

### Development Scientist

#### WHO ARE THEY? <sup>1,2</sup>

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Biotechnology companies and development scientists are engaging in groundbreaking science to discover and develop medications for people with life-threatening illnesses such as cancer or multiple sclerosis. The biotechnology industry is at the forefront of medical discoveries, and development scientists are leading the charge. Development scientists must understand the biology of disease, which then allows them to work toward the development of diagnostic tests and treatment. While some forms of medicine are appropriate for use in a broad population, other medication—called targeted medicine—is medicine that is made for specific patients who have a particular form of disease. Development scientists use biomarkers, or biological measurements of cells, to create this type of targeted medicine. Rather than treating cancer based on where it originated, development scientists use these biomarkers to study the genetic abnormalities of cancer cells in order to create medicines that target them. Treatment may include large molecule drugs which include using antibodies and other biologics to treat the disease, or small molecule drugs designed to act inside the body's cells.

#### WHAT DO THEY DO? <sup>1,2</sup>

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Development scientists work to discover and develop safe, targeted, and effective medications specific to each patient. They work in various stages of medication development as they strive to understand the safety of medications and figure out the “right dose for the right patient.” Development scientists may work on safety assessment teams, within clinical pharmacology, in bioanalytical sciences, or on diagnostic discovery teams. They may be involved in everything from evaluating risks during the research phase, conducting simulations to understand a medication's effects, to studying chemical components and how they react with the human body, ensuring that medicines reach their targets, and more. In short, they help to discover, develop, and test

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#### SALARY RANGE <sup>3</sup>

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**Average** annual salary:  
\$90,643/year

#### EDUCATION / TRAINING

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**Undergraduate** degree in chemistry, biology, biochemistry, chemical engineering, or pharmacology

**Master** of science degree sometimes preferred

medicine—and then have it approved for use. If you enjoy the prospect of translating scientific hypotheses into therapeutic possibilities through problem solving, collaboration, research, and data analytics, then a career in development sciences may be for you!

## JOB OUTLOOK <sup>3</sup>

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The job outlook for development scientists is projected to grow at the average rate of 8% (2018–2028).

## HOW DO I BECOME ONE? <sup>4</sup>

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A career in development sciences requires an understanding of chemistry and biology as well as the principles of engineering. In addition to formal education in these areas, you should also look for degree programs that offer experiential learning outside of the classroom. This may include internships or job shadowing in related fields to gain practical, hands-on experience. Employers will be looking for candidates with at least a bachelor's degree, and many may be looking for a master's degree or specialized training and certifications. You should also develop your project management skills, problem-solving abilities, and collaborative communication skills through coursework and extra-curricular activities. Your ability to work across teams and communicate with both engineers and biologists will be a major key to your success.

1 “Right Dose, Right Patient.” Genentech.

<https://www.gene.com/stories/right-dose-right-patient?topic=development-sciences>

2 “Charting the Path Forward.” Genentech.

<https://making.gene.com/23/charting-the-path-forward/>

3 “How to Become a Process Development Scientist.” Zippa.

<https://www.zippia.com/process-development-scientist-jobs/>

4 “How to Become a Process Development Scientist.” Northeastern University.

<https://www.northeastern.edu/graduate/blog/process-development-scientist-careers/>