R&D

Research and development (R&D) encompasses the activities companies undertake to innovate and introduce new products and services. Often it is the first phase of the developmental process. The goal is typically to take new products and services to market and add to the company's bottom line. R&D allows a company to grow through the resulting improvements and the development of new products and services, which enables them to successfully compete with and/or stay ahead of other companies. Companies across all sectors and industries undergo R&D activities.

Typical starter jobs in R&D:

- **Research associate**
  As a research associate you support the execution of scientific programs and experimental analysis. You plan and perform daily laboratory activities, perform analyses and process and validate data.
- **Associate scientist**
  As associate scientist you support the design and execution of scientific programs. You process and interpret data, you write plans and reports as well as texts for regulatory documentation, you participate and present data in meetings with different project teams.
- **Laboratory technician**
  As academic laboratory technician you plan and perform daily laboratory activities, perform analyses, process data, present and discuss results, validate data, take part in writing/preparation of protocols and final reports and prepare audits.
- **Junior project manager**
  As junior project manager you assign tasks to your team members (research associates, associate scientists, laboratory technicians), you monitor the project budget and you report on project progress, finances and expectations. It is the responsibility of the junior project manager to look forward and to anticipate problems and shortcomings before they occur.

Clinical Development

The process of bringing a new drug or medical device to the market is a multi-phase process. It encompasses drug discovery/product development, preclinical research (microorganisms/animals) and clinical trials (on humans). Clinical trials are scientific studies performed in humans to evaluate a new drug or medical device. They are aimed at finding out whether a new treatment, like a new drug or medical device is safe and effective in humans. Often a clinical trial is used to learn if a new treatment is more effective and/or has less harmful side effects than the standard treatment. Apart from new drugs or medical devices, clinical trials are also used to improve the ways to prevent, screen for, diagnose or treat diseases. These clinical trials may also show which medical approaches work best for certain illnesses or groups of people. Clinical trials follow strict, scientific standards which protect patients and help produce reliable clinical trial results. Clinical trials are one of the final stages of a long and careful research and development process.

Typical starter jobs in clinical development:

- **Clinical research associate**
  As a clinical research associate (CRA) you assist in the design, preparation, planning, implementation and review of a clinical trial to ensure it adheres to regulatory and ethical standards. You ensure that the reported clinical trial data are accurate, verifiable from source documents and complete and that the clinical study is conducted in accordance with protocol and Good Clinical Practice (GCP). You perform clinical site (hospital) monitoring and manage/collect clinical research documents, including clinical study protocol, ICFs (Patient Informed Consent Form), CRFs (Clinical case Report Forms), investigator brochure and clinical trial related documents.
- **Clinical trial assistant**
  As clinical trial assistant (CTA) you are responsible for the support of the early phases of the clinical trial setup. You will follow up the financial administration as well as the operational aspects of the logistics. You ensure the administrative support of the study team in preparing, rolling out and following up the clinical trials. You are responsible for the control of financial

documents, for keeping up to date the eTMF (Trial Master File), for the input and follow-up of payments, for the shipping of study drugs to the clinical trial centres, for the tracking of the patient samples sent by CTC (Clinical Trial Centre) to the lab, etc.

GMP & QA

Good manufacturing practice (GMP) is a system for ensuring that pharmaceutical products are consistently produced and controlled according to quality standards. It is designed to minimize the risks involved in any pharmaceutical production that cannot be eliminated through testing the final product. GMP regulations require a quality assurance (QA) approach to manufacturing, enabling companies to minimize or eliminate instances of contamination, mix-ups, and errors. This protects the consumer from purchasing a product which is not effective or even dangerous. GMP covers all aspects of production from the starting materials, premises, and equipment to the training and personal hygiene of staff. GMP regulations address issues including record keeping, personnel qualifications, sanitation, cleanliness, equipment verification, process validation, and complaint handling. Detailed written procedures are essential for each process that could affect the quality of the finished product. There must be systems to provide documented proof that correct procedures are consistently followed at each step in the manufacturing process - every time a product is made.

Typical starter jobs in GMP & QA:

- **QA documentation officer/coordinator/specialist**
  As QA documentation officer/coordinator/specialist you are responsible for the management of forms, reports, files and documents related to the defined standard procedures of the production process of a biopharmaceutical company. These standard operation procedures (SOPs) enable a consistent production and quality of a product and provide an overview of the duties and activities performed at any given time.
- **Process technician**
  As a process technician you work in a process or continuous production environment (mainly cleanrooms). You operate devices, you oversee the machines and document results in compliance with protocols and standard operation procedures (SOPs). You are involved in all phases of the production process in order to guarantee an efficient and continuous production. You need to know the production process in all its details. You are responsible for detecting anomalies in the process, for taking measures to correct and/or signal the anomalies to a senior colleague.
- **QC technician**
  As a QC technician you are responsible for maintaining quality assurance processes, for testing products and for registering and analysing results during product development and production. You deal with the control of the quality of raw materials, the (biological) production process and the eventual end product. You also see to reporting and you contribute to the well-functioning of the laboratory and/or the cleanroom.

Regulatory Affairs

Regulatory affairs comprises the regulatory activities to ensure that products – such as drugs, medical devices, nutrients cosmetics, pesticides and agrochemicals – are safe and effective in order to protect public health. It spans different stages of product development including research and development, licensing and post-market surveillance. Regulatory affairs is at the interface between companies and regulatory authorities, ensuring that products are developed, manufactured and distributed in compliance with appropriate legislation.

Typical starter jobs in regulatory affairs:

- **Regulatory affairs officer**
  As regulatory affairs officer you assist the regulatory affairs manager with new product registration dossiers and life cycle activities for registered products at national or EU level. You help with the scientific and administrative preparation of high-quality registration dossiers in e-CTD format (such as new products, variations, 5-year renewals) and provide procedural support. You verify product information artwork and translations. You keep up-to-date with

current European and Belgian legislation for drugs, medical devices, nutrients, cosmetics, pesticides or agrochemicals.

- **Regulatory affairs assistant**
  As a regulatory affairs assistant you assist the regulatory affairs officer in all his/her responsibilities. You help in the support of new product registrations and the life cycle for registered products. You verify product information, artwork and translations. You gain insights in Belgian and European legislation related to drugs, medical devices, nutrients, cosmetics, pesticides or agrochemicals.

Business Development

Business development comprises initiatives and activities aimed towards making a business better. Making a business better is about increasing profit, growth in terms of business expansion, building strategic partnerships and making strategic business decisions. Business development activities extend across different departments of a company such as sales, marketing, project management and product management. All of these different departments and activities are driven by and aligned to the business development goals.

Many job vacancies for business development deal with sales of good, kits and services. End users are scientists in the lab of the customer for instance. Other job vacancies deal with long term perspectives where whole technology platforms are presented to interested companies (e.g. to pharma industry). This kind of business development requires a more in depth knowledge of the technology (from scientific point of view), competition analysis, knowledge of negotiation, drafting agreements and intellectual property. The end user is in fact a whole company or division of companies, dedicated teams that use the technology to obtain the goals in their project.

Typical starter jobs in business development:

- **Business development manager**
  As business development manager you act as the preferential mediator between the company you represent and the client. You are responsible for the clients of your company and you will inform and advise them on the products, services or technology of the company. As business development manager you approach (new) clients to recommend them the most efficient use of the products or technology, or to adjust the provided services to the needs of the client. A business development manager manages multiple costumers. You gather intelligence of competition. You attend business development fairs to explain the technology to others.
- **Junior product manager**
  As junior product manager you are responsible for the complete life cycle of a product or product group. You oversee the quality of the product or product group. You research and develop new products in addition to managing existing ones through market research and strategic planning. As product managers you perform marketing and planning activities to increase profits. You make a landscape map of the competition.
- **Junior management consultant**
  As junior management consultant you work together closely with the clients of your company. You make recommendations on how to increase their efficiency and provide them with advise on other business related problems. As junior management consultant you gather and analyse information and data. You come up with recommendations designed to streamline activities and enhance the profit.

Bioinformatics

In modern biology, large and complex data sets are being generated at an incredible pace. The types of data include DNA sequences, protein structures, mass spectrometry and large-scale networks. Bioinformatics combines biology, computer science, mathematics and statistics to analyse and interpret this big data. It is a young scientific field, set up to open up and use the increasing amount of data. Using the analysis of biological data, the functions of genes can be predicted and relationships between genes and proteins can be demonstrated.

Due to the data avalanche in biology, ecology, biotechnology, genetics, pharmacy and medicine, bioinformatics experts are in high demand.

Typical starter jobs in business development:

- **Junior Bioinformatician**
  As a bioinformatician you analyse biological processes using computer programmes. You maintain or construct databases containing biological information. You gather and analyse biological data and may also assist scientists in various fields, including in biotechnology and pharmaceutics. As bioinformatician you perform scientific research and statistical analyses, and report on their findings. Bioinformatics scientists may also collect DNA samples, discover data patterns and conduct genetic research.
- **Data Scientist**
  As data scientist you find and interpret rich data sources, manage large amounts of data, merge data sources, ensure consistency of data-sets, and create visualisations to aid in understanding data. You build mathematical models using data, present and communicate data insights and findings to specialists and scientists in their team and if required, to a non-expert audience, and recommend ways to apply the data.
  Computational biologist