

Resource Summary Report

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Caltech, The Beckman Institute: The Biological Network Modeling Center

RRID:SCR_008060

Type: Tool

Proper Citation

Caltech, The Beckman Institute: The Biological Network Modeling Center
(RRID:SCR_008060)

Resource Information

URL: <http://bnmc.caltech.edu/>

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Description: The Beckman Institute BNMC brings together researchers from many disciplines at Caltech to address problems in the mechanistic modeling of coupled genomic, intercellular and intracellular processes. It represents an attempt to encourage closer interaction and collaboration between groups in Biology, Control and Dynamical Systems, and the Center for Advanced Computing Research. The focus of BNMC is biochemical phenomena occurring within and between cells, in particular the mechanistic modeling of molecular networks of all kinds (e.g., transcriptional, regulatory, metabolic, signal transduction, mechanical, etc.) with and without spatial variation and intercellular communication. BNMC is formed as a coordinated effort aimed at (1) applying existing capabilities to collaboratively solve biological modeling problems that arise in answering scientific questions in Caltech laboratories, (2) exploring a diversity of novel approaches in order to achieve fundamental advances necessary to address the classes of modeling problems biologists want to solve, and (3) organizing projects to better share human experience as well as common infrastructure to avoid duplication and maximize solution interoperability.

Synonyms: BNMC

Resource Type: data or information resource, organization portal, portal

Keywords: dynamical system, advanced computing, biochemical, biological model, biologist, biology, cell, control system, genomic, interaction, intercellular, intercellular communication, intracellular, mechanical, mechanistic modeling, metabolic, regulatory, signal transduction, transcriptional

Resource Name: Caltech, The Beckman Institute: The Biological Network Modeling Center

Resource ID: SCR_008060

Alternate IDs: nif-0000-10444

Record Creation Time: 20220129T080245+0000

Record Last Update: 20260829T182838+0000

Ratings and Alerts

No rating or validation information has been found for Caltech, The Beckman Institute: The Biological Network Modeling Center.

No alerts have been found for Caltech, The Beckman Institute: The Biological Network Modeling Center.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 95 mentions in open access literature.

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

Alonso-Puyo J, et al. (2024) The Non-Linear Profile of Aging: U-Shaped Expression of Myostatin, Follistatin and Intermediate Signals in a Longitudinal In Vitro Murine Cell Sarcopenia Model. *Proteomes*, 12(4).

Costa-Gouvea TBL, et al. (2024) Poly I:C elicits broader and stronger humoral and cellular responses to a Plasmodium vivax circumsporozoite protein malaria vaccine than Alhydrogel in mice. *Frontiers in immunology*, 15, 1331474.

Maggiorani D, et al. (2024) Senescence drives immunotherapy resistance by inducing an immunosuppressive tumor microenvironment. *Nature communications*, 15(1), 2435.

Degani O, et al. (2024) Integrated Management of the Cotton Charcoal Rot Disease Using Biological Agents and Chemical Pesticides. *Journal of fungi (Basel, Switzerland)*, 10(4).

Bogren M, et al. (2020) Implementation of a context-specific accreditation assessment tool for affirming quality midwifery education in Bangladesh: a qualitative research study. *Global health action*, 13(1), 1761642.

Shigemoto Y, et al. (2019) Voxel-based correlation of 18F-THK5351 accumulation and gray matter volume in the brain of cognitively normal older adults. *EJNMMI research*, 9(1), 81.

Shah V, et al. (2019) Morphological Plasticity in a Sulfur-Oxidizing Marine Bacterium from the SUP05 Clade Enhances Dark Carbon Fixation. *mBio*, 10(3).

Mildažienė V, et al. (2019) Treatment of Common Sunflower (*Helianthus annuus* L.) Seeds with Radio-frequency Electromagnetic Field and Cold Plasma Induces Changes in Seed Phytohormone Balance, Seedling Development and Leaf Protein Expression. *Scientific reports*, 9(1), 6437.

Kaczmarczyk-Ziemba A, et al. (2019) The microbiome profiling of fungivorous black tinder fungus beetle *Bolitophagus reticulatus* reveals the insight into bacterial communities associated with larvae and adults. *PeerJ*, 7, e6852.

Alur VC, et al. (2019) Mining Featured Biomarkers Linked with Epithelial Ovarian Cancer Based on Bioinformatics. *Diagnostics (Basel, Switzerland)*, 9(2).

Arvola O, et al. (2019) Hippocampal sub-regional differences in the microRNA response to forebrain ischemia. *Molecular and cellular neurosciences*, 98, 164.

Kuppili PP, et al. (2018) Biological rhythm impairment in bipolar disorder: A state or trait marker? *Indian journal of psychiatry*, 60(4), 404.

Svensson O, et al. (2018) Assessing the ecological impact of banana farms on water quality using aquatic macroinvertebrate community composition. *Environmental science and pollution research international*, 25(14), 13373.

Bonkian LN, et al. (2018) In Vivo Antiplasmodial Activity of Two Sahelian Plant Extracts on *Plasmodium berghei* ANKA Infected NMRI Mice. *Evidence-based complementary and alternative medicine : eCAM*, 2018, 6859632.

Redwan EM, et al. (2018) Prediction of Disordered Regions and Their Roles in the Anti-Pathogenic and Immunomodulatory Functions of Butyrophilins. *Molecules (Basel, Switzerland)*, 23(2).

Mariette C, et al. (2018) The FREGAT biobank: a clinico-biological database dedicated to esophageal and gastric cancers. *BMC cancer*, 18(1), 139.

Mangifesta M, et al. (2018) Mucosal microbiota of intestinal polyps reveals putative biomarkers of colorectal cancer. *Scientific reports*, 8(1), 13974.

Liu G, et al. (2018) Tracking of transplanted human umbilical cord-derived mesenchymal stem cells labeled with fluorescent probe in a mouse model of acute lung injury. *International journal of molecular medicine*, 41(5), 2527.

Peyraud R, et al. (2018) Control of primary metabolism by a virulence regulatory network promotes robustness in a plant pathogen. *Nature communications*, 9(1), 418.

Kaczmarczyk A, et al. (2018) First insight into microbiome profile of fungivorous thrips *Hoplothrips carpathicus* (Insecta: Thysanoptera) at different developmental stages: molecular evidence of *Wolbachia* endosymbiosis. *Scientific reports*, 8(1), 14376.