

A critical component of the Neuroscience Information Framework (NIF) project is a consistent, flexible terminology that can be used to describe and retrieve neuroscience-relevant resources. The lack of a shared semantic framework is one of the major barriers to making biomedical information widely searchable. This framework is important if individual researchers and automated search agents are to access and utilize the most up-to-date information. To address this need, NIF has created NeuroLex, a comprehensive collection of common neuroscience domain terminologies woven into an ontologically consistent, unified representation of the biomedical domains typically used to describe neuroscience data.

NeuroLex provides the building blocks for NIFSTD, a formal OWL ontology available as individual modules or an integrated set. NIFSTD currently has about 55,000 concepts that span gross anatomy, cells of the nervous system, subcellular structures, molecules, diseases, functions, and techniques. We need your input to add more content and correct what is there. Feel free to explore the NeuroLex and leave your imprint. You don't need to have an account to get started, but if you'd like your contributions acknowledged, getting an account will ensure that your contributions are able to be recognized. We will be monitoring the input into the NeuroLex and incorporating these updates into our formal ontologies, where appropriate.



Visit NeuroLex Wiki at neurolex.org

Let NIF Bring People to You

BASIC
REFERENCES
ADVANCED

NIF Standard

Description: ModelDB provides an accessible location for storing and efficiently retrieving computational neuroscience models. ModelDB is tightly coupled with NeuronDB. Models can be used for any environment. Model code can be viewed before downloading and browsers can launch the models. ModelDB is a curated database of published models in the field of computational neuroscience. It addresses the need for access to such models in an open and accessible way.

Other_Name(s): ModelDB

Parent Organization: Yale University; Connecticut; USA

Supporting Agency: National center for research resources,

Grant:

Resource Type: simulation software, data storage repository, database, service

Abbreviation:

➤ NIF TOOLS

➤ REGISTER A RESOURCE

Recommend a Resource at neuinfo.org.

Through its resource registry and concept-based query system, NIF enhances neuroscience research by enabling discovery and access to research data and tools worldwide. NIF is actively seeking resource providers to make those resources available through NIF and to bring people to your site. NIF's full-time curator and support staff will assist you with the registration process. To include your resource in NIF, visit <http://www.neuinfo.org/> and register your resource.



Neuroscience Information Framework

The Neuroscience Information Framework, an initiative of the NIH Blueprint for Neuroscience Research, is a semantically-enhanced portal to web-based neuroscience resources: data, materials, and tools. NIF has developed search tools, which expose the contents of federated databases and deep or “hidden” web resources to NIF, allowing users to discover content that is normally hidden from traditional search engines. NIF is designed to serve the biomedical research community and is actively looking for resource providers to make their resources accessible through NIF.

The image displays several screenshots from the Neuroscience Information Framework (NIF) website. The top left screenshot shows the search interface with a query for "GABAergic neuron" and a list of search results. The top right screenshot shows the NeuroLex interface for "Cerebellum", including a definition and related terms. The bottom left screenshot shows a table of search results for "cerebellum Purkinje neuron" with columns for Image, Cell Type, Cellular Structure, Brain Region, and Micro. The bottom right screenshot shows a detailed NIFCard for "Cerebellum Purkinje cell" with a definition, synonyms, and a diagram of the cell structure.

Searching a diverse set of resources and making the search results intelligible are major challenges. NIF utilizes many advanced features for information retrieval and integration. Chief among these is the use of a shared vocabulary, NeuroLex, for describing and querying resources. NeuroLex currently consists of thousands of concepts derived from community-built ontologies and vocabularies and enhanced through the input of neuroscience experts. Through intuitive query interfaces, users can make use of the NeuroLex vocabularies to expand or refine their search and to perform so-called “concept-based queries.” Through a single interface, users can search across multiple information sources.

NIF is designed as a community resource. The more participation from the community, the better the resource. We welcome all feedback and suggestions and are actively looking for resource providers to make their resources accessible through NIF. Register your resource at <http://neuinfo.org/>, or send us an e-mail at curation@neuinfo.org.