

Laboratory/Research Skills Summary

Animal Care:

- Handle and restrain
- Weigh animals
- Breed various species
- Clean cages
- Administer injections
- Prepare special diets
- Anesthetize
- Maintain and evaluate animal records
- Prepare for sterile surgical procedures
- Perform simple surgical procedures (such as adrenalectomy)
- Assist in sterile neurosurgical procedures
- Assist in emergency medical and surgical procedures
- Administer medication
- Implant tumors into small animals
- Perform animal autopsy
- Perform microsurgery
- Catheterize and infuse small animal arteries
- Collect blood or other samples

General Laboratory:

- Pipette
- Weigh
- Sterilize
- Filtrate
- Titrate
- Wash/Clean glassware
- Prepare media
- Practice sterile techniques

Biochemistry/Genetics:

- Purify and characterize enzymes
- Determinations: RNA, protein, nucleic acid, phosphate, and others
- Gradients: density, equilibrium, etc.
- Assays: enzyme, infectivity, blood coagulation factors, and other (biochemical) assays
- Spectrophotometers: UV, infrared, atomic absorption
- Electrophoresis: immuno, acrylamide gel, paper
- Chromatography: paper, thin layer
Column: ion exchange resins, gel, gas liquid, HPLC
- Purify blood coagulation factors
- Immunoprecipitation techniques
- Analyze peptides
- Manipulate DNA
- Extract phenols from DNA
- Equilibrium sedimentation centrifugation
- Prepare antibodies
- Analyze lipids
- Synthesize peptides
- Mutagenesis
- Test for mutations
- Cell fractionation
- Transduction
- Conjugation
- Breed and maintain a population of drosophila, rodents, or other species
- Prepare and identify mutants with mutagenic chemicals

Electron Microscopy:

- Fix
- Embed
- Stain
- Section
- Process film
- Print film
- Produce prints
- Operation of Electron Microscopy
- Prepare grids
- Form film on grids

Histology:

- Routine frozen sections of whole animal brains
- Cell and fiber stains
- Perfusions of animals
- Staining processes
- Embedding processes: paraffin, celloidin
- Autoradiography of tissue sections

Immunology:

- Plaque assay for antibody forming cells
- Hemagglutination and hemolysis assay
- Florescent antibody technique
- Lyophilization
- Spectrofluorometry
- Isolate viruses
- Cytotoxicity assay
- Lymphocyte culture

Bacteriology:

- Maintain and purify: bacteria, phage stocks, cell culture
- Tissue culture
- Culture transfers
- Inoculation
- Prepare media
- Pour plates
- Plasmid amplification
- Prepare and assay bacteriophage lysates

Radio-biological:

- Radioimmunoassays
- Handle radioisotopes
- Irradiate tumors in vivo
- Label radioactives
- Radioisotope counters: autogamma, scintillation, scanning, gas flow

Laboratory/Research Instruments:

- Light microscope
- Autoanalyser
- Microburett
- pH meter
- Centrifuges: standard, high speed
- Incubators
- Dark room equipment
- Precision balance
- Volumetric glassware
- Oscilloscopes
- Blood gas analyzer
- Microtomes: paraffin, celloidin
- X-ray equipment

Other Skills or Relevant Experience:

- Data processing
- Laboratory
- Statistical analysis
- Programming skills
- Database skills
- Computer languages (HTML, C++, etc.)