

Integrated Research Facility Laboratory of Virology - Program

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Chief Laboratory of Virology
Chief Scientist of the RML BSL4 Facilities



Laboratory of Virology (LV)

Division of Intramural Research, NIAID, NIH
Director, Dr K Zoon

Laboratory of Virology (LV)
Chief, Dr H Feldmann

Office of the Chief

1 assistant
1 BSL4 Suite Manager

Tick-borne
Flaviviruses
(TBFV)
(PI, Dr M Bloom)

2 FTEs
1 scientist
3 postdocs/IRTA

Virology/Ecology
(Offer accepted)

2 FTEs
3 postdocs/IRTA

Disease Modeling &
Transmission (DMT)
(PI, Dr H Feldmann)

5 FTEs
9 postdocs/IRTA

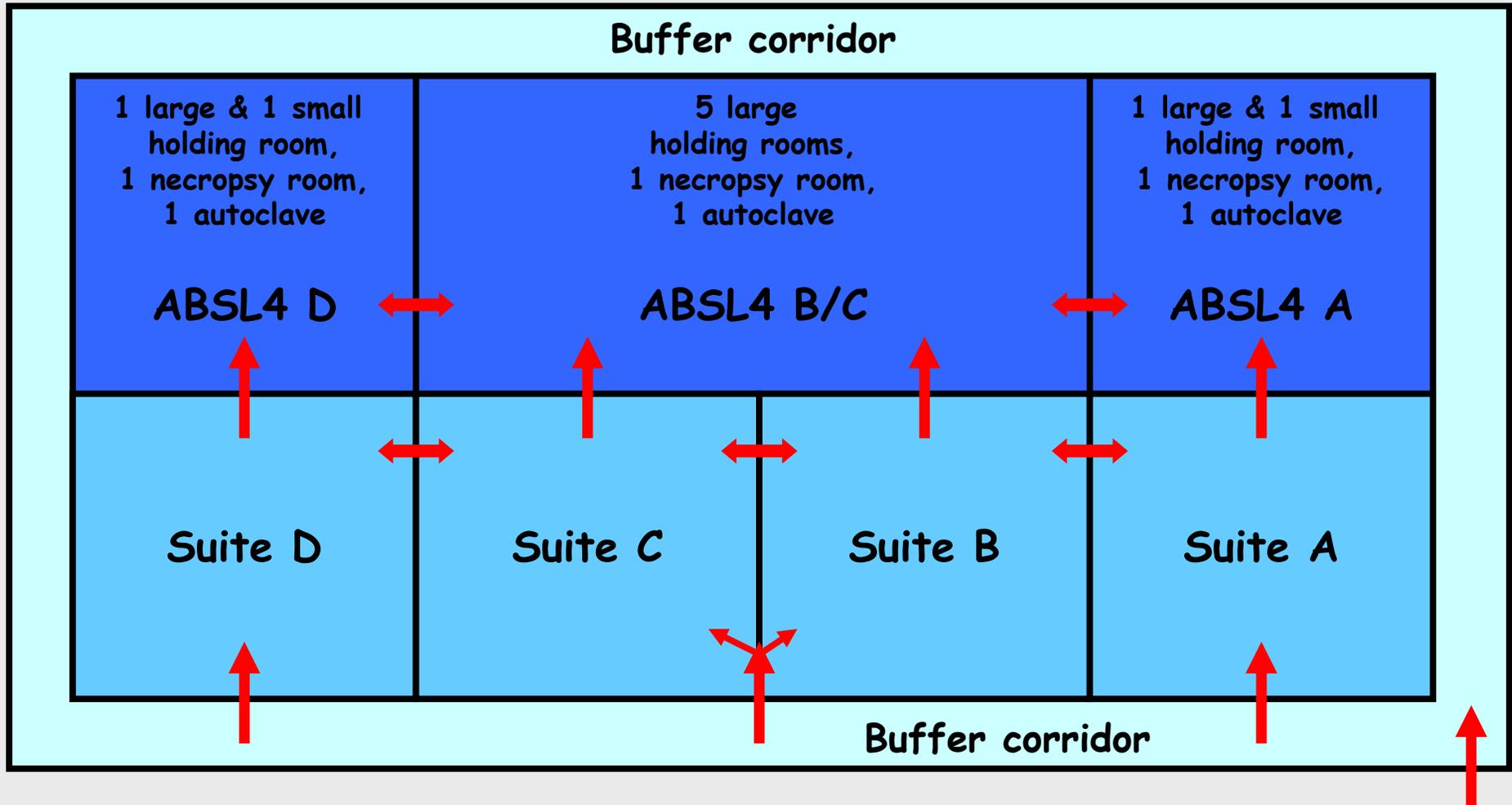
Immunology/
Vaccinology
(PI, G Kobinger)

2 FTEs
3 postdocs/IRTA

Innate Immunity &
Pathogenesis
(PI, Dr S Best)

2 FTEs
2 postdocs/IRTA

Floor plan BSL4/ABSL4 (cartoon)



Risk Group 4

Agents that are likely to cause serious or lethal human disease for which preventive or therapeutic interventions are *not usually* available (high individual risk & high community risk).

Arenaviridae

Lassa virus, Junin virus, Machupo virus, Sabia virus, Guanarito virus

Bunyaviridae

Crimean -Congo hemorrhagic fever virus

Filoviridae

Marburg virus, Ebola virus

Flaviviridae

Tick-borne encephalitis complex, including Russian Spring-Summer Encephalitis, Kyasanur forest virus, Omsk hemorrhagic fever virus

Paramyxoviridae

Hendra virus, Nipah virus

Herpesviridae

Herpes B virus

Poxviridae

Variola virus



Program mandates

- Research on emerging high containment pathogens -
- Development of countermeasures -
- National/international training/education center -
- Emergency response -

Program's Research Interest

- Understanding the pathogen life cycle (viruses) to identify targets for intervention (antivirals)
- Understanding host response mechanisms to identify targets for intervention (therapeutica)
- Understanding host immune responses to identify correlates of survival and protection (vaccines)
- Understanding pathogen-reservoir interactions to identify mechanisms of transmission (prevention)

Projects

- Development of reverse genetics systems (filo-, paramyxo- & bunyaviruses)
- Pathogenesis studies using recombinant viruses with targeted mutations (filo- & orthomyxoviruses)
 - Development of disease models (bunya- & paramyxoviruses)
 - Transmission studies in disease models (filo- & bunyaviruses)
- Interaction 'virus and endothelium' (rheometer system) (filo- & bunyaviruses)
 - Innate immune response to infection (filo-, bunya- & flaviviruses)
 - Adaptive immune response to infection (filo- & bunyaviruses)
- Vaccine development using different platforms (VSV, adeno & others) (filo- & bunyaviruses)
- Virus/reservoir interactions in lab colonies (rodents & bats) (filo-, bunya- & paramyxoviruses)
- Transmission studies in reservoir species (rodents & bats) (filo-, bunya, & paramyxoviruses)
 - Field ecological studies (filo- & bunyaviruses)