

# **U.S. Biosimulation Market Size, Share & Trends Analysis Report By Offering (Software, Services), By Application, By Therapeutic Area, By Deployment Model, By Pricing Model, By End-use, And Segment Forecasts, 2025 - 2030**

<https://marketpublishers.com/r/U3C6A2BFDD8DEN.html>

Date: July 2025

Pages: 100

Price: US\$ 3,950.00 (Single User License)

ID: U3C6A2BFDD8DEN

## **Abstracts**

This report can be delivered to the clients within 3 Business Days

### **U.S. Biosimulation Market Size & Trends**

The U.S. biosimulation market size was estimated at USD 1.78 billion in 2024 and is projected to grow at a CAGR of 16.2% from 2025 to 2030. This growth is primarily driven by the increasing adoption of in silico modeling and simulation tools to reduce drug development costs and timelines. With the average cost of bringing a new drug to market continuing to rise, pharmaceutical and biotech companies are leveraging biosimulation to optimize clinical trial designs, predict drug interactions, and identify potential safety concerns early in the R&D process. The growing emphasis on precision medicine and the need for patient-specific dosing strategies further boost the demand for pharmacometrics and physiologically based pharmacokinetic (PBPK) modeling.

As the healthcare industry moves toward more tailored treatment strategies, a growing demand exists for tools that accurately model patient-specific therapy responses. Biosimulation enables researchers to develop detailed models accounting for genetic variations among individuals, helping predict how different patients respond to particular drugs or treatment plans. This approach improves treatment effectiveness while reducing adverse effects by customizing therapies to each patient's unique profile. The expanding field of pharmacogenomics highlights the critical need for advanced biosimulation tools capable of incorporating genetic data into predictive models within

the U.S. healthcare landscape.

Advancements in AI and ML are significantly enhancing the capabilities of biosimulation tools. These technologies allow for more accurate and efficient simulations of biological processes, enabling researchers to predict drug interactions and outcomes precisely. Integrating AI and ML into biosimulation platforms facilitates the development of personalized medicine approaches, where treatments are tailored to individual patient profiles. This technological synergy is driving the adoption of biosimulation in drug development processes across the U.S.

Moreover, favorable regulatory support from the U.S. FDA, which increasingly accepts biosimulation data as part of regulatory submissions, enhances market growth. The rise of biologics and complex therapies, such as gene and cell therapies, has also contributed to the market expansion, as these treatments often require advanced modeling approaches to evaluate efficacy and safety. Moreover, the integration of artificial intelligence and machine learning into biosimulation platforms is enhancing model accuracy and scalability, making these tools more accessible and valuable across the drug development lifecycle.

The COVID-19 pandemic impacted the U.S. market, accelerating the demand for biosimulation software and services to support vaccine candidates' rapid development and testing. For instance, in August 2020, Certara, a player in the U.S. biosimulation sector, partnered with several pharmaceutical companies to develop a new biosimulation tool to streamline vaccine candidate development across diverse patient populations using virtual patients and clinical trials. This innovation aimed to provide critical insights before initiating real-world studies, enhancing the efficiency and effectiveness of vaccine development. This new capability was integrated into Certara's Quantitative Systems Pharmacology (QSP) platform, highlighting the growing importance of biosimulation in pandemic response efforts within the U.S. healthcare system.

## U.S. Biosimulation Market Report Segmentation

This report forecasts revenue growth at the country level and provides an analysis of the latest industry trends in each of the sub-segments from 2018 to 2030. For this study, Grand View Research has segmented the U.S. biosimulation market report based on offering, application, therapeutic area, deployment model, pricing model, and end-use.

### Offering Outlook (Revenue, USD Million, 2018 - 2030)

## Software

Molecular Modeling & Simulation Software

Clinical Trial Design Software

PK/PD Modeling and Simulation Software

Pbpb Modeling and Simulation Software

Toxicity Prediction Software

Other Software

## Services

Contract Services

Consulting

Other (Implementation, Training, & Support)

Application Outlook (Revenue, USD Million, 2018 - 2030)

Drug Discovery & Development

Disease Modeling

Other (Precision Medicine, Toxicology)

Therapeutic Area Outlook (Revenue, USD Million, 2018 - 2030)

Oncology

Cardiovascular Disease

Infectious Disease

Neurological Disorders

Others

Deployment Model Outlook (Revenue, USD Million, 2018 - 2030)

Cloud-based

On-premise

Hybrid Model

Pricing Model Outlook (Revenue, USD Million, 2018 - 2030)

License-based Model

Subscription-based Model

Service-based Model

Pay Per Use Model

End-use Outlook (Revenue, USD Million, 2018 - 2030)

Life Sciences Companies

Academic Research Institutions

Others (CROs/CDMOs, Regulatory Authorities)

## Contents

### CHAPTER 1. METHODOLOGY AND SCOPE

- 1.1. Market Segmentation & Scope
  - 1.1.1. Segment Definitions
- 1.2. Estimates and Forecast Timeline
- 1.3. Research Methodology
- 1.4. Information Procurement
  - 1.4.1. Purchased Database
  - 1.4.2. GVR's Internal Database
  - 1.4.3. Secondary Sources
  - 1.4.4. Primary Research
  - 1.4.5. Details of Primary Research
  - 1.4.6. Research Assumption
- 1.5. Information or Data Analysis
  - 1.5.1. Data Analysis Models
- 1.6. Market Formulation & Data Visualization
- 1.7. Model Details
  - 1.7.1. Commodity Flow Analysis
- 1.8. Objectives
  - 1.8.1. Objective - 1
  - 1.8.2. Objective - 2
  - 1.8.3. Objective - 3
- 1.9. List of Secondary Sources
- 1.10. List of Secondary Sources

### CHAPTER 2. EXECUTIVE SUMMARY

- 2.1. U.S. Biosimulation Market
  - 2.1.1. Market Snapshot
  - 2.1.2. Segment Snapshot
    - 2.1.2.1. Offering segment outlook
    - 2.1.2.2. Application segment outlook
    - 2.1.2.3. Therapeutic Area segment outlook
    - 2.1.2.4. Deployment Model segment outlook
    - 2.1.2.5. Pricing Model segment outlook
    - 2.1.2.6. End Use segment outlook
  - 2.1.3. Competitive Landscape Snapshot

## **CHAPTER 3. MARKET VARIABLES, TRENDS, & SCOPE**

- 3.1. Market Lineage Outlook
  - 3.1.1. Parent Market Outlook
  - 3.1.2. Related/Ancillary Market Outlook
- 3.2. Market Trends and Outlook
- 3.3. Market Dynamics
  - 3.3.1. Market Driver Analysis
    - 3.3.1.1. Rising prevalence of chronic diseases
    - 3.3.1.2. Growing demand for personalized medicine
    - 3.3.1.3. Technological advancements
  - 3.3.2. Market Restraint Analysis
    - 3.3.2.1. High cost associated with biosimulation technology and software
    - 3.3.2.2. Stringent regulatory requirements
  - 3.3.3. Market Opportunity Analysis
  - 3.3.4. Market Challenges Analysis
- 3.4. U.S. Biosimulation Market Analysis Tools: PESTEL
  - 3.4.1. Political & Legal
  - 3.4.2. Economic & Social
  - 3.4.3. Technology
  - 3.4.4. Environmental
  - 3.4.5. Social
- 3.5. Technology Trends
- 3.6. Case Studies & Insights
- 3.7. U.S. Biosimulation Market Analysis Tools: Porter's
- 3.8. Covid-19 Impact Analysis

## **CHAPTER 4. U.S. BIOSIMULATION MARKET: OFFERING ESTIMATES & TREND ANALYSIS**

- 4.1. U.S. Biosimulation Market: Offering Movement Analysis
- 4.2. U.S. Biosimulation Market: Offering Segment Dashboard
- 4.3. Offering Movement & Market Share Analysis, 2024 & 2030
- 4.4. U.S. Biosimulation Market Estimates & Forecast, by Offering
- 4.5. Software
  - 4.5.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)
  - 4.5.2. Molecular Modeling & Simulation Software
    - 4.5.2.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)

- 4.5.3. Clinical Trial Design Software
  - 4.5.3.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)
- 4.5.4. PK/PD Modeling and Simulation Software
  - 4.5.4.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)
- 4.5.5. Pbpk Modeling and Simulation Software
  - 4.5.5.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)
- 4.5.6. Toxicity Prediction Software
  - 4.5.6.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)
- 4.5.7. Other Software
  - 4.5.7.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)
- 4.6. Services
  - 4.6.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)
  - 4.6.2. Contract Services
    - 4.6.2.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)
  - 4.6.3. Consulting
    - 4.6.3.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)
  - 4.6.4. Other (Implementation, Training, & Support)
    - 4.6.4.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)

## **CHAPTER 5. U.S. BIOSIMULATION MARKET: APPLICATION ESTIMATES & TREND ANALYSIS**

- 5.1. U.S. Biosimulation Market: Application Movement Analysis
- 5.2. U.S. Biosimulation Market: Application Segment Dashboard
- 5.3. Application Movement & Market Share Analysis, 2024 & 2030
- 5.4. U.S. Biosimulation Market Estimates & Forecast, by Application
- 5.5. Drug Discovery & Development
  - 5.5.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)
- 5.6. Disease Modeling
  - 5.6.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)
- 5.7. Other (Precision Medicine, Toxicology)
  - 5.7.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)

## **CHAPTER 6. U.S. BIOSIMULATION MARKET: THERAPEUTIC AREA ESTIMATES & TREND ANALYSIS**

- 6.1. U.S. Biosimulation Market: Therapeutic Area Movement Analysis
- 6.2. U.S. Biosimulation Market: Therapeutic Area Segment Dashboard
- 6.3. Therapeutic Area Movement & Market Share Analysis, 2024 & 2030

6.4. U.S. Biosimulation Market Estimates & Forecast, by Therapeutic Area

6.5. Oncology

6.5.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)

6.6. Cardiovascular Disease

6.6.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)

6.7. Infectious Disease

6.7.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)

6.8. Neurological Disorders

6.8.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)

6.9. Others

6.9.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)

## **CHAPTER 7. U.S. BIOSIMULATION MARKET: DEPLOYMENT MODEL ESTIMATES & TREND ANALYSIS**

7.1. U.S. Biosimulation Market: Deployment Model Movement Analysis

7.2. U.S. Biosimulation Market: Deployment Model Segment Dashboard

7.3. Deployment Model Movement & Market Share Analysis, 2024 & 2030

7.4. U.S. Biosimulation Market Estimates & Forecast, by Deployment Model

7.5. Cloud-based

7.5.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)

7.6. On-premise

7.6.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)

7.7. Hybrid Model

7.7.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)

## **CHAPTER 8. U.S. BIOSIMULATION MARKET: PRICING MODEL ESTIMATES & TREND ANALYSIS**

8.1. U.S. Biosimulation Market: Pricing Model Movement Analysis

8.2. U.S. Biosimulation Market: Pricing Model Segment Dashboard

8.3. Pricing Model Movement & Market Share Analysis, 2024 & 2030

8.4. U.S. Biosimulation Market Estimates & Forecast, by Pricing Model

8.5. License-based Model

8.5.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)

8.6. Subscription-based Model

8.6.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)

8.7. Service-based Model

8.7.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)

## 8.8. Pay Per Use Model

### 8.8.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)

## **CHAPTER 9. U.S. BIOSIMULATION MARKET: END USE ESTIMATES & TREND ANALYSIS**

### 9.1. U.S. Biosimulation Market: End Use Movement Analysis

### 9.2. U.S. Biosimulation Market: End Use Segment Dashboard

### 9.3. End Use Movement & Market Share Analysis, 2024 & 2030

### 9.4. U.S. Biosimulation Market Estimates & Forecast, by End Use

### 9.5. Life Sciences Companies

#### 9.5.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)

### 9.6. Academic Research Institutions

#### 9.6.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)

### 9.7. Others (CROs/CDMOs, Regulatory Authorities)

#### 9.7.1. Market Estimates & Forecast, 2018 - 2030 (USD Million)

## **CHAPTER 10. COMPETITIVE LANDSCAPE**

### 10.1. Company Categorization

### 10.2. Company Market Position/Share Analysis, 2024

### 10.3. Company Share Analysis

### 10.4. Company Profiles/Listing

#### 10.4.1. Certara, USA.

##### 10.4.1.1. Participant's Overview

##### 10.4.1.2. Financial Performance

##### 10.4.1.3. Product Benchmarking

##### 10.4.1.4. Recent Developments

#### 10.4.2. Dassault Syst?mes

##### 10.4.2.1. Participant's Overview

##### 10.4.2.2. Financial Performance

##### 10.4.2.3. Product Benchmarking

##### 10.4.2.4. Recent Developments

#### 10.4.3. Advanced Chemistry Development

##### 10.4.3.1. Participant's Overview

##### 10.4.3.2. Financial Performance

##### 10.4.3.3. Product Benchmarking

##### 10.4.3.4. Recent Developments

#### 10.4.4. Simulation Plus

- 10.4.4.1. Participant's Overview
- 10.4.4.2. Financial Performance
- 10.4.4.3. Product Benchmarking
- 10.4.4.4. Recent Developments
- 10.4.5. Schrodinger, Inc.
  - 10.4.5.1. Participant's Overview
  - 10.4.5.2. Financial Performance
  - 10.4.5.3. Product Benchmarking
  - 10.4.5.4. Recent Developments
- 10.4.6. Chemical Computing Group ULC
  - 10.4.6.1. Participant's Overview
  - 10.4.6.2. Financial Performance
  - 10.4.6.3. Product Benchmarking
  - 10.4.6.4. Recent Developments
- 10.4.7. Physiomics Plc
  - 10.4.7.1. Participant's Overview
  - 10.4.7.2. Financial Performance
  - 10.4.7.3. Product Benchmarking
  - 10.4.7.4. Recent Developments
- 10.4.8. Rosa & Co. LLC
  - 10.4.8.1. Participant's Overview
  - 10.4.8.2. Financial Performance
  - 10.4.8.3. Product Benchmarking
  - 10.4.8.4. Recent Developments
- 10.4.9. BioSimulation Consulting Inc.
  - 10.4.9.1. Participant's Overview
  - 10.4.9.2. Financial Performance
  - 10.4.9.3. Product Benchmarking
  - 10.4.9.4. Recent Developments
- 10.4.10. Genedata AG
  - 10.4.10.1. Participant's Overview
  - 10.4.10.2. Financial Performance
  - 10.4.10.3. Product Benchmarking
  - 10.4.10.4. Recent Developments
- 10.4.11. Instem Group of Companies
  - 10.4.11.1. Participant's Overview
  - 10.4.11.2. Financial Performance
  - 10.4.11.3. Product Benchmarking
  - 10.4.11.4. Recent Developments

10.4.12. PPD, Inc.

10.4.12.1. Participant's Overview

10.4.12.2. Financial Performance

10.4.12.3. Product Benchmarking

10.4.12.4. Recent Developments

10.4.13. Yokogawa Insilico Biotechnology GmbH

10.4.13.1. Participant's Overview

10.4.13.2. Financial Performance

10.4.13.3. Product Benchmarking

10.4.13.4. Recent Developments

## List Of Tables

### LIST OF TABLES

Table 1 List of secondary sources

Table 2 List of abbreviations

Table 3 U.S. biosimulation market revenue estimates and forecast, by offering, 2018 - 2030 (USD Million)

Table 4 U.S. biosimulation market revenue estimates and forecast, by application, 2018 - 2030 (USD Million)

Table 5 U.S. biosimulation market revenue estimates and forecast, by therapeutic area, 2018 - 2030 (USD Million)

Table 6 U.S. biosimulation market revenue estimates and forecast, by deployment model, 2018 - 2030 (USD Million)

Table 7 U.S. biosimulation market revenue estimates and forecast, by pricing model, 2018 - 2030 (USD Million)

Table 8 U.S. biosimulation market revenue estimates and forecast, by end use, 2018 - 2030 (USD Million)

## List Of Figures

### LIST OF FIGURES

- Fig. 1 U.S Biosimulation Market Segmentation
- Fig. 2 Market research process
- Fig. 3 Information procurement
- Fig. 4 Primary research pattern
- Fig. 5 Market research approaches
- Fig. 6 Value chain based sizing & forecasting
- Fig. 7 QFD modelling for Market share assessment
- Fig. 8 Market formulation & validation
- Fig. 9 Market snapshot
- Fig. 10 Type segment outlook
- Fig. 11 Application segment outlook
- Fig. 12 Distribution Channel segment outlook
- Fig. 13 Competitive landscape
- Fig. 14 U.S Biosimulation Market: Market dynamics
- Fig. 15 U.S Biosimulation Market: Porter's analysis
- Fig. 16 U.S Biosimulation Market: PESTLE analysis
- Fig. 17 U.S Biosimulation Market: Offering segment dashboard
- Fig. 18 U.S Biosimulation Market: Offering movement share analysis
- Fig. 19 Software Market Estimates & Forecasts, 2018 - 2030 (Revenue, USD Million)
- Fig. 20 Molecular Modeling & Simulation Software Market Estimates & Forecasts, 2018 - 2030 (Revenue, USD Million)
- Fig. 21 Clinical Trial Design Software Market Estimates & Forecasts, 2018 - 2030 (Revenue, USD Million)
- Fig. 22 PK/PD Modeling and Simulation Software Market Estimates & Forecasts, 2018 - 2030 (Revenue, USD Million)
- Fig. 23 Pbpk Modeling and Simulation Software Market Estimates & Forecasts, 2018 - 2030 (Revenue, USD Million)
- Fig. 24 Toxicity Prediction Software Market Estimates & Forecasts, 2018 - 2030 (Revenue, USD Million)
- Fig. 25 Other Software Market Estimates & Forecasts, 2018 - 2030 (Revenue, USD Million)
- Fig. 26 Services Market Estimates & Forecasts, 2018 - 2030 (Revenue, USD Million)
- Fig. 27 Contract Services Market Estimates & Forecasts, 2018 - 2030 (Revenue, USD Million)
- Fig. 28 Consulting Market Estimates & Forecasts, 2018 - 2030 (Revenue, USD Million)
- Fig. 29 Other (Implementation, Training, & Support) Market Estimates & Forecasts,

2018 - 2030 (Revenue, USD Million)

Fig. 30 U.S Biosimulation Market: Application segment dashboard

Fig. 31 U.S Biosimulation Market: Application Movement Share Analysis

Fig. 32 Drug Discovery & Development Market Estimates & Forecasts, 2018 - 2030  
(Revenue, USD Million)

Fig. 33 Disease Modeling Market Estimates & Forecasts, 2018 - 2030 (Revenue, USD  
Million)

Fig. 34 Other (Precision Medicine, Toxicology) Market Estimates & Forecasts, 2018 -  
2030 (Revenue, USD Million)

Fig. 35 U.S Biosimulation Market: Therapeutic Area Segment Dashboard

Fig. 36 U.S Biosimulation Market: Therapeutic Area Movement Share Analysis

Fig. 37 Oncology Market Estimates & Forecasts, 2018 - 2030 (Revenue, USD Million)

Fig. 38 Cardiovascular Disease Market Estimates & Forecasts, 2018 - 2030 (Revenue,  
USD Million)

Fig. 39 Infectious Disease Market Estimates & Forecasts, 2018 - 2030 (Revenue, USD  
Million)

Fig. 40 Neurological Disorders Market Estimates & Forecasts, 2018 - 2030 (Revenue,  
USD Million)

Fig. 41 Others Market Estimates & Forecasts, 2018 - 2030 (Revenue, USD Million)

Fig. 42 U.S Biosimulation Market: Deployment Model Segment Dashboard

Fig. 43 U.S Biosimulation Market: Deployment Model Movement Share Analysis

Fig. 44 Cloud-based Market Estimates & Forecasts, 2018 - 2030 (Revenue, USD  
Million)

Fig. 45 On-premise Market Estimates & Forecasts, 2018 - 2030 (Revenue, USD Million)

Fig. 46 Hybrid Model Market Estimates & Forecasts, 2018 - 2030 (Revenue, USD  
Million)

Fig. 47 U.S Biosimulation Market: Pricing Model Segment Dashboard

Fig. 48 U.S Biosimulation Market: Pricing Model Movement Share Analysis

Fig. 49 License-based Model Market Estimates & Forecasts, 2018 - 2030 (Revenue,  
USD Million)

Fig. 50 Subscription-based Model Market Estimates & Forecasts, 2018 - 2030  
(Revenue, USD Million)

Fig. 51 Service-based Model Market Estimates & Forecasts, 2018 - 2030 (Revenue,  
USD Million)

Fig. 52 Pay Per Use Model Market Estimates & Forecasts, 2018 - 2030 (Revenue, USD  
Million)

Fig. 53 U.S Biosimulation Market: End Use Segment Dashboard

Fig. 54 U.S Biosimulation Market: End Use Movement Share Analysis

Fig. 55 Life Sciences Companies Market Estimates & Forecasts, 2018 - 2030

(Revenue, USD Million)

Fig. 56 Academic Research Institutions Market Estimates & Forecasts, 2018 - 2030

(Revenue, USD Million)

Fig. 57 Others (CROs/CDMOs, Regulatory Authorities) Market Estimates & Forecasts, 2018 - 2030 (Revenue, USD Million)

Fig. 58 Company categorization

Fig. 59 Company Market position analysis, 2024

Fig. 60 Strategic framework

## I would like to order

Product name: U.S. Biosimulation Market Size, Share & Trends Analysis Report By Offering (Software, Services), By Application, By Therapeutic Area, By Deployment Model, By Pricing Model, By End-use, And Segment Forecasts, 2025 - 2030

Product link: <https://marketpublishers.com/r/U3C6A2BFDD8DEN.html>

Price: US\$ 3,950.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

[info@marketpublishers.com](mailto:info@marketpublishers.com)

## Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/U3C6A2BFDD8DEN.html>