



**Area of Impact: Health**  
**Specialty: Nervous System**

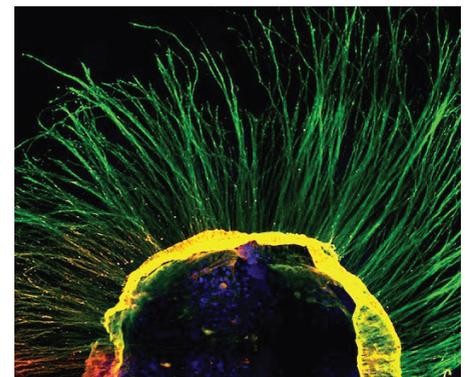
The Millennium Institute of Biomedical Neuroscience, BNI, gathers some 200 people who include students and neuroscientists of basic, clinical and mathematical levels, forming a critical mass around cutting-edge infrastructure in order to carry out top-level research in neuroscience, and provide technology and education.

These professionals explore the structure and function of the brain, covering from whole organisms down to the cell, and investigate the molecular mechanisms of neurological and psychiatric illnesses through complementary lines of research, multiple genetic models, applied mathematics, proximity to clinical work and advanced technology. Additionally, international networks of scientific collaboration consolidated with the Northern Hemisphere and Latin America and the organization of courses and scientific meetings make BNI a unique institute in Chile and a leader in neuroscience in the region.

A new generation of researchers, clinicians and leaders in the field of neuroscience are being trained and organized in an interdisciplinary environment.

The results of their investigations are published in prestigious international journals and transferred to society through the discovery of new technological approaches applied to diagnostics, therapy and brain/machine interface to improve people's quality of life.

BNI generates a portfolio of projects of applied science, strong strategic alliances with public and private financing institutions, professional innovation management and technology transference. Furthermore, it brings neuroscience closer to specialized communities and general public, promoting the value of science as a transforming agent.



MAIN ACHIEVEMENTS

- 196 ISI publications during 2011-2015 and an average impact factor of 7.52 in 2014, comparable to the impact of international centers of excellence.
- 38 doctorate students, 18 master students and 20 undergraduates obtained their degrees between 2011-2015.
- Patent for a potential therapy to treat Alzheimer's disease, once there is proof of the effectiveness of increasing XBP1 protein in the brain.
- Creation of unique capabilities in optical microscopy (confocal, spinning discs, light-sheet, PALM SuperResolution, tissue-scanner).
- Launch of international networks of advanced microscopy and neuroscience in Latin America (NeuroSur).
- Construction of the BNI building to consolidate our identity and promote creative thinking.

CONTACT INFORMATION

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ACTING DIRECTOR: **Claudio Hetz**



Andrés Couve



Claudio Hetz



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## RESEARCHERS

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**Senior Researchers:**  
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## RESEARCH TOPICS

- Functional sub-cellular dynamics.
- Cellular identity and morphology.
- Supra-cellular and circuit development.
- Plasticity and behavior.
- Systems neuroscience.
- Clinical research.
- Applied mathematics and biomedical informatics.
- Neuropathology.

## NOTED OUTREACH ACTIVITIES

- **Creation of the platform Loligo education ([www.loligo.cl](http://www.loligo.cl))**, which contains various tools to bring neuroscience to the community and promote scientific culture. The platform consists of interactive comics, games to learn about neuroscience, documentaries and educational audiovisual capsules. It also incorporates an alliance between the BNI and the Biointeractive Howard Hughes Medical Institute (HHMI), which features short films, animations, interactive material and work guides translated into Spanish and adapted to the national curriculum to improve the teaching skills of teachers in Chile through face-to-face workshops.
- **The BNI also holds an intense agenda for dissemination of scientific and technological knowledge towards the public and has an active presence in social media** (Facebook: Comunidad Dendros BNI - Twitter: institutoBNI - Instagram: neuroBNI).
- **Dendros: online comic (2016)**: 9th chapter of an interactive online comic made up of 10 pages which will be available at [www.loligo.cl/dendros](http://www.loligo.cl/dendros).
- **Domo cerebro, a trip through Chile (2016)**: 2 exhibitions of the "Brain dome" in regions of the country.

**PRODUCTIVITY PUBLICATIONS  
(BETWEEN 2011-2015)**  
ISI: 196 | PATENTS: 4 | INTELLECTUAL  
PROPERTY RIGHTS: 5

**ACTIVE MILLENNIUM INSTITUTE  
From 2011 to 2021**  
The Millennium Institutes have a duration of 10 years,  
subject to an evaluation halfway through the period.

**PRESENCE  
METROPOLITANA REGION**



## HOST INSTITUTIONS:

