

Resource Summary Report

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General Neural Simulation System

RRID:SCR_006316

Type: Tool

Proper Citation

General Neural Simulation System (RRID:SCR_006316)

Resource Information

URL: <http://genesis-sim.org/>

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Description: General purpose simulation platform developed to support the simulation of neural systems ranging from subcellular components and biochemical reactions to complex models of single neurons, simulations of large networks, and systems-level models. As such, GENESIS, and its version for parallel and networked computers (PGENESIS) was the first broad scale modeling system in computational biology to encourage modelers to develop and share model features and components. User contributed GENESIS models and simulations are available. You may to contribute a model or simulation. Educational tutorials for instruction in both neurobiology and computational methods have been developed. These tutorials and GENESIS are now being widely used in graduate and undergraduate instruction. These uses include full semester courses in computational neuroscience or neural modeling, short intensive courses or workshops, an option for a course project, and short units on computational neuroscience within courses on artificial neural nets. They also have a repository of user-contributed tutorials and materials for use in neuroscience education. If you have course descriptions, syllabi, exercises, tutorials, or short HOWTO documents, please upload them to Education.

Abbreviations: GENESIS

Synonyms: GENESIS, GENESIS Simulator, GEneral NEural Simulation System

Resource Type: data or information resource, data set, narrative resource, simulation software, software application, software library, software resource, software toolkit, source code, training material

Keywords: electrophysiology, computer, in silico, model, modeling, simulation, neural system, network, neurobiology, computational neuroscience, neural modeling, subcellular, biochemical reaction, neuron, channel, cell, FASEB list

Availability: The community can contribute to this resource

Resource Name: General Neural Simulation System

Resource ID: SCR_006316

Alternate IDs: nif-0000-00091

Alternate URLs: <http://www.nitrc.org/projects/genesis> <http://genesis-sim.org/GENESIS/>

Record Creation Time: 20220129T080235+0000

Record Last Update: 20260821T193803+0000

Ratings and Alerts

No rating or validation information has been found for General Neural Simulation System.

No alerts have been found for General Neural Simulation System.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 459 mentions in open access literature.

Listed below are recent publications. The full list is available at [NIF](#).

Nagarajan P, et al. (2026) Genome-wide gene by sleepiness interaction analysis for sleep apnea. *Sleep*, 49(1).

Brosz M, et al. (2026) Coarse-grained Martini 3 model for collagen fibrils. *Biophysical journal*, 125(2), 581.

Kanchan K, et al. (2026) Genetic Determinants of Peanut-Specific IgG4 Levels in the Context of Sustained Oral Peanut Exposure in the LEAP Study. *Immunology*, 178(2), 280.

Cheng M, et al. (2026) Neuronal and glial networks interact with traumatic brain injury to modulate cognition in ABCD study. *NPJ systems biology and applications*, 12(1).

Hegab Souquette A, et al. (2026) Integrated drivers of basal and acute immunity in diverse human populations. *Cell reports. Medicine*, 7(4), 102690.

Dorfsman D, et al. (2026) WDR12 and HIVEP3 are contributors to cognitive preservation in Amish SuperAgers. *Alzheimer's & dementia : the journal of the Alzheimer's Association*, 22(3), e71293.

Sato K, et al. (2026) Estimating Protein Conformational States from High-Speed AFM Images with Molecular Dynamics and Deep Learning. *Journal of chemical information and*

modeling, 66(8), 4484.

Chiles JW, et al. (2026) Whole Genome Sequence Analysis of Weight Loss in 16 972 Participants With COPD Reveals Novel Risk Loci in DRAIC and RFX3. *Journal of cachexia, sarcopenia and muscle*, 17(3), e70293.

Abu-Amara H, et al. (2026) Indian-enriched genetic variants are associated with cognitive function. *Alzheimer's & dementia : the journal of the Alzheimer's Association*, 22(2), e71115.

Esmaeili M, et al. (2026) Distinct regulatory elements of SLC6A14 expression contribute to modification of cystic fibrosis phenotypes. *Human genetics*, 145(1), 8.

Montasser ME, et al. (2026) Genetics of Response to Canagliflozin (GRC) Study: Rationale, Design, and Pharmacodynamic Responses. *Clinical and translational science*, 19(6), e70594.

Chen J, et al. (2026) DNA actively regulates the "safety-belt" dynamics of condensin during loop extrusion. *Nature communications*, 17(1), 1520.

Bian Y, et al. (2026) Structural organization of HBV pgRNA genome driven by phase separation in capsid confinement. *Nature communications*, 17(1).

Bollschweiler E, et al. (2026) Years of Life Lost of Patients With Early Adenocarcinoma of the Esophagogastric Junction Compared to Esophageal or Gastric Adenocarcinoma. A Registry-Based Study. *Cancer medicine*, 15(7), e72079.

Oishi S, et al. (2026) Prefusion-stabilized SARS-CoV-2 spike reshapes antigenic hierarchy and antibody targeting against conserved and occluded epitopes. *NPJ vaccines*, 11(1).

Wang D, et al. (2026) Application of the STAAR framework in detecting rare variant associations with Alzheimer disease and related dementias: Insights and implications. *HGG advances*, 7(2), 100574.

Hajdú N, et al. (2026) Associations Between Previously Identified Genetic Variants and Clinical Phenotypes of Diabetic Neuropathy in Type 2 Diabetes: An Exploratory Analysis of the Discovery Cohort. *International journal of molecular sciences*, 27(12).

Khurshid Z, et al. (2026) Interactive effects of telomere length and genetic variants on Alzheimer disease risk across multiple ancestral populations. *Alzheimer's research & therapy*, 18(1).

Shibata S, et al. (2026) Structural analysis of a motor with increased mechanical output reveals new transitions in kinesin microtubule motility. *Scientific reports*, 16(1), 487.

Pentchev JV, et al. (2026) Alzheimer's disease polygenic risk in early- and late-onset Alzheimer's disease. *Alzheimer's & dementia : the journal of the Alzheimer's Association*, 22(1), e71066.