

BIOGRAPHICAL SKETCH

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NAME Alessandro Vercelli	POSITION TITLE Full Professor, Human Anatomy		
EDUCATION/TRAINING (<i>Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.</i>)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	MM/YY	FIELD OF STUDY
Degree in Medicine and Surgery, University of Torino, Italy	MD	1986	Human Anatomy
Doctorate Degree in Ophthalmology, University of Torino, Italy	PhD	1992	Ophthalmology
Doctorate Degree in Anatomy, University of Lausanne, Switzerland	PhD	1994	Neuroanatomy

ORCID # 0000-0002-5909-2128; Scopus: HI = 30, 113 publications, 4019 citations

A. Personal Statement

The major research interest of A. Vercelli has been in the field of cortical development, especially regarding the development of pyramidal neurons and cortical interneurons, and of callosal connections. His contributions on the development of dendritic bundles in cerebral cortex.

More recently, he was interested in the molecular pathways leading to neurogenesis and neuronal cell death, which he studied in development and in experimental models of transient/permanent cerebral ischemia, acute/chronic glaucoma, epilepsy and Alzheimer's disease. Finally, he is studying the immunomodulatory, neuroprotective and growth promoting roles of cell therapy in SMA, ALS and spinal cord injury, particularly related to neuroinflammation.

AV studies the mechanisms of neuronal death during development and disease. He studied excitotoxicity, autophagy and oxidative stress induced in different models of human disease. In particular, he addressed the role of a MAP-kinase (JNK) in neuronal death and using specific inhibitors he obtained substantial prevention of neuronal death in models of cerebral ischemia, Alzheimer's disease and epilepsy. The aim is to understand the molecular pathways involved in neuronal death and to block them.

In several neurodegenerative diseases, the pathology is not cell-autonomous, i.e. pathogenesis involves other cells in addition to neurons. Therefore, AV studied neuroinflammation in stroke, ALS and SMA and how to prevent it to delay the onset and the development of disease.

He has studied, in collaboration with several other research groups, neural or mesenchymal stem cell transplantation into several models of neurological diseases (ALS, spinal cord injury and Huntington's disease).

Part of his research is now devoted to the anatomical and functional studies of the insula and of cortical regions in which Von Economo neurons are located in humans by fMRI.

AV is coordinating a Horizon 2020 project entitled My-AHA (my Active and Healthy Ageing) involving 16 partners in Europe, Australia, Japan and South Korea, which perform a RCT aiming at dementia risk detection and prevention.

In addition to research and teaching activities, AV and his group are strongly involved in dissemination activities, such as Brain Awareness Week and Neuroscience Olympic Games in Turin, Open lab and Night of researchers, events at the National Bookfair in Turin, meeting events with small/medium enterprises, seminars and meetings in patients associations for neurodegenerative diseases. His group has founded a spin-off company and has been collaborating with several biotec companies in Europe and in USA.

He has been interviewed by several national newspapers (La Stampa, La Repubblica, Corriere della Sera, Giornale, Avvenire, etc), and magazines (such as Airone and Vanity fair). To this aim, his institute has hired a press agent.

B. Positions and Honors

▪ Positions and Employment

March 1990 - March 1993: Research assistant in Human Anatomy (Faculty of Medicine and Surgery) at the Department of Human Anatomy and Physiology of Torino, Italy.

October 1990 - October 1991, on leave from the Dept. of Human Anatomy and Physiology, "assistant médecin" (supervisor: prof. G.M. Innocenti) at the Institute of Anatomy of Lausanne, Switzerland (Director prof. H. van der Loos).

16 November - 14 December 1992: Visiting scholar at the Department of Brain and Cognitive Sciences, MIT, Cambridge, MA, USA.

March 1993- November 1998: Research assistant, permanent position, in Human Anatomy (Faculty of Medicine and Surgery) at the Department of Human Anatomy and Physiology (from January the 1st, 1996 Dept. of Anatomy, Pharmacology and Forensic Medicine) of Torino, Italy.

July-August 1993: Visiting scholar at the Institute of Anatomy, University of Lausanne (Switzerland);

August 1994: Visiting scholar at the Institute of Anatomy, University of Lausanne (Switzerland);

18 July - 17 August 1995: Visiting scholar at the Department of Brain and Cognitive Sciences, MIT, Cambridge, MA, USA.

15 July- 15 Sept 1996: Visiting scholar at the Institute of Anatomy, University of Lausanne (Switzerland);

November 1998- Associate professor in Human Anatomy, permanent position, Faculty of Medicine and Surgery, University of Torino, Italy

Director of the Interdepartmental Ctr for Neuroscience of the University of Torino (NIT, 2014-2020)

President of the National Institute of Neuroscience (INN, April 2014-20)

Director of the Neuroscience Institute Cavalieri Ottolenghi (NICO, June 2014-21)

Vice-Director for Research, Department of Neuroscience (University of Torino, 2018-2020)

▪ Other Experience and Professional Memberships

Member of the ASN committee for the two-year period 2017-2018 (five rounds, 101 CVs screened for full professor, 219 CVs for associate professor, sector 05/H1 Human Anatomy)

Member of several local commissions for competitive exam for associate professor and researcher in Italy.

Referee for the Joint Program for Neurodegenerative Diseases, Human Frontiers Science Program, PRIN, ANR investissements d'Avenir, Fundação para a Ciência and Tecnologia Portugal, Cariverona Foundation, Cariparo Foundation, Muscular Dystrophy UK, Regione Campania, University of Trento.

Referee for many scientific international journal in the Neuroscience field.

Member of the editorial board for Digitcult journal and Frontiers in Ageing Neuroscience.

Member of: 1986: Italian Society of Anatomy; 1987: Italian Society of Neuroscience; 1990: European Society of Neuroscience (ENA); 1992: Neuroscience Society USA; Italian Group for the Study of Neuromorphology (Council member since 2002); Member of the Advisory Committee of the International Society for Developmental Neuroscience (IDNA); Member of the Swiss Society of Anatomy and Histology and of the Union of Swiss Societies of Experimental Biology (USGEB); 2006: EBBS (European Brain & Behavior Society); 2015: ESN (European Society for Neurochemistry).

Advisory Board of: 2003-2007: "Italian Society of Neuroscience" - Secretary / Treasurer from 1 January 2006 to 31 December 2007. Italian Group for the study of Neuromorphology since 2003 (re-elected in 2006); from 2010 to 2018 he holds the position of Secretary General; Treasurer of the World Congress, IBRO 2011 (Florence); Member of the Congress Host Committee, FENS2014 (Milan).

▪ Honors

15 February 2019: Innovation 4.0, First prize for Research and University, A&T Fair, Torino

C. Selected Peer-reviewed Publications (*15 best peer-reviewed publications*)

1) Schellino R, Boido M, Borsello T, Vercelli A. Pharmacological c-Jun NH(2)-Terminal Kinase (JNK) Pathway Inhibition Reduces Severity of Spinal Muscular Atrophy Disease in Mice. *Front Mol Neurosci.* 2018 Sep 4;11:308.

- 2) Summers MJ, Rainero I, Vercelli AE, Aumayr G., de Rosario H, Monter M, Kawashima R, for the My-AHA Consortium The My Active and Healthy Aging (My-AHA) ICT platform to detect and prevent frailty in older adults: Randomized control trial design and protocol. *Alzheimer's & Dementia: Translational Research & Clinical Interventions* 2018 4:252-262.
- 3) Piras A, Schiaffino L, Boido M, Valsecchi V, Guglielmotto M, De Amicis E, Puyal J, Garcera A, Tamagno E, Soler R, Vercelli A. Inhibition of autophagy delays motoneuron degeneration and extends lifespan in a mouse model of spinal muscular atrophy *Cell Death & Dis*, 2017 Dec 20;8(12):3223.
- 4) Ghibaudi M, Boido M, Vercelli A. Functional integration of complex miRNA networks in central and peripheral lesion and axonal regeneration. *Prog Neurobiol*. 2017 Aug 3. pii: S0301-0082(17)30012-6.
- 5) Faedo A, Laporta A, Segnali A, Galimberti M, Besusso D, Cesana E, Belloli S, Moresco RM, Tropiano M, Fucà E, Wild S, Bosio A, Vercelli AE, Biella G, Cattaneo E. Differentiation of human telencephalic progenitor cells into MSNs by inducible expression of Gsx2 and Ebf1. *Proc Natl Acad Sci U S A*. 2017 Feb 14;114(7):E1234-E1242.
- 6) Boido M, Vercelli A. Neuromuscular Junctions as Key Contributors and Therapeutic Targets in Spinal Muscular Atrophy. *Front Neuroanat*. 2016 Feb 3;10:6.
- 7) Vercelli A, Biggi S, Scip A, Repetto IE, Cimini S, Falleroni F, Tomasi S, Monti R, Tonna N, Morelli F, Grande V, Stravalaci M, Biasini E, Marin O, Bianco F, di Marino D, Borsello T. Exploring the role of MKK7 in excitotoxicity and cerebral ischemia: a novel pharmacological strategy against brain injury. *Cell Death Dis*. 2015 Aug 13;6:e1854.
- 8) Boido M, Piras A, Valsecchi V, Spigolon G, Mareschi K, Ferrero I, Vizzini A, Temi S, Mazzini L, Fagioli F, Vercelli A. (2014) Human mesenchymal stromal cell transplantation modulates neuroinflammatory milieu in a mouse model of amyotrophic lateral sclerosis. *Cytotherapy*. 16:1059-72.
- 9) Tomassy GS, Berger DR, Chen H-H, Kasthuri N, Hayworth KJ, Vercelli A, Seung SH, Lichtman J, Arlotta P (2014) Distinct profiles of myelin distribution along single axons of pyramidal neurons in the neocortex. *Science*, 18: 319-324.
- 10) Cauda F, Geminiani C, Vercelli A. (2014) Anatomical and functional Lateralization of the insular cortex. In "Insula: Neuroanatomy, Functions and Clinical Disorders", Ed. Uddin L., Nova Science Publisher. Pp 67-93.
- 11) Cauda F, Geminiani C, Vercelli A. (2014) Evolutionary appearance of Von Economo's Neurons in the mammalian cerebral cortex. *Front. Hum. Neurosci*. 8:104.
- 12) Innocenti GM, Vercelli A, Caminiti R. (2013) The Diameter of Cortical Axons Depends Both on the Area of Origin and Target. *Cereb Cortex*. Mar 25. [Epub ahead of print] PubMed PMID: 23529006.
- 13) Cauda F, Vercelli A. How many clusters in the insular cortex? *Cereb Cortex*. 2013 Nov;23(11):2779-80.
- 14) Cauda F, Torta DM, Sacco K, D'Agata F, Geda E, Duca S, Geminiani G, Vercelli A. (2013) Functional anatomy of cortical areas characterized by Von Economo neurons. *Brain StructFunct*. Jan;218(1):1-20.
- 15) Franco Cauda, Federico D'Agata, Katuscia Sacco, Sergio Duca, Giuliano Geminiani, Alessandro Vercelli (2011) Functional connectivity of the insula in the resting brain. *Neuroimage* 55: 1. 8-23

D. Research Support

- Ongoing Research Support

European Project Coordinator, Horizon 2020 Eight Framework Programme: MY-AHA (My-Active and Healthy Ageing)
 CRT Foundation
 Associazione Girotondo
 SMArathon foundation

- Completed Research Support

Member (PI) of the European Project NeuroStemcellRepair, Seventh Framework Programme of the European Union
 Member (PI) of the European Project Stressprotect, Fourth Framework Programme of the European Union
 Local unit PI for five national PRIN funding projects
 Local unit PI for two projects funded by the Ministry of the Health (finalized research)
 Responsible of many projects funded by banking foundations (Compagnia di San Paolo, Cassa di Risparmio di Torino, Cassa di Risparmio di Biella, Cassa di Risparmio di Cuneo)
 Responsible of many research projects founded by the Piedmont Region