



The Southeastern Biosafety Laboratory Alabama Birmingham (SEBLAB)

A Top Tier Biocontainment Research Facility with Cutting-Edge Scientific Equipment to Advance your BSL-3/ABSL-3 Research Program

ABOUT SEBLAB

- **FREE** to work in this cutting-edge high containment research facility, conveniently located on campus adjacent to Shelby, Pittman, and Bevill Biomedical Research Buildings
- Built in 2008 in response to 9/11 and national Anthrax Bioterrorism Threats
- Mission to support research on BSL-3 pathogens and the development of medical countermeasures (vaccines, drugs, diagnostics) against emerging pathogens.
- Provide surge research capacity to support regional and national responses to public health and bioterrorism emergencies
- ~43,500 square feet of support and research space including a BSL-2 room and ~5,100 square feet of BSL-3 laboratory space.
- Designed for research on small to medium-sized animals including mice, rats, ferrets, rabbits, hamsters, and zebrafish.
- Recent NIAID investment of > \$20 million to upgrade the building, implement cutting-edge scientific equipment, and build a scientific research core team to help UAB faculty drive top-tier BSL-3 research programs
- Scan the QR code to link to the SEBLAB website:



Cutting-Edge Scientific Equipment



Figure 1. Equipment- *In vitro* Core A. Echo Revolve Upright/Inverted Fluorescence Microscope. B. Zeiss Lattice Lightsheet Microscope. C. Sartorius Incucyte live cell imaging system. D. Agilent BioSpa8 for Cytation 10 system. E. Agilent MultiFlo FX liquid handler for high throughput screening. F. ThermoFisher MX Micro-ultracentrifuge.



Figure 2. Equipment- *In vivo* Core A. DSI Buxco Nose-Only Inhalation Tower System. B. SciReq FlexiVent Pulmonary Function Testing System. C. MiLabs μCTUHQROIFLT In Vivo Imaging System. D. BIOMTECH β-Eye SPECT Imaging System. E. BIOMTECH γ-Eye PET Imaging System. F. SomnoFlo Isoflurane anesthesia system. G. Somnosuite Isoflurane anesthesia system. H. Qiagen TissueLyser II.

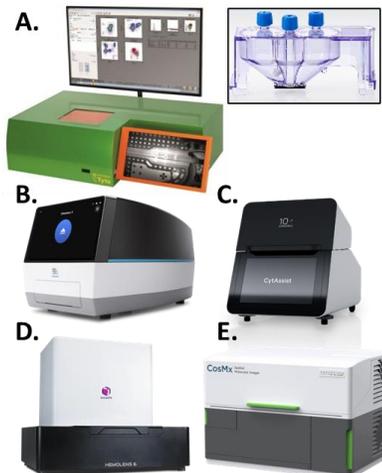


Figure 3. Equipment- Single Cell Core A. Miltenyi MACSQuant Tyto Flow Cytometer and Cell Sorter. B. 10X Genomics Chromium X Single Cell Sequencing System. C. 10X CytAssist. D. Morphle Hemolens. E. CosMx Spatial Imager



Figure 4. Equipment- Pandemic Preparedness Core. A. ProMega Maxwell RSC 48 Nucleic Acid Extraction System. B. Applied Biosystems QuantStudio 7 Dx Pro RT-PCR. C. ABS ProFlex PCR. D. Biotechne Protein Simple Ella Next Generation ELISA system.

SEBLAB Core Research Team- **NOW Recruiting**

| Research Core | Equipment |
|------------------|--|
| All Cores | UC7 Freezerworks lab inventory archive system |
| Cell Cx core | UC7 Liquid Nitrogen dewar |
| Cell Cx core | UC7 Liquid Nitrogen transfer vessel |
| Cell Cx core | UC7 Corning™ CoolCell™ LX Cell Freezing Vial Containers |
| Micro core | UC7 GENESYS 50 UV-Vis Spectrophotometer |
| Micro core | UC7 McFarland nephelometer |
| In vitro | UC7 Thermo Scientific™ Sorvall™ MTX 150 Micro-Ultracentrifuge |
| In vitro | UC7 Sartorius Incucyte 53 live cell imaging system |
| In vitro | UC7 Biotek BioSpa8 live cell imaging system |
| In vitro | UC7 Biotek MultiFlo FX Multimode Dliquid Handler |
| In vitro | UC7 BrandTech™ VACUUBRAND™ BVC Fluid Aspiration System |
| In vitro | UC7 Agilent BioTek Joystick Controller for Cytation 10 |
| In vitro | G20 Zeiss Lattice Lightsheet 7 Microscope |
| In vitro | G20 Agilent (Biotek) Cytation 10 High Throughput Plate Reader |
| In vitro | G20 Echo Revolve Fluorescence Microscope (upright+inverted) |
| In vivo | UC7 SomnoSuite anesthesia system |
| In vivo | UC7 SomnoFlo anesthesia system |
| In vivo | UC7 Qiagen TissueLyser II |
| In vivo | G20 DSI Buxco Nose-Only Inhalation Tower System |
| In vivo | G20 SciReq FlexiVent Pulmonary Function Testing System |
| In vivo | G20 MiLabs UCT ^μ ROIFLT In Vivo Imaging System |
| In vivo | G20 BIOMTECH β-Eye PET Imaging System |
| In vivo | G20 BIOMTECH γ-Eye SPECT Imaging System |
| Single Cell core | G20 Miltenyi MACSQuant Tyto Cell Sorter |
| Single Cell core | G20 10X Genomics Chromium X Instrument |
| Single Cell core | G20 10X Visium CytAssist |
| Single Cell core | G20 HemoLens Digital Slide Scanner |
| Single Cell core | G20 NanoString COSmx Spatial Transcriptomics Instrument |
| Pandemic core | UC7 Genious DNA Analysis Software |
| Pandemic core | G20 ProMega Maxwell RSC 48 Nucleic Acid Extraction System |
| Pandemic core | G20 Applied Biosystems ProFlex PCR system |
| Pandemic core | G20 Applied Biosystems QuantStudio 7 Dx Pro RT-PCR system |
| Pandemic core | G20 Biotechne Protein Simple Ella Next Generation ELISA system |

Selected SARS-CoV-2 Publications since 2022:

- Campos-Gómez, J., Fernandez Petty, C., Mazur, M., Tang, L., Solomon, G.M., Joseph, R., Li, Q., Peabody Lever, J.E., Hussain, S.S., Harrod, K.S. and Onuoha, E.E., 2023. Mucociliary clearance augmenting drugs block SARS-CoV-2 replication in human airway epithelial cells. *American Journal of Physiology-Lung Cellular and Molecular Physiology*, 324(4), pp.L493-L506.
- Schultz, M.D., Suschak, J.J., Botta, D., Silva-Sanchez, A., King, R.G., Detchemendy, T.W., Meshram, C.D., Foote, J.B., Zhou, F., Tipper, J.L. and Zhang, J., 2022. A single intranasal administration of AdCOVID protects against SARS-CoV-2 infection in the upper and lower respiratory tracts. *Human Vaccines & Immunotherapeutics*, 18(6), p.2127292.
- Riegler, A.N., Benson, P., Long, K. and Leal Jr, S.M., 2023. Differential activation of programmed cell death in patients with severe SARS-CoV-2 infection. *Cell Death Discovery*, 9(1), p.420.
- Patton, M.J., Gagger, A., Might, M., Erdmann, N., Orihuela, C.J. and Harrod, K.S., 2024. Community-acquired bacterial coinfections and COVID-19. *Physiological Reviews*, 104(1), pp.1-21.

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Selected Tuberculosis Publications since 2022:

- Pacl, H.T., Chinta, K.C., Reddy, V.P., Nadeem, S., Sevalkar, R.R., Nargan, K., Lumamba, K., Naidoo, T., Glasgow, J.N., Agarwal, A. and Steyn, A.J., 2023. NAD (H) homeostasis underlies host protection mediated by glycolytic myeloid cells in tuberculosis. *Nature Communications*, 14(1), p.5472.
- Sevalkar, R.R., Glasgow, J.N., Pettinati, M., Marti, M.A., Reddy, V.P., Basu, S., Alipour, E., Kim-Shapiro, D.B., Estrin, D.A., Lancaster Jr, J.R. and Steyn, A.J., 2022. Mycobacterium tuberculosis DosS binds H2S through its Fe3+ heme iron to regulate the DosR dormancy regulon. *Redox Biology*, 52, p.102316.
- Zhang, L., Kent, J.E., Whitaker, M., Young, D.C., Herrmann, D., Aleshin, A.E., Ko, Y.H., Cingolani, G., Saad, J.S., Moody, D.B. and Marassi, F.M., 2022. A periplasmic cinched protein is required for siderophore secretion and virulence of Mycobacterium tuberculosis. *Nature Communications*, 13(1), p.2255.

Reach Out to Learn How SEBLAB's World-Class **BSL-2** and **BSL-3** Resources Can Help Your Research Program!

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