# Biochemists and Biophysicists

SOC: 19-1021 • Career Profile Report

## ■ Key Facts

| $103,650 | 35,600 | +6.0% |
|---|---|---|
| Median Salary | Employment | Growth Rate |

## ■ Requirements & Salary Range

**Education:** Doctoral

## ■ Automation Risk Assessment

**Low Risk** - 8.0% probability of being automated in the next 10-20 years.

This job is relatively safe from automation due to its creative, social, or complex problem-solving requirements.

## ■■ Work-Life Balance

**6.7/10** - Good work-life balance

## ■ Personality Fit (RIASEC)

Higher scores indicate better personality fit for this career type.

| | | | |
|---|---|---|---|
| **Realistic** | 6.2/10 | **Investigative** | 9.4/10 |
| **Artistic** | 5.6/10 | **Social** | 6.4/10 |
| **Enterprising** | 4.8/10 | **Conventional** | 6.4/10 |

## ■ Top Skills Required

Analytical skills, Communication skills, Critical-thinking skills, Interpersonal skills, Math skills, Perseverance, Problem-solving skills, Time-management skills

### ✓ Strengths

- High Demand
- Flexible Work
- Continuous Learning

### ■ Challenges

- Burnout Risk
- Rapid Technological Change

## ■ What They Do

Biochemists and Biophysicists study **the chemical and physical principles of living organisms**. They conduct research, analyze biological processes, and develop applications in medicine, agriculture, and biotechnology. Their work is critical in advancing scientific understanding, developing new treatments, and improving health and technology.

This career is well suited for individuals who enjoy scientific research, problem-solving, and exploring molecular and cellular mechanisms.

## What Do Biochemists and Biophysicists Do?

These professionals conduct experiments, analyze data, and develop models to understand biological systems at the molecular or cellular level.

Common responsibilities include:

- Designing and conducting laboratory experiments
- Analyzing proteins, DNA, RNA, and other biological molecules
- Developing models to explain biological processes
- Researching drug interactions, genetic functions, or metabolic pathways
- Documenting findings and preparing scientific reports or publications
- Collaborating with researchers, clinicians, and industry teams
- Staying current with scientific literature and emerging technologies

## Key Areas of Biochemistry and Biophysics

Biochemists and biophysicists may focus on specific research areas, techniques, or applications:

- Molecular and Cellular Biology: Studying proteins, enzymes, and genetic material
- Structural Biology and Biophysics: Investigating physical properties of biomolecules
- Pharmaceutical and Drug Development: Researching molecular targets and treatments
- Genomics and Proteomics: Analyzing genes, proteins, and metabolic pathways
- Laboratory Research and Data Analysis: Designing experiments and interpreting results

## Skills and Abilities Needed

These professionals combine analytical, technical, and research skills.

### *Core Professional Skills*

### *Personal Qualities That Matter*

## Education and Career Pathway

This role typically requires advanced education and research experience:

- Bachelor’s Degree (minimum): Biochemistry, biophysics, biology, or related field
- Master’s or Doctoral Degree (common for research roles): Specialization in biochemistry, biophysics, or molecular biology
- Laboratory or Research Experience: Internships, co-op programs, or research projects
- Postdoctoral Fellowships (optional): Advanced research and specialization opportunities
- Continuing Education: Staying current on scientific literature, techniques, and technologies

## Where Do Biochemists and Biophysicists Work?

They are employed in organizations conducting research, healthcare, or technology development:

- Universities and Research Institutions

- Pharmaceutical and Biotechnology Companies
- Government Research Agencies
- Hospitals and Clinical Laboratories
- Private Research and Development Firms

Work environments include laboratories, research facilities, offices, and clinical settings.

## Is This Career Difficult?

This career requires advanced scientific knowledge, analytical skills, and persistence. Biochemists and biophysicists must design precise experiments, interpret complex data, and contribute to innovative research.

## Who Should Consider This Career?

This career may be a strong fit if you:

- Enjoy scientific research, experimentation, and analysis
- Are detail-oriented and analytical
- Can work independently and collaboratively
- Have strong communication and technical skills
- Want a career advancing knowledge in biological and physical sciences

## How to Prepare Early

- Take courses in biology, chemistry, physics, and mathematics
- Participate in research projects, internships, or science competitions
- Develop skills in laboratory techniques, data analysis, and scientific writing
- Explore undergraduate and graduate programs in biochemistry or biophysics
- Gain hands-on experience with laboratory instruments, experiments, and research methodologies

**Biochemists and biophysicists study the chemical and physical principles of living organisms, advancing scientific knowledge, medical treatments, and technological innovation**.