

A Bright Future

Why Maryland?

Maryland is home to premiere bio/medical schools and facilities alongside nearly all of the nation's most critical federal research agencies. It is a fertile breeding ground for new exciting start-ups as well as an established environment for biotechnology, pharmaceutical and research tools players.

Why Biotechnology?

Biotechnology is one of Maryland's more exciting and faster growing industries. A job in biotechnology can lead to a career in biotechnology. The industry offers multiple career paths from entry level to senior level positions. Career paths may follow an emphasis on science or branch into any of several business functions.

Why Career Mapping?

Career mapping is a "grid map" that lists jobs within an industry and outlines their required qualifications for employment. This visual overview provides information about career opportunities available in Maryland's biotechnology industry and the education and experience needed for career advancement or entry into a particular occupation.

Who Uses Career Maps?

Anyone can benefit from career mapping. Whether you have yet to attain your high school diploma/GED or have a college degree, career maps provide a pathway to rewarding careers in biotechnology. If you are already employed and want to advance or move into another biotechnology occupation, mapping will give you the basics- job duties and education requirements.

How do you Navigate Career Maps?

There are six career tracks- research and development, quality systems, manufacturing and operations, clinical studies, sales and technical support, and non-science positions. There are a series of educational steps as you read from left to right across the map. Generally education, experience and salary increase as you move left to right to higher educational degrees that appear across the top of the page. Within a given degree (column), there may be an increase in the experience and education/training required as you move from the top to the bottom of the page, although this is not true in all cases.



biotechnology

This career map provides navigation into the biotechnology industry and the beginnings of a vibrant and interesting career in one of Maryland's faster growing industries.



Hands-on experience is highly valued in the biotechnology industry. Applicants that have relevant experience and less formal education may compete well with those with higher education levels and little experience.

For those with advanced training or experience in the biotechnology business, an expanded career map with more positions can be found on the online career map hosted by BioBuzz (www.biobuzz.net).

Job titles, position descriptions and requirements may differ from employer to employer. For example, one company's Research Associate position may have different requirements than another company. To create this career map, similar positions were compiled and a "typical" job title, position description and requirements were created.

For careers in health care, visit the Baltimore Alliance for Careers in Healthcare at www.baltimorealliance.org. or call 443.931.3076.

Partners



BioTechnical
Institute of Maryland, Inc.

MABRC

MDLR

STATE OF MARYLAND

DEPARTMENT OF LABOR, LICENSING AND REGULATION

MC

MONTGOMERY

COLLEGE

CAREER

Mapping Your Future in Maryland



Career Opportunities in Biotechnology

Maryland Biotechnology



Career Opportunities

➤ Increasing Levels of Education/Training Required

Education Columns

Career Tracks

■ Research & Development

■ Quality Systems

■ Clinical Studies

■ Manufacturing & Distribution

■ Sales & Technical Support

■ Non-Science Jobs

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Glasswasher

DUTIES: Washes and dries glassware and distributes it to appropriate locations within the laboratories. May involve using industrial equipment including an autoclave. REQUIREMENTS: 0-2 yrs. laboratory experience.

Lab Animal Handler

DUTIES: Provides daily care of animals for experimental purposes. Cleans cages and racks. Maintains detailed records and documents. REQUIREMENTS: Scientific background and 0-2 yrs. relevant laboratory experience. AALAS certification is required; some employers offer AALAS training after hire.

Media Prep Technician

DUTIES: Prepares media and solutions used in labs following established standards and work instructions. Maintains detailed records for batches prepared. REQUIREMENTS: Science degree and 0-2 yrs. related experience.

Quality Documentation Associate

DUTIES: Performs a variety of laboratory tasks and techniques, following protocols, making observations and recording data. Maintains an experimental notebook and may provide summaries regarding experiments. REQUIREMENTS: 0-3 yrs. experience.

Quality Control Technician

DUTIES: Performs computer programs to solve scientific or engineering problems and support of research and development efforts. Analyzes existing systems and formulates logic for new systems. A scientific programmer analyst also devises logical procedures, performs flow charts, performs coding, tests, and debugs programs. REQUIREMENTS: 0-2 yrs. experience. MS degree is preferred in a related discipline.

Quality Control Analyst

DUTIES: Conducts routine and non-routine analysis of raw materials, compiles data for documentation of test procedures and reports compliance (or abnormalities) with specifications. Drafts and updates standard operating procedures and may perform special projects on problem solving. REQUIREMENTS: 0-2 yrs. experience in quality control systems.

Quality Documentation Specialist

DUTIES: Provides required documentation through a documentation system. Ensures accuracy and maintains and updates the document control and tracking databases. Coordinates the review and revision of procedures. REQUIREMENTS: Degree in a scientific discipline and 2 yrs. experience in quality control systems.

Quality Control Engineer

DUTIES: Develops, applies, revises, and maintains quality standards for processing materials into partially finished or finished products. Designs and implements methods and procedures for inspecting, testing, and evaluating the precision and accuracy of products and prepares documentation for inspection testing, manufacturing, or quality control systems. REQUIREMENTS: Scientific discipline and 2 yrs. clinical experience in quality control systems.

Quality Assurance Auditor

DUTIES: Responsible for performing audits of production and quality control. Ensures compliance to in-house specifications, standards, and good manufacturing practices. Drafts and updates standard operating procedures and may perform special projects on problem solving. REQUIREMENTS: Scientific discipline and 2 yrs. clinical experience in quality control systems.

Validation Engineer

DUTIES: Responsible for calibrating and validating equipment and systems and for assisting in the selection, specification, and negotiation of competitive pricing of equipment. Maintains all of the documentation pertaining to qualification and validation and serves as an information resource for validation technicians, contractors, and vendors. REQUIREMENTS: 0-2 yrs. related experience.

Clinical Data Specialist

DUTIES: Coordinates with various departments on the design, documentation, testing and implementation of clinical data studies. Develops systems for organizing data to analyze, identify, and report trends. Also analyzes the relationships of data and defines logical aspects of data sets. REQUIREMENTS: 2 yrs. related experience.

Clinical Research Associate

DUTIES: Responsible for writing and editing standard operating procedures, clinical study protocols, laboratory procedure manuals, work instructions and other related documents. Edits and/or rewrites various sources of information into a uniform style and language for regulatory compliance, and assists in developing documentation for instructional purposes, descriptions, reference and/or informational purposes. REQUIREMENTS: 2 yrs. experience in writing technical documentation.

Clinical Coordinator

DUTIES: Coordinates the clinical development plan as outlined by the company or clinical department, including defining objectives, strategy and studies. Provides support for planning, including detailed effort estimates, scheduling, and critical path analysis. Monitors clinical activities to identify issues, variances, and conflicts, and assists in developing documentation for instructional purposes, descriptions, reference and/or informational purposes. REQUIREMENTS: 2 yrs. related experience.

Technical Writer

DUTIES: Responsible for writing and editing standard operating procedures, clinical study protocols, laboratory procedure manuals, work instructions and other related documents. May travel to field sites to supervise and coordinate manufacture. REQUIREMENTS: 2 yrs. experience in writing technical documentation.

Instrument/Calibration Technician

DUTIES: Performs maintenance, testing, troubleshooting and repair of analytical equipment and instrumentation to comply with regulatory requirements. Maintains logs and required documentation. REQUIREMENTS: Electronics technology degree with 2 yrs. related experience.

Shipping & Receiving Technician

DUTIES: Records all materials shipped and received by a company. Maintains inventory levels and identifies losses. Pulls, packs and stages orders for delivery, ensuring order details and product integrity. Verifies incoming materials, maintains inventory levels and identifies losses.

Packaging Operator

DUTIES: Uses packaging systems to label, inspect, and package final products to comply with regulatory requirements. Enters data, prints computer-generated labels and maintains records. Performs initial checks of completed documents for completeness and accuracy. REQUIREMENTS: 0-2 yrs. experience in a manufacturing environment.

Environmental Technician

DUTIES: Water/air sampling and monitoring, processing permits, calibration and maintenance of scientific monitoring, data collection, and routine analysis. Records and maintains periodic data logs and information files. REQUIREMENTS: Some specialized training.

Manufacturing Technician

DUTIES: Manufactures and packages products. Operates small production equipment to weigh, measure and check raw materials. Ensures manufactured batches contain the proper ingredients and quantities. Maintains records and production requirements. REQUIREMENTS: 0-2 yrs. experience in a scientific area. Scientific discipline degree desired.

Receptionist

DUTIES: Operates telephone system, greets visitors and supports clerical activities.

Administrative Assistant

DUTIES: Responsible for a wide variety of general administrative duties including correspondence, maintaining calendars, coordinating video conferencing and teleconferencing, making travel arrangements and managing itineraries. REQUIREMENTS: 0-2 yrs. experience in varied administrative and support experience.

Bookkeeper

DUTIES: Executes tasks related to accounts payable, payroll, and accounts receivable.

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Lab Animal Technician

DUTIES: Conducts research on projects independently and in collaboration with others, making detailed observations, analyzing data and interpreting results. Maintains an experimental notebook and prepares reports for analyzing and manipulating genomic databases. REQUIREMENTS: 2+ yrs. experience in a related discipline, typically specialize at the graduate level.

Research Associate

DUTIES: Conducts research on projects independently and in collaboration with others, making detailed observations, analyzing data and interpreting results. Maintains an experimental notebook and prepares reports and protocols. REQUIRES: 2+ yrs. of plant breeding experience.

Plant Breeder

DUTIES: Designs and executes plant breeding regimes in collaboration with larger research projects. Maintains an experimental notebook and prepares reports and protocols. REQUIREMENTS: 0-2 yrs. of plant breeding experience.

Scientific Programmer

DUTIES: Designs, develops, and modifies computer programs to solve scientific or engineering problems and support of research and development efforts. Analyzes existing systems and formulates logic for new systems. A scientific programmer analyst also devises logical procedures, prepares flow charts, performs coding, tests, and debugs programs. REQUIREMENTS: 0-2 yrs. experience. MS degree is preferred in a related discipline.

Bioinformatics Analyst/

DUTIES: Designs and develops software, databases, and interfaces for analyzing and manipulating genomic databases. REQUIREMENTS: 2+ yrs. experience in a related discipline, typically specialize at the graduate level.

Research Analyst

DUTIES: Conducts research on projects independently and in collaboration with others, making detailed observations, analyzing data and interpreting results. Maintains an experimental notebook and prepares reports and protocols. REQUIRES: 2+ yrs. of plant breeding experience.

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