove caging from washing equipment, reassemble and load with food and bedding. Please refer to R&D PG-18-12 Design Guide Section 2.6.8

4. **VMU Sterilizer Equipment Room, R&D (SC794) .....100 NSF (9.3 NSM)**

a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90

Allocated NSF accommodates cage sterilizer. Please refer to R&D PG-18-12 Design Guide Section 2.6.8

5. **VMU Cagewash Detergent Storage Room, R&D (SC797) .....80 NSF (7.5 NSM)**
   a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90

   Storage space for cagewash equipment supplies. Please refer to R&D PG-18-12 Design Guide Section 2.6.8

M. <u>FA 13: VMU SUPPORT AREA</u>

1. **VMU Loading Dock, Lgstcs Svc (SB684) .....240 NSF (22.3 NSM)**
   a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 10 and 90

   Dedicated VMU loading dock. Please refer to R&D PG-18-12 Design Guide Section 2.6.9

2. **VMU Receiving Room, R&D (SC801) .....150 NSF (14 NSM)**
   a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 10 and 30
   b. Provide one at 200 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 31 and 60
   c. Provide one at 250 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 61 and 90

   Allocated NSF accommodates unloading and receiving supplies at loading dock. Please refer to R&D PG-18-12 Design Guide Section 2.6.9

3. **VMU Breakdown Room, Lgstcs Svc (SB522) .....200 NSF (18.6 NSM)**
   a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45
   b. Provide one at 300 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90

   Allocated NSF accommodates supply uncrating / staging / manipulation upon receiving. Please refer to R&D PG-18-12 Design Guide Section 2.6.9

4. **VMU Staging Room, Lgstcs Svc (SB531) .....100 NSF (9.3 NSM)**
   a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45
   b. Provide one at 200 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90

   This space supports the staging of animals or equipment into and out of the VMU. Please refer to R&D PG-18-12 Design Guide Section 2.6.9

5. **VMU Animal Food Preparation Room, R&D (SC799) .....150 NSF (14.0 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 30*
   b. *Provide one at 175 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 31 and 60*
   c. *Provide one at 200 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 61 and 90*

   Allocated NSF accommodates preparation for research animals' food. Please refer to R&D PG-18-12 Design Guide Section 2.6.9

6. **VMU Food Storage Room, R&D (SC806) .....120 NSF (11.2 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 30*
   b. *Provide one at 160 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 31 and 60*
   c. *Provide one at 200 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 61 and 90*

   Allocated NSF accommodates palettes / shelving / refrigerators for storing animal food. Please refer to R&D PG-18-12 Design Guide Section 2.6.9

7. **VMU Bedding Storage Room, R&D (SC798).....150 NSF (14.0 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 30*
   b. *Provide one at 175 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 31 and 60*
   c. *Provide one at 200 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 61 and 90*

   Allocated NSF accommodates storage of bulk animal bedding. Please refer to R&D PG-18-12 Design Guide Section 2.6.9

8. **VMU General Storage Room, R&D (SC803).....240 NSF (22.3 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 15*
   b. *Provide one at 300 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 16 and 30*
   c. *Provide one at 360 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 31 and 45*
   d. *Provide one at 420 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 60*
   e. *Provide one at 480 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 61 and 75*
   f. *Provide one at 540 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 76 and 90*

   Allocated NSF accommodates storage of VMU equipment. Please refer to R&D PG-18-12 Design Guide Section 2.6.9

9. **VMU Carcass Freezer Room, R&D (SC804)..... 75 NSF (7 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90*

   Allocated NSF accommodates -20oC freezers for storing animal carcasses. Please refer to R&D PG-18-12 Design Guide Section 2.6.9

10. **VMU Waste Room, R&D (SC805).....120 NSF (11.2 NSM)**
    a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 30*
    b. *Provide one at 160 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 31 and 60*
    c. *Provide one at 200 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 61 and 90*

    Allocated NSF accommodates waste holding. Please refer to R&D PG-18-12 Design Guide Section 2.6.9

11. **VMU Laundry Room, R&D (SC802) .....100 NSF (9.3 NSM)**
    a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45*
    b. *Provide one at 160 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90*

    Space for VMU laundry, coordinate with other campus laundry facilities. Please refer to R&D PG-18-12 Design Guide Section 2.6.9

12. VMU Housekeeping Aides Closet (HAC), Bldg Sprt (SB244) .....60 NSF (5.6 NSM)

a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 30

b. Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 31 and 90

N. FA 14: VMU STAFF AREA

1. VMU Veterinarian Office, Stff Sprt (SS204).....100 NSF (9.3 NSM)

a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90

Per Executive Order 13589, OMB issued Memorandum M-12-12 Freeze the Footprint (FTF) which mandated a 100 NSF office be provided for GS14 and above staff in a supervisory position. VA adopted this mandate per Chief of Staff (00A) VA-wide Memorandum on Sep 17, 2013. Please refer to R&D PG-18-12 Design Guide Section 2.6.10

2. VMU Supervisor Office, Stff Sprt (SS205).....80 NSF (7.5 NSM)

a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 30

b. Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 31 and 60

c. Provide three if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 61 and 90

Per Executive Order 13589, OMB issued Memorandum M-12-12 Freeze the Footprint (FTF) which mandated an 80 NSF office be provided for GS13 and below staff in a supervisory position. VA adopted this mandate per Chief of Staff (00A) VA-wide Memorandum on Sep 17, 2013. Please refer to R&D PG-18-12 Design Guide Section 2.6.10

3. VMU
Veterinary Research Associate Workstation, Stff Sprt (SS218) .....56 NSF (5.3 NSM)

a. Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45

b. Provide four if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90

Per Executive Order 13589, OMB issued Memorandum M-12-12 Freeze the Footprint (FTF) which mandated a 56 NSF workstation be provided for GS14 staff in non-supervisory positions and for GS13 below staff. VA adopted this mandate per Chief of Sf (00A) VA-wide Memorandum on Sep 17, 2013.

4. VMU Huddle Room, Stff Sprt (SS285) .....160 NSF (14.9 NSM)

a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90

Private meeting space, accommodates a table and seating for 4 people, equipped with VTC equipment.

5. **VMU Copy / Supply Room, Stff Sprt (SS268) .....80 NSF (7.5 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90*

   Allocated NSF for shared printer and office supplies.

6. **VMU Staff Breakroom, Stff Sprt (SS262) .....120 NSF (11.2 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45*
   b. *Provide one at 240 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90*

   Allocated NSF accommodates small kitchenette, 4-person table(s) and chairs, and VCT equipment.

7. **VMU Female Staff Locker Room, Stff Sprt (SS232) .....120 NSF (11.2 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45*
   b. *Provide one at 180 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90*

   Locate adjacent to the Female Staff Shower; provide direct access to Female Staff Shower.

8. **VMU Female Staff Toilet, Bldg Sprt (SB202).....60 NSF (5.6 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45*
   b. *Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90*

   Allocated NSF accommodates one accessible toilet @ 25 NSF, one accessible wall-hung lavatory @ 13 NSF, ABA clearances, and circulation.

9. **VMU Female Staff Shower, Bldg Sprt (SB173).....70 NSF (6.6 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45*
   b. *Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90*

   Allocated NSF accommodates one accessible shower @ 28 NSF, one accessible bench @ 16 NSF, ABA clearances, and circulation.

10. VMU Male Staff Locker Room, Stff Sprt (SS241).....120 NSF (11.2 NSM)

a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45

b. Provide one at 180 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90

Locate adjacent to the Male Staff Toile; provide direct access to Male Staff Shower.

11. VMU Male Staff Toilet, Bldg Sprt (SB203) .....60 NSF (5.6 NSM)

a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45

b. Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90

Allocated NSF accommodates one accessible toilet @ 25 NSF, one accessible wall-hung lavatory @ 13 NSF, ABA clearances, and circulation.

12. VMU Male Staff Shower, Bldg Sprt (SB184) .....70 NSF (6.6 NSM)

a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45

b. Provide two if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90

Allocated NSF accommodates one accessible shower @ 28 NSF, one accessible bench @ 16 NSF, ABA clearances, and circulation.

O. FA 15: R&D NON-PROFIT (N-P) STAFF AREA

1. R&D N-P Waiting, Stff Sprt (SS222).....110 NSF (10.3 NSM)

a. Provide one if ([R&D Non-Profit (N-P) is authorized] and [R&D Non-Profit (N-P) size authorized] is 1)

b. Provide one at 170 NSF if ([R&D Non-Profit (N-P) is authorized] and [R&D Non-Profit (N-P) size authorized] is 2)

c. Provide one at 215 NSF if ([R&D Non-Profit (N-P) is authorized] and [R&D Non-Profit (N-P) size authorized] is 3)

Allocated baseline 110 NSF accommodates three standard and one bariatric chair(s), one accessible space and circulation; total five people.

Allocated 170 NSF accommodates six standard and one bariatric chair(s), one accessible space and circulation; total eight people.

Allocated 215 NSF accommodates eight standard and one bariatric chair(s), one accessible space and circulation; total ten people.

2. R&D N-P Reception, Stff Sprt (SS221) .....85 NSF (7.9 NSM)

a. Provide one if [R&D Non-Profit (N-P) is authorized] and ([R&D Non-Profit (N-P) size authorized] is 1 or [R&D Non-Profit (N-P) size authorized] is 2 or [R&D Non-Profit (N-P) size authorized] is 3)

Allocated NSF accommodates a receptionist workstation, task chair and file cabinet, space for visitor and circulation.

3. **R&D N-P Director Office, Stff Sprt (SS204) .....100 NSF (9.3 NSM)**
   a. *Provide one if [R&D Non-Profit (N-P) is authorized] and ([R&D Non-Profit (N-P) size authorized] is 1 or [R&D Non-Profit (N-P) size authorized] is 2 or [R&D Non-Profit (N-P) size authorized] is 3)*

   Per Executive Order 13589, OMB issued Memorandum M-12-12 Freeze the Footprint (FTF) which mandated a 100 NSF office be provided for GS14 and above staff in a supervisory position. VA adopted this mandate per Chief of Staff (00A) VA-wide Memorandum on Sep 17, 2013.

4. **R&D N-P Executive Director Office, Stff Sprt (SS204).....100 NSF (9.3 NSM)**
   a. *Provide one if [R&D Non-Profit (N-P) is authorized] and ([R&D Non-Profit (N-P) size authorized] is 2 or [R&D Non-Profit (N-P) size authorized] is 3)*

   Per Executive Order 13589, OMB issued Memorandum M-12-12 Freeze the Footprint (FTF) which mandated a 100 NSF office be provided for GS14 and above staff in a supervisory position. VA adopted this mandate per Chief of Staff (00A) VA-wide Memorandum on Sep 17, 2013.

5. **R&D N-P Staff Workstation, Stff Sprt (SS218).....56 NSF (5.3 NSM)**
   a. *Provide one if [R&D Non-Profit (N-P) is authorized] and [R&D Non-Profit (N-P) size authorized] is 1*
   b. *Provide four if [R&D Non-Profit (N-P) is authorized] and [R&D Non-Profit (N-P) size authorized] is 2*
   c. *Provide six if [R&D Non-Profit (N-P) is authorized] and [R&D Non-Profit (N-P) size authorized] is 3*

   Per Executive Order 13589, OMB issued Memorandum M-12-12 Freeze the Footprint (FTF) which mandated a 56 NSF workstation be provided for GS14 staff in non-supervisory positions and for GS13 below staff. VA adopted this mandate per Chief of Sf (00A) VA-wide Memorandum on Sep 17, 2013.

6. **R&D N-P Copy / Supply Alcove, Stff Sprt (SS268) .....40 NSF (3.8 NSM)**
   a. *Provide one if [R&D Non-Profit (N-P) is authorized] and ([R&D Non-Profit (N-P) size authorized] is 1 or [R&D Non-Profit (N-P) size authorized] is 2 or [R&D Non-Profit (N-P) size authorized] is 3)*

7. **N-P Office Storage Room, R&D (SC814) .....80 NSF (7.5 NSM)**
   a. *Provide one if [R&D Non-Profit (N-P) is authorized] and [R&D Non-Profit (N-P) size authorized] is 1*
   b. *Provide one at 100 NSF if [R&D Non-Profit (N-P) is authorized] and [R&D Non-Profit (N-P) size authorized] is 2*
   c. *Provide one at 120 NSF if [R&D Non-Profit (N-P) is authorized] and [R&D Non-Profit (N-P) size authorized] is 3*

P. <u>FA 16: R&D STAFF AND ADMINISTRATIVE AREA</u>

1. **R&D Administrative Officer (AO) Office, Stff Sprt (SS204) .....100 NSF (9.3 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90 or [RR&D is authorized] or [CSR&D is authorized] or [HSR&D is authorized] or [R&D Non-Profit (N-P) is authorized]*

   Per Executive Order 13589, OMB issued Memorandum M-12-12 Freeze the Footprint (FTF) which mandated a 100 NSF office be provided for GS14 and above staff in a supervisory position. VA adopted this mandate per Chief of Staff (00A) VA-wide Memorandum on Sep 17, 2013. Please refer to R&D PG-18-12 Design Guide Section 2.10

2. **R&D**
   Administrative Chief of Staff (ACOS) Office, Stff Sprt (SS204).....100 NSF (9.3 NSM)
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90 or [RR&D is authorized] or [CSR&D is authorized] or [HSR&D is authorized] or [R&D Non-Profit (N-P) is authorized]*

   Per Executive Order 13589, OMB issued Memorandum M-12-12 Freeze the Footprint (FTF) which mandated a 100 NSF office be provided for GS14 and above staff in a supervisory position. VA adopted this mandate per Chief of Staff (00A) VA-wide Memorandum on Sep 17, 2013. Please refer to R&D PG-18-12 Design Guide Section 2.10

3. **R&D**
   Research Compliance Officer (RCO) Office, Stff Sprt (SS204) .....100 NSF (9.3 NSM)
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90 or [RR&D is authorized] or [CSR&D is authorized] or [HSR&D is authorized] or [R&D Non-Profit (N-P) is authorized]*

   Per Executive Order 13589, OMB issued Memorandum M-12-12 Freeze the Footprint (FTF) which mandated a 100 NSF office be provided for GS14 and above staff in a supervisory position. VA adopted this mandate per Chief of Staff (00A) VA-wide Memorandum on Sep 17, 2013. Please refer to R&D PG-18-12 Design Guide Section 2.10

4. **R&D Copy / Supply Alcove, Stff Sprt (SS268).....40 NSF (3.8 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90 or [RR&D is authorized] or [CSR&D is authorized] or [HSR&D is authorized] or [R&D Non-Profit (N-P) is authorized]*

5. **R&D Conference / Multipurpose Room, Educ Svc (SS101).....300 NSF (27.9 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90 or [RR&D is authorized] or [CSR&D is authorized] or [HSR&D is authorized] or [R&D Non-Profit (N-P) is authorized]*

   Minimum allocated NSF accommodates 10 people. Room must be equipped with VTC equipment. Please refer to R&D PG-18-12 Design Guide Section 2.10

6. **R&D**

Conference / Multipurpose Storage Room, Lgstcs Sprt (SB773).....80 NSF (7.5 NSM)

a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90 or [RR&D is authorized] or [CSR&D is authorized] or [HSR&D is authorized] or [R&D Non-Profit (N-P) is authorized]

Allocated NSF accommodates shelving for conference room supplies.

Q. FA 17: R&D SUPPORT AREA

1. **R&D Receiving Room, Lgstcs Svc (SB687).....140 NSF (13.1 NSM)**
   a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45
   b. Provide one at 200 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90

   This space is used to verify, and scan received materials and goods into the electronic inventory system; minimum allocated NSF accommodates one scanning station and temporary staging space for materials unloaded from delivery lane. Please refer to R&D PG-18-12 Design Guide Section 2.12

2. **R&D Breakdown, Lgstcs Svc (SS262) .....120 NSF (11.2 NSM)**
   a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45
   b. Provide one at 180 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90

   Allocated NSF accommodates material uncrating / staging / manipulation upon unload from delivery lane. Please refer to R&D PG-18-12 Design Guide Section 2.12

3. **Flex Storage, R&D (SC816).....240 NSF (22.3 NSM)**
   a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45
   b. Provide one at 320 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90

   Temporary holding space for incoming supplies and equipment that are not ready for delivery or installation. Please refer to R&D PG-18-12 Design Guide Section 2.12

4. **Chemical Waste Room, R&D (SC821).....165 NSF (15.4 NSM)**
   a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90

   Allocated NSF accommodates bulk storage of flammable and other hazardous chemical waste in lab quantities (generally 5 gallon containers). Please refer to R&D PG-18-12 Design Guide Section 2.12

5. **Radioactive Waste Room, R&D (SC822).....165 NSF (15.4 NSM)**
   a. Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90

Allocated NSF accommodates storage of low level radioactive waste and waste in solutions. Please refer to R&D PG-18-12 Design Guide Section 2.12

6. **Biological Waste Room, R&D (SC823) .....165 NSF (15.4 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90*

   This space is for holding biological waste up to BSL-2. Please refer to R&D PG-18-12 Design Guide Section 2.12

7. **R&D Flammable Storage Room, Lgstcs Svc (SB561).....165 NSF (15.4 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90*

   Allocated NSF accommodates bulk storage of flammable chemicals in lab quantities (generally 5 gallon containers). Please refer to R&D PG-18-12 Design Guide Section 2.12

8. **R&D Corrosive Storage Room, Lgstcs Svc (SB565) .....165 NSF (15.4 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90*

   Allocated NSF accommodates bulk storage of corrosive chemicals and waste. Please refer to R&D PG-18-12 Design Guide Section 2.12

9. **R&D Recycling Room, Bldg Sprt (SB267) .....80 NSF (7.5 NSM)**
   a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 45*
   b. *Provide one at 120 NSF if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 46 and 90*

   Please refer to R&D PG-18-12 Design Guide Section 2.12

10. **R&D Gas Manifold Room, Bldg Sprt (SB241) .....165 NSF (15.4 NSM)**
    a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90*

    Allocated NSF accommodates cylinders and manifolds supplying gas piping systems such as CO2 that is centrally delivered to the facility. Please refer to R&D PG-18-12 Design Guide Section 2.12

11. **R&D**
    Full / Empty Gas Cylinder Storage Room, Lgstcs Svc (SB551) .....165 NSF (15.4 NSM)
    a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90*

    Allocated NSF accommodates storage of gas cylinders. Please refer to R&D PG-18-12 Design Guide Section 2.12

12. **BLR&D Telecommunications Room (TR), OIT (SC391).....100 NSF (9.3 NSM)**
    a. *Provide two if [number of Principal Investigators (PIs) conducting research in*

BLR&D] is between 1 and 15

b. *Provide three if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 16 and 27*
c. *Provide four if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 28 and 39*
d. *Provide five if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 40 and 51*
e. *Provide six if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 52 and 63*
f. *Provide seven if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 64 and 75*
g. *Provide eight if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 76 and 87*
h. *Provide nine if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 88 and 90*

This room accommodates active and passive distribution equipment and conduit risers for OIT and FMS.

13. R&D Housekeeping Aides Closet (HAC), Bldg Sprt (SB244) .....60 NSF (5.6 NSM)

a. *Provide one if [number of Principal Investigators (PIs) conducting research in BLR&D] is between 1 and 90*

R. <u>SEPS IMPORTER SHORTCUTS</u>

1. *number of Principal Investigators (PIs) conducting research in BLR&D:* [How many Principal Investigators (PIs) will conduct research in the Biomedical Laboratory Research and Development (BLR&D) Service? (S)]
2. *RR&D is authorized:* [Is Rehabilitation Research and Development (RR&D) Service authorized? (M)]
3. *CSR&D is authorized:* [Is Clinical Science Research and Development (CSR&D) Service authorized? (M)]
4. *HSR&D is authorized:* [Is Health Services Research and Development (HSR&D) Service authorized? (M)]
5. *R&D Non-Profit (N-P) is authorized:* [Is an R&D Non-Profit (N-P) authorized? (M)]
6. *R&D Non-Profit (N-P) size authorized:* [What size R&D Non-Profit (N-P) is authorized? (Misc)]

6. PLANNING AND DESIGN CONSIDERATIONS

A. BIOMEDICAL LABORATORY RESEARCH AND DEVELOPMENT (BLR&D) SERVICE

1. The primary design consideration for laboratory spaces is the safe use of hazardous materials such as chemicals, biological agents, radioisotopes, cryogenics, and hazardous gases. Consideration must include location and types of primary containment devices such as fume hoods and biological safety cabinets, storage

cabinets, pathways of material inflow and hazardous waste outflow and space separation requirements.

2. It is important to plan pathways for safe exiting of laboratory space to provide two exits from the lab where required by size or configuration of space. Space for any protocols required at exiting such as handwashing and lab coat removal must be planned.
3. Flexibility for adaptive use of space and research needs change over time is an important consideration. The trend is to reduce fixed elements, where reasonable, and to minimize fixed elements that are difficult to move such as plumbing drains in the center of rooms. Place them on the perimeter where possible.
4. In the laboratory space consider both the wet bench within the laboratory for experimental processes and procedures and dry bench within the lab for analytical work and results write-up.
5. An increasingly important consideration is the increased use of cell and tissue culture. For example, culture needs might include clean culture for mammalian cells, 3D cultures and organoids; bacterial culture to express proteins; and potentially hazardous culture for infectious disease and viral vectors. These different culture models may require separate spaces to avoid cross contamination. Design of a tissue culture room must allow a clear workflow to minimize the potential for culture contamination.
6. With the increase in tissue culture needs comes the increase in the need for storage of cells in ultra-low temperature freezers and the related storage for growth media, supplies, and protective equipment. Ultra-low temperature freezers are large, and temperatures may be attained with mechanical equipment or liquid nitrogen. Mechanical freezers produce heat and noise. Locating them in a space with low occupancy and adequate cooling is critical. Liquid nitrogen freezers require liquid nitrogen to be moved into the space to fill the freezers.
7. Considerations for fume hood rooms include placement of fume hoods to allow exiting from the space in the event of an accident, appropriate storage for chemicals used and bench space for weighing and measuring chemicals.
8. Considerations for microscopy rooms include the ability to darken the space as well as low vibration structure and / or vibration isolation tables for the microscope.
9. Consideration for the glassware washing room include the movement of carts into and out of the room and the movement and storage space for autoclave and glassware loading carts.
10. Larger research centers labs may have shared facilities with specialized equipment for genomics, proteomics, mass spectroscopy and other technologies that require ganging smaller rooms together or accommodating technologies in open laboratory areas.

11. In the office areas outside of the laboratory provide dry work area analytical and other desk work. This space is becoming more important as bioinformatics becomes an increasingly prevalent aspect of research.

B. REHABILITATION RESEARCH AND DEVELOPMENT (RR&D) SERVICE

1. Some RR&D may have similar laboratory and VMU research requirements as found in BLR&D, however, animal model species may vary depending on areas of research.
2. Rehabilitation research also involves significant engineering components that may require dry engineering laboratory space and fabrication space to develop and assemble devices including electronic and computer components. This may include robotics, bionics, advanced orthotics and prosthetics as sensors and assistive devises are integrated with the human body.
3. Rehabilitation research often uses humans as research subject evaluating new therapies and technologies for safety and effectiveness. Similar design considerations as described for CSR&D may apply to the spaces where work is done with human subjects and in the dry workplace that supports the clinical research work.
4. Rehabilitation research areas for physical and occupational therapy research generally requires large open areas to allow research subjects to move with assistive devices or on therapy equipment. This may involve creating videos of research activities.
5. Rehabilitation research areas for cognitive issues require smaller spaces and quieter environments for one-on-one activities.
6. Rehabilitation clinical research often involves persons in wheelchairs or with other forms of limited mobility. Adequate space for ramps and wheelchair access to rehabilitation equipment must be integral to the planning.
7. Rehabilitation technologies are expanding rapidly, providing adequate space for research expansion must be a consideration in the early planning process.

C. CLINICAL SCIENCE RESEARCH AND DEVELOPMENT (CSR&D) SERVICE

1. CSR&D utilizes humans as research subjects. All human research subjects in the US are volunteers so design considerations that make research visible to Veterans visiting VA facilities can support awareness of VA research to potential volunteers.
2. Create facility plans that allow easy access for research participants.
3. Clinical research is both done in separate research clinics as well as integrated into standard of care clinics. Integration with standard-of-care requires providing enough clinical space and support to accommodate both the clinical visits and research visits. Research could be conducted in any type of clinical space.
4. Provide space to allow accrual of volunteers into research projects or clinical trials and for the patient and family to give informed consent for participation.

5. Provide space for sample collection and initial processing to stabilize samples prior to moving to research laboratories. Assess where and how samples will be stored for research projects.
6. Provide pharmacy space for experimental therapeutics.
7. Workplace inside the clinical areas is required for investigators, research coordinators and research nurses. This may be touchdown space for work involving contact with research subjects if primary workplace is provided elsewhere.
8. Separate dry workplace outside of the clinical areas is often required for investigators, research managers, research coordinators and other team members such as data analysts. As team members may need to contact research participants by phone, noise levels and patient privacy issues must be considered.
9. Secure storage is critical in clinical research. Evaluation of size and location of storage is an important consideration.
10. Many research records are required to be in hard copy. Both lockable short-term binder storage and long-term record storage must be evaluated.
11. Training and education space must be considered to support research team development.
12. Data analysis and artificial intelligence driven tools are increasingly important in clinical research. The ability to work with, visualize and share data with the most effective current tools and technologies are important design considerations.

D. HEALTH SERVICES RESEARCH AND DEVELOPMENT (HSR&D) SERVICE

1. HSR&D is primarily an office-based research activity. The workplace considerations from CSR&D and BLR&D must be evaluated for HSR&D as well.
2. Data analysis is becoming an increasingly important activity in HSR&D. The ability to visualize and share data with the most effective tools is an important design consideration.
3. The need for teams to be mobile for work in the field or collect data at other locations is increasing. Touchdown and collaborative work areas to provide a home base for these personnel in HSR&D workplaces must be evaluated.
4. Training space for research teams must be a strong consideration.

E. VETERINARY MEDICAL UNIT (VMU)

1. Animal welfare is the prime design consideration for Veterinary Medical Units. Providing an environment for the appropriate housing and care of the animals is critical including temperature and lighting.
2. Safety for personnel is an important consideration. VMUs can be wet environments where large, heavy cage racks are moved. Slip resistant flooring, wall protection, wide corridors and door openings are all requirements to allow safe and efficient

movement. Cage changing stations to reduce dander in the environment is an important consideration for staff safety.

3. Durability and protection of finishes, door frames wall mounter equipment is critical as large heavy equipment is moved through the facility. Damaged finished and other defects can be identified by laboratory animal accrediting agencies.
4. Designing to reduce areas for vermin harborage is a significant consideration. Crack and crevices must be eliminated or minimized. Unnecessary floor mounter cabinets must be avoided.
5. Cage and rack washing space must be planned to allow the easy movement of large cage racks. The layout on the dirty side must follow the process for cage dumping, disassembly and placement of cages and parts in the washing equipment. Once the cages are washed the design must support the flow of cage reassembly, filling with bedding, food and other materials and placement on racks for distribution to holding rooms in the facility.
6. Animal species to be housed will be a driver of room and specific housing. Considerations that may impact planning will be specific research study requirements such as behavioral studies, infectious disease research, and other specialized studies.
7. Operating suites for larger animals such as rabbits, swine and sheep must be planned to accommodate a wide range of procedures and survival surgeries. Procedure space for rodents must be provided to allow research teams to handle animals separately for research procedures from the care teams changing cages in cage change stations within the room.
8. Imaging suites must be designed for future equipment flexibility as small animal imaging technology is evolving and equipment will change over time. Small animal PET scanner studies will require handling and disposal of radioisotopes.
9. The staff breakroom and office area must have natural light if possible as little other natural light is found in animal facilities.

7. FUNCTIONAL RELATIONSHIPS

TABLE 1: RESEARCH AND DEVELOPMENT (R&D) FUNCTIONAL RELATIONSHIP WITH OTHER SERVICES IN A VAMC

SERVICES (PATIENT CARE / PATIENT CARE SUPPORT)	RELATIONSHIP
CLINICAL SERVICES: VAMC / Hospital Based	1
INPATIENT SERVICES: MS, ICU, MH, Polytrauma, SCI	1
OUTPATIENT SERVICES: MH, Polytrauma, SCI & Community Based	1
RESIDENTIAL SERVICES: MH, Polytrauma, SCI & Small House	1
BLDG SPRT: ENG: Biomedical Repair	1
BLDG SPRT: Logistics Svc: Loading Dock	1
BLDG SPRT: Lgstcs Svc: Warehouse	1

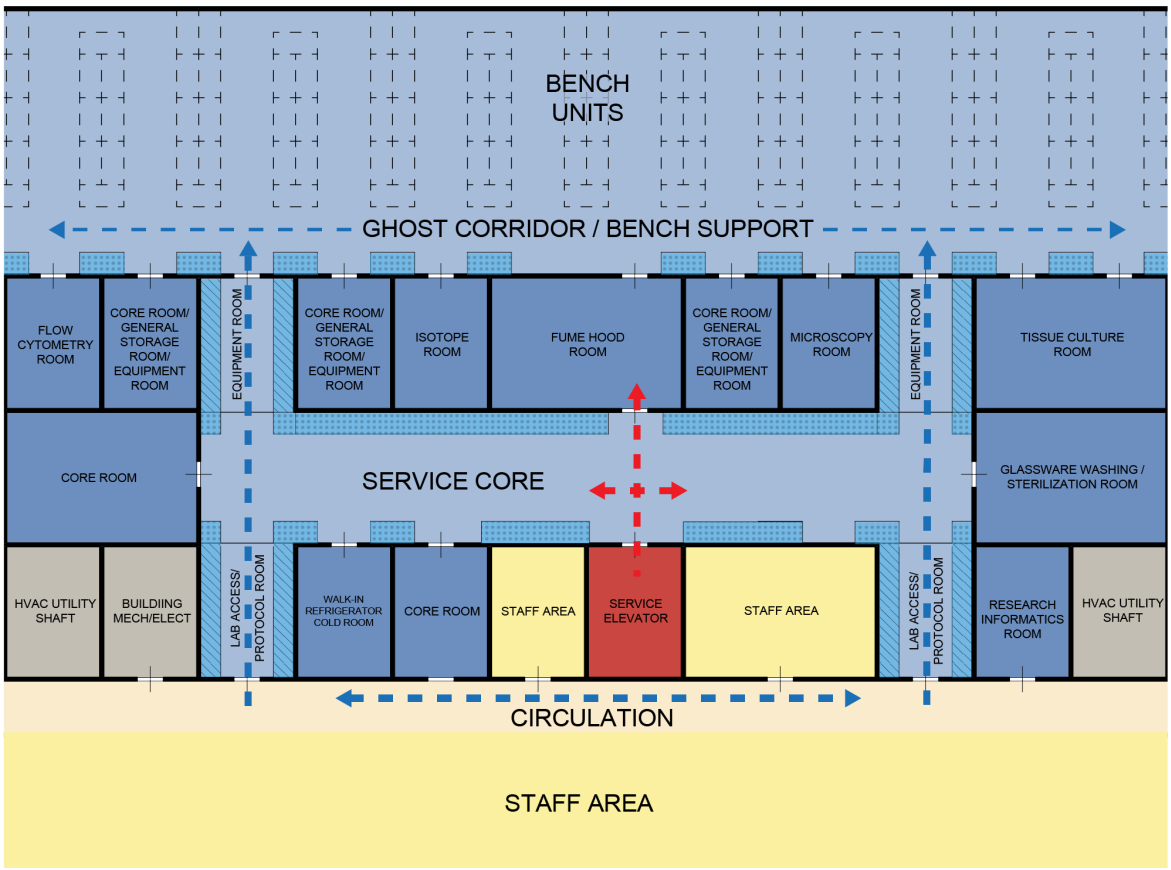
CLNCL SPRT: OIT: Server	1
CLNCL SPRT: OIT: Telecommunications	1
CLNCL SPRT: Health Sciences Library	1
BLDG SPRT: logistics Svc: Postal / Mail Service	2
BLDG SPRT: Police & Security	2
STFF SPRT: Education: Laboratory	2
CLNCL SPRT: MM: Photography	3
CLNCL SPRT: MM: Illustration	3
CLNCL SPRT: MM: MMVSS: Photography	3
CLNCL SPRT: MM: MMVSS: Illustration	3
CLNCL SPRT: MM: MMVSS: Audiovisual	3
CLNCL SPRT: MM: MMVSS: Copy Center	3

Legend

1. High
2. Moderate
3. Minimal

8. FUNCTIONAL DIAGRAMS

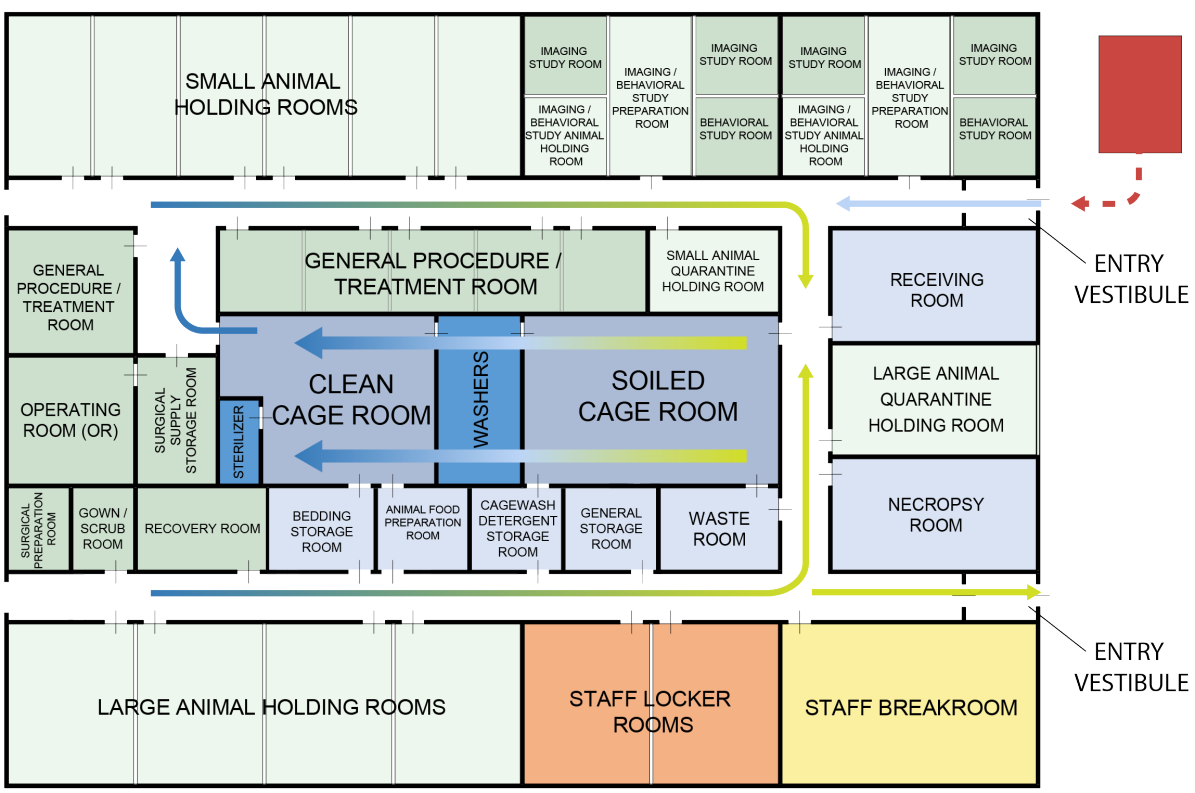
Biomedical Laboratory Research and Development (BLR&D) Service



LEGEND

- STAFF AREA
- LABORATORY
- CLOSED SUPPORT AND CORE ROOMS
- VERTICAL CIRCULATION
- BUILDING MEP SUPPORT
- LAB COAT STORAGE & PPE
- EQUIPMENT
- STAFF CIRCULATION
- HAZARDOUS MATERIALS CIRCULATION

Veterinary Medical Unit (VMU)



LEGEND

- OFFICE / BREAK
- LOCKER
- HOLDING
- PROCEDURE
- VMU SUPPORT
- CAGEWASH
- EQUIPMENT ZONES
- SERVICE ELEVATOR
- CAGE FLOW
- WASTE
- SUPPLIES