

BIOGRAPHICAL SKETCH

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NAME Benabid, Alim Louis	POSITION TITLE Emeritus Professor of Biophysics Chairman of Clinatec
eRA COMMONS USER NAME (credential, e.g., agency login) huntmc	

INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
<i>Joseph Fourier University, Grenoble, France</i>	<i>Baccalaureate</i>	<i>1958</i>	<i>Humanities, Mathematics</i>
<i>Joseph Fourier University, Grenoble, France</i>	<i>M.D. Thesis</i>	<i>1970</i>	<i>Medicine</i>
<i>University Hospital, Grenoble, France</i>	<i>Staff Neurosurg</i>	<i>1972</i>	<i>Neurosurgery</i>
<i>Joseph Fourier University, Grenoble, France</i>	<i>PhD. Thesis</i>	<i>1978</i>	<i>Physics</i>
<i>Joseph Fourier University, Grenoble, France</i>	<i>Professor</i>	<i>1978</i>	<i>Biophysics/Neurosurgery</i>
<i>Salk Institute San Diego California, USA</i>	<i>Visit Prof Sabbatic</i>	<i>1979-1980</i>	<i>Preclinical Biology</i>
<i>Inserm Research Unit 318</i>	<i>Director</i>	<i>1988-2007</i>	<i>Preclinical Neurobiology</i>
<i>University Hospital, Grenoble, France</i>	<i>Head Department</i>	<i>1989-2004</i>	<i>Neurosurgery</i>
<i>CEA-Clinatec E J Safra Research Center</i>	<i>Chairman</i>	<i>2007-present</i>	<i>Translational Research</i>

A. Personal Statement

We aim at offering to young neurosurgeons involved in functional neurosurgery a double training, both on the clinical and experimental grounds.

The clinical training is provided by a strong participation to the movement disorders in the Neurosurgery Department (Pr Stephan Chabardes, Pr Emmanuel Gay) of the Grenoble University Hospital (CHUGA). 40 patients/year are operated (DBS in STN, GPi, and thalamus, as well as in PPN). Robotized neurosurgery, which had been designed since 1989, is regularly performed, based also on intraoperative electrophysiological exploration (MRI targeting, microrecording, LFP (local field potential) guidance of the placement of the electrodes), intraoperative cooperation with the neurologists (Dr Valerie Fraix). The follow up is done at CHUGA and benefits when needed of the Optical Motion Capture room at Clinatec. The experimental training is

provided at Clinatec, where a complete clinical unit has been created, in full accordance with the French medical surgical guidelines.

This Clinatec Unit has 6 bedrooms, intraoperative 1.5T MRI suit, SPECT-CT, MEG, robotized robotic arm Rosa2.0, robotized image guided microscope, Alpha-Omega 12 channels microrecording system with advanced data-processing. This Clinical Unit hosts the experimental clinical trial aiming at the development of a neuroprotective method, consisting in an endoventricular chronic insertion of a laser fiber

The goal of the proposed research is to create innovative solutions for diagnosis and treatment in medicine, particularly in neurology and neurodegenerative diseases. In the line of deep brain stimulation at high frequency for Parkinson's disease, we are working on neuroprotective approaches to slow down the degenerative process in PD, and eventually in Alzheimer's disease. This approach is based on the effect of Near InfraRed (NIR) on the mitochondrial dysfunction, following a preclinical study and proof of concept in MPTP monkeys, supported by a Michael J Fox grant in 2012 and published in 1976 (F. Darlot et al, Annals of Neurology, 2016)

B. Positions and Honors

Positions and Employment

<i>University Hospital, Grenoble, France Joseph Fourier University, Grenoble, France Salk Institute San Diego California, USA Inserm Research Unit 318 University Hospital, Grenoble, France CEA-Clinatec E J Safra Research Center</i>	<i>Staff Neurosurg Professor Visit Prof Sabbatic Director Head Department Chairman</i>	<i>1972 1978 1979-1980 1988-2007 1989-2004 2007-present</i>	<i>Neurosurgery Biophysics/Neurosurgery Preclinical Biology Preclinical Neurobiology Neurosurgery Translational Research</i>
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Other Experience and Professional Memberships

- 1971 Société de Neuropsychiatrie Médico-Sociale de la Région Lyonnaise
- 1972 Société Française de Neurochirurgie
- 1972 Société de Neurochirurgie de Langue Française
- 1976 European Society for Experimental Surgery (up to 1984)
- 1977 European Society for Stereotaxy and Functional Neurosurgery
- 1980 American Society for Neurosciences
- 1981 European Society for Neurosciences

- 1989 Society for Magnetic Resonance in Medicine
- 1989 Société Française de Neurosciences
- 1989 World Federation of Stereotactic and Functional Neurosurgery
(Secretary-Treasurer 1993-1997)
- 1998 Society for Movement Disorders
- 1999 American Association of Neurological Surgeons
- 2000 Congress of Neurological Surgeons (USA)

Editorial Boards:

- Neurochirurgie (1982)
- Annales de Chirurgie (1984-1996)
- Magnetic Resonance in Medicine (1988-1996)
- Stereotactic and Functional Neurosurgery (since 1995)
- Neurosurgery (since 1997)
- Movement Disorders (2005-2009)
- International Journal of Parkinson's Disease (since 2010)

Prices and Honors

- 1971 **Prix Beytout**
- 1972 **Prix de Thèse** de l'Université de Grenoble
- 1993 **Prix Electricité-Santé** de l'EDF
- 1994 **Prix du Club de la Presse** de l'Isère
- 1996 **Prix Médecine et Biologie** du Comité du Rayonnement Français
- 1997 **Grand Prix de la Recherche Biomédicale PCL** de l'Académie des Sciences
- 1999 **Prix de l'œuvre Scientifique** (Fondation Nationale pour la Promotion de la Santé, et le Développement de la Recherche, Algérie)
- Prix Jean Valade.** Fondation de France.
- 2000 **Prix Klaus Joachim Zülch.** Gertrud Reemtsma Foundation (Cologne)
- Scientific Award 2000.** International Neurobionics Foundation (Hannover)
- Cotzias Award,** Spanish Society of Neurology, Barcelona
- 2002 **Sherrington Medal** of the Royal Society of Medicine, London
- Prix Recherche et Santé** de l'Institut des Sciences et de la Santé
- Prix Betty and David Koetser Foundation** (Zurich)
- Prix Dingebauer** of the German Society of Neurology (Manheim)
- 2005 **Spiegel and Wycis Medal** of the WFSSN, Roma
- 2006 **Prix Matmut** de l'Innovation médicale et de la Fondation de l'avenir
- 2007 **James Parkinson Award,** Parkinson's Disease Foundation, New York,
- Victor Horsley Medal,** London, UK
- 2008 **Movement Disorders Award** of the American Academy of Neurology.
- 1st Internl Highest Recognition Award, Secretary of Health and Human Services.** Washington.DC
- Prix d'Honneur** de l'INSERM
- Victoires de la Médecine,** Association of University Hospitals for the last 50 Years
- 2009 **IPSEN Prize,** IPSEN Foundation
- 2012 **Légion d'Honneur (Officer)**
- 2013 **Pritzker Prize,** Michael J Fox Foundation
- 2013 **Jay van Andel Prize,** Jay van Andel Foundation
- 2014 **Lasker Prize,**
- Breakthrough Prize for Life Sciences,**
- Lifetime Achievement Prize.**
- 2015 **Giant in Neuromodulation Award**
- 2016 **European Inventor Award Research**
- Ambroise Paré Medal** (French Academy of Surgery)
- Vilhelm Magnus Medal,** Norwegian Neurosurgical Society

Award Lectures

- 1997 **John R Green Lecture**, Phoenix
Lars Leksell Lecture, Charlottesville
Ley-Tolosa Lecture, Barcelona
- 2001 **Milton Shy Award Lecture**, NIH-Philadelphia- Columbia New York
- 2004 **William Sweet Award Lecture**, Mass General Hospital, Boston
Matson Award Lecture, Harvard Medical School, Boston
Honorary Guest Speaker Award Lecture, ASSFN, Cleveland, 6 October 2004
William Cone Award Lecture, Mc Gill University, Montreal, Quebec
- 2005 **C.D. Marsden Memorial Lectureship Award Lecture**, Movement Disorders Society **Tamari**
Sabbagh Award Lecture, MEMA, Beyrouth
- 2007 **Victor Horsley Award Lecture**, London, UK
Dudley S. Dinner Distinguished Epileptologist's Lecture, Cleveland, USA
- 2008 **Lars Leksell Lecture**, Quebec, Canada
Kumar Lecture, Banff, Alberta, Canada
Shelley Chou Lecture, University of Minneapolis, Minnesota, USA
- 2009 **C. Miller Fisher Lecture**, Harvard, Boston
- 2010 **Philip L Gildenberg Lecture**, Houston, USA
- 2012 **Inscription in the "Petit Larousse Illustré" Dictionary 2013**
- 2015 **Issam Fares Lecture**, MD. Anderson Center, Houston
- 2016 **Schneider Lecture AANS Chicago**
Vilhelm Magnus Memorial Lecture, Oslo, Norway
Firkin Oratio, Goldcoast, Australia
- 2017 **A*Star Public Lecture Singapore 2017**
- 2018 **Hildale Lecture Madison 2018**

Honoris Causa Doctorates :

- 2005 **Doctor Honoris Causa** University of Galway, Ireland
- 2006 **Doctor Honoris Causa** University of London, Ontario
- 2008 **Doctor Honoris Causa** McGill University, Montreal, Quebec
- 2012 **Doctor Honoris Causa** Porto University, Porto, Portugal
- 2018 **Doctor Honoris Causa** KUL, Leuven, Belgique
- 2018 **Doctor Honoris Causa** Chan Tun University, Taipei, Taiwan

Medals and Academies

- 1997 Chevalier des Palmes Académiques
- 1999 Member (corresponding) of Academy of Medicine
- 2002 Chevalier de l'Ordre National de la Légion d'Honneur
- 2002 Member of the Royal Academy of Medicine of Belgium
- 2002 Member of the Academy of Sciences, Institut de France
- 2012 Officier de l'Ordre National de la Légion d'Honneur
- 2016 Officier des Palmes Académiques

Honorary Membership of Scientific Societies:

- 1998 Belgian Society of Neurology
- 2007 Spanish Society of Neurosurgery
Japanese Society of Neurosurgery
Italian League against Epilepsy
- 2008 Movement Disorders Society
- 2012 German Clinical Neurophysiology Society
- 2016 Brazilian Functional and Stereotactic Neurosurgery Society
- 2017 Spanish Society of Functional and Stereotactic Neurosurgery

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h-index 80