

Curriculum Vitae

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Personal information

First name(s) / Surname(s) **Andrea Guzzetta**

Address(es)

Telephone(s)

Fax(es)

E-mail

Nationality

Date of birth

Titles MD, PhD, Child Neurologist and Psychiatrist

Biosketch

Andrea Guzzetta is Associate Professor at the University of Pisa, Italy. He is Head of the UOS Unità per le Disabilità Gravi dell'Età evolutiva and Head of SMILE research Lab of the Stella Maris Scientific Institute in Pisa. He is Senior Tutor of the General Movements Trust since 2009.

His main research has focused on the effects of early brain damage on the development of cortical functions and the underlying neuroplastic mechanisms, with the final aim to improve early intervention paradigms and outcomes. In his still relatively short research career he has provided some significant contribution to a number of research questions in the area, thanks to his compound training experiences in some of the most productive centres in the field, including the Hamner Smith Hospital and the Visual Development Unit in London (Great Britain), the Department of Child Neurology in Tuebingen (Germany) and the Queensland Cerebral Palsy and Rehabilitation Research Centre (QCPTRC), The University of Queensland, in Australia.

Prof Guzzetta received the prestigious Heinz Precht Award for Developmental Neurology in 2012.

Work experience

Dates 18/12/2016 - Current

Position held Associate Professor

Employed by University of Pisa - Department of Clinical and Experimental Medicine

Dates 01/01/2019 - Current

Position held Director of the UOS Unità per le Disabilità Gravi dell'Età Evolutiva

Employed by Fondazione Stella Maris, Pisa, Italy

Dates 01/01/2011 - Current

Position held Director of the Infant Neurology Section
Director of the SMILE Lab

Employed by Fondazione Stella Maris, Pisa, Italy

Dates 01/03/2008 - Current

Position held Senior Tutor of the General Movements Trust

Dates 18/12/2013 - 17/12/2016

Position held Assistant Professor
Employed by University of Pisa – Department of Clinical and Experimental Medicine

Dates 01/07/2009 - 10/12/2010
Position held Senior Research Fellow
Employed by University of Queensland, Brisbane, Australia

Dates 01/04/2007 - 30/06/2009
Position held Consultant neurologist at the NICU, Pisa University Hospital
Researcher at the MRI Lab
Researcher at the Neurology Section
Employed by Fondazione Stella Maris, Pisa, Italy

Education and training

Dates 01/01/2001 - 31/12/2004
Title of qualification awarded PhD in Basic and Developmental Neuroscience
Principal subjects Development of the human nervous system after early brain damage: maturation and integration of motor and visuo-perceptual functions
Organisation University of Pisa
Level of international classification ISCED 6

Dates 01/06/2004 - 28/02/2005
Type Research stage
Principal subjects Pediatric functional MRI
Organisation Dept. of Child Neurology, University Hospital of Tübingen, Germany
Advisors: Prof. Ingeborg Krageloh-Mann; Prof. Martin Staudt

Dates 01/01/1997 - 24/10/2001
Title of qualification awarded First Class Honours specialization in Child Neurology and Psychiatry
Principal subjects General Movements as a prognostic tool for the early assessment of congenital arterial stroke
Organisation University of Pisa
Level of international classification ISCED 6

Dates 01/10/1999 - 30/05/2000
Type Research stage
Principal subjects Neonatal Neurology
Organisation Paediatrics Hammersmith Hospital Imperial College, London, UK
Advisors: Prof. Lilly Dubowitz; Prof. Eugenio Mercuri; Prof. Frances Cowan; Prof. Mary Rutherford

Dates 01/10/1999 - 28/02/2000
Type Research stage
Principal subjects Pediatric Neuro-ophthalmology
Organisation Visual Development Unit, London, Department of Psychology, University College, London, UK
Advisors: Prof. Janette Atkinson; Prof. Oliver Braddick

Dates 10/10/1989 - 10/04/1996
Title of qualification awarded First Class Honours degree in Medicine and Surgery
Thesis title Congenital hypothyroidism: correlation between hormonal indexes at birth and neurodevelopmental outcome
Organisation University of Rome "La Sapienza"
Level of international classification ISCED 5

International Awards

2012 Heinz-Precht Award for Developmental Neurology

Main Funded Grants

- Source: Fondation Paralyse Cerebral
Grant Title: Functional, neuroplastic and biomechanical changes induced by early Hand and Arm Bimanual Intensive Therapy Including Lower Extremities (HABIT-ILE) in pre-school children with uni- and bilateral cerebral palsy: a European project
Starting year (duration in months): 2018 (48)
Amount funded (euro): 1.0M
Role: Co-Investigator, Head of WP
- Source: FAS Regione Toscana
Grant Title: IMAGACTMED – Universal Accessibility Systems to the Health System: instruction to patients through 3D representations of the action
Starting year (duration in months): 2017 (24)
Amount funded (euro): 1.0M
Role: Co-Investigator, Head of WP
- Source: Horizon2020: Marie Skłodowska-Curie Actions - Innovative Training Networks (MSCA-ITN)
Grant Title: Brainview - Integrated view on disruptions of early brain development
Starting year (duration in months): 2014 (36)
Amount funded (euro): 3.8M
Role: Co-Tutor
- Source: FONDAZIONE MARIANI (Italy)
Grant Title: R-15-96 - INEED (Italian Network for Early detection and Early intervention in Developmental disabilities): Alliance for best practice in early detection of cerebral palsy
Starting year (duration in months): 2014 (24)
Amount funded (euro): 38K
Role: Principal Investigator
- Source: Fondation Jérôme Lejeune
Grant Title: Mapping cerebral circuits in Down syndrome
Starting year (duration in months): 2011 (30)
Amount funded (euro): 21k
Role: Co-investigator, Head of WP
- Source: R-11-86 FONDAZIONE MARIANI (Italy)
Grant Title: The effect of infant action observation training on the early development of hand reaching and grasping in healthy infants and in infants with asymmetrical brain damage
Starting year (duration in months): 2011 (40)
Amount funded (euro): 150k
Role: Principal Investigator
- Source: GR-2008-1143201 Ministero della Salute (Italy)
Grant Title: Non-invasive tools for early detection of Autism Spectrum Disorders
Starting year (duration in months): 2011 (36)
Amount funded (euro): 1.06M
Role: Co-investigator, Head of WP

Source **DP110104292 Australia Research Council (Australia)**
 Grant Title **Effect of Infant Hand Observation Training on the Early Development of Hand Reaching and Grasping in Healthy Infants and those with Early Brain Damage**
 Starting year (duration in months) 2011 (24)
 Amount funded (euro) 280K
 Role Co-investigator

NOTE He has participated to other 17 projects as collaborator for a total of about 3.35M.

Track record in summary:

Source **Google Scholar 20.04.2019**
 Total publications 261
 H index 36
 i10-index 85
 Total citations 4042

10 Best Scientific Publications

- IF=4.96 Conti E, Milra J, Calderoni S, Pannek K, Shen KK, Pagnozzi A, Rose S, Mazzotti S, Scelfo D, Tosetti M, Muratori F, Cioni G, **Guzzetta A**. Network over-connectivity differentiates autism spectrum disorder from other developmental disorders in toddlers: A diffusion MRI study. *Hum Brain Mapp.* 2017; 17. doi: 10.1002/hbm.23520. [Epub ahead of print]
 This is the first paper to show a connectomic approach to disentangle autism from other neurodevelopmental disorders in toddlers.
- IF=4.33 Conti E, Calderoni S, Gaglianese A, Pannek K, Mazzotti S, Rose S, Scelfo D, Tosetti M, Muratori F, Cioni G, **Guzzetta A**. Lateralization of Brain Networks and Clinical Severity in Toddlers with Autism Spectrum Disorder: A HARDI Diffusion MRI Study. *Autism Res.* 2015; 17.
 This paper shows that advanced tractography methods can detect abnormalities of network lateralization in toddlers with ASD and that the degree of abnormal lateralization correlate with the severity of the symptoms.
- IF=4.57 Conti E, Mazzotti S, Calderoni S, Saviozzi I, **Guzzetta A**. Are children born after assisted reproductive technology at increased risk of autism spectrum disorders? A systematic review. *Hum Reprod.* 2013;28(12):3316-27.
 This review paper shows that there is no evidence that assisted reproductive technology is significantly associated with ASD, although large and high-quality studies are still needed.
- IF=3.51 **Guzzetta A**, D'Acunio MG, Carotenuto M, Berardi N, Bancale A, Biagioni E, Boldrini A, Ghirri P, Maffei L, Cioni G. The effects of preterm infant massage on brain electrical activity. *Dev Med Child Neurol.* 2011;53 Suppl 4:46-51.
 This paper demonstrates for the first time the effects of infant massage in preterm infants as to the maturation of brain electrical activity.
- IF=3.97 Tinelli F, **Guzzetta A**, Bertini C, Ricci D, Mercuri E, Ladavas E, Cioni G. Greater sparing of visual search abilities in children after congenital rather than acquired focal brain damage. *Neurorehabil Neural Repair.* 2011;25(8):721-8.
 This paper shows that children with very early brain lesions to the visual system have different (and more efficient) mechanisms of functional reorganization, as opposed to those with later damage.
- IF=3.51 **Guzzetta A**, D'Acunio G, Rose S, Tinelli F, Boyd R, Cioni G. Plasticity of the visual system after early brain damage. *Dev Med Child Neurol.* 2010;52(10):891-900
 This paper reviews the extensive and complex literature on the neuroplasticity of the visual system outlining the main specificities of the reorganization of a damaged young brain.
- IF=3.51 **Guzzetta A**, Pizzardi A, Belmonti V, Boldrini A, Carotenuto M, D'Acunio MG, Ferrari F, Fiori S, Gallo C, Ghirri P, Mercuri E, Romeo DMM, Roversi MF, Cioni G. Hand movements at 3 months predict later hemiplegia in term infants with neonatal cerebral infarction. *Dev Med Child Neurol.* 2010 Aug;52(8):767-72.
 This is the first paper to suggest that early spontaneous movements of the upper limb have different neurophysiological bases and therefore, when found abnormal, have different predictive value.

- IF=6.75 Guzzetta A, Baldini S, Bancalè A, et al. Massage accelerates brain development and the maturation of visual function. *J Neurosci*. 2009 May 6;29(18):6042-51.
This parallel murine and human model study demonstrates for the first time the effects of an environmental enrichment model in preterm infants as to brain development and visual function maturation.
- IF=4.08 Morronè MC; Guzzetta A, Tinelli F, et al. Inversion of perceived direction of motion caused by spatial undersampling in two children with periventricular leukomalacia. *J Cogn Neurosci*. 2008;20(6):1094-106.
This psychophysics and fMRI study described a new, previously unknown, type of visual disorder associated to bilateral spastic cerebral palsy, consisting in the inverted perception of translational motion stimuli.
- IF=9.98 Eyre JA, Smith, Dabydeen L; Clowry GJ; Petacchi E; Battini R; Guzzetta A; Cioni G. Is hemiplegic cerebral palsy equivalent to amblyopia of the corticospinal system? *Ann Neurol* 2007;62(5):493-503.
This pioneering paper proposed strong evidence for the theory of activity dependent competition in the reorganization of motor function following early brain damage in humans.

**International Conferences
Invited Lectures only
(>2010)**

From Risk to Chance: Advances in Neonatal Neurodevelopment
Tel Aviv, Israel - 18-19 December 2018

Lecture "Early neuroplasticity and Implications for Neurorehabilitation"

Lecture "Activity and Interactivity: two sides of the same coin in very early intervention"

Vth annual meeting of Lithuanian Academy of Childhood Disability

Kaunas, Lithuania - 30 November 2018

Lecture "Cerebral visual impairment in children"

Hof Topics in Cerebral Palsy Research Forum

Sydney, Australia - 5 November 2018

Lecture "The VISIBLE program: a new model of early intervention in infants with cerebral visual impairment"

Joint International Workshop UNDERSTANDING AND PROMOTING CHANGE FROM EARLY TO

COMPLEX SKILLS IN TYPICAL AND ATYPICAL DEVELOPMENT: A CROSS-POPULATION

APPROACH

Bologna, Italy - 10-11 October 2018

Lecture "From early neuroplasticity to early intervention: The model of neonatal brain damage"

The 1st Congress of the Global Children Healthcare Network & Cerebral Palsy Alliance

Changsha City, China - 15 September 2018

Lecture "Early detection of cerebral palsy"

Rehabilitation Symposium 2018

Zurich, Swiss - 13 September 2018

Lecture "Brain Plasticity and opportunities for early assessment and intervention in infants with early brain injury"

Australasian Cerebral Palsy Clinical Trials Network (AusCP-CTN)

Centre for Research Excellence (CRE) Hof Topics in Cerebral Palsy Research Forum

Brisbane, Australia - 9-10 November 2017

Lecture n.1 "New opportunities for Early intervention in infants with early brain injury"

Lecture n.2 "Early Intervention for infants with Cerebral Visual Impairment"

Lecture n.3 "Early detection General Movements update"

International School of Neuroscience "Sir John Eccles" - Workshop 2017

From activity to interactivity: harnessing early adaptive plasticity for intervention in atypical development

Erice, Sicily, Italy - 17 October 2017

Lecture "Activity and interactivity in the early rehabilitation of newborns and infants with brain damage"

European Congress of Magnetic Resonance in Neuropediatrics 14th Meeting

Tübingen, Germany - 8-10 June 2017

Lecture "Reorganization in the visual domain"

CPRN annual meeting 2017
Oslo, Norway – 7 June 2017
Lecture "Early detection of cerebral palsy"

29th EACD Conference 2017
Amsterdam, The Netherlands - 17-20 May 2017
Keynote "From activity to interactivity: finding the active ingredient of very early intervention"

Melbourne University, Pediatric Educational Seminar
Melbourne, Australia – 16 March 2017
Lecture "Early detection and intervention for infants at high-risk of development impairments"

Belgian National Symposium of CP centres 2017
Bruxelles, Belgium – 27 January 2017
Lecture "Neuroplasticity of the young brain: implications for early intervention"

21th Conference of the Association for Child Development and Rehabilitation
Jerusalem, Israel – 8-10 November 2016
Lecture "Impairment of Visual Functions in Infants with Brain Damage: From Early Detection to Early Intervention"

International Summit - Early Intervention: State of the Science
Stockholm, Sweden – 31 May 2016
Lecture "State of the Science on Vision Interventions and Future Directions"

8th Biennial Conference of the Australasian Academy of Cerebral Palsy and Developmental Medicine
Adelaide, Australia – 30 March - 2 April 2016
Lecture "Behavioural assessment of visual functions in infants with brain lesions"

Early intervention: the power of parenting and practice - early intervention in the light of the ICF-CY
Groningen, the Netherlands - 7-9 April 2016
Lecture "Brain mirror properties in infancy and implications for early neurorehabilitation"

Nationwide Children's Hospital - Neonatal Grand Rounds Presentation
Columbus, Ohio, USA – 5 August 2015
Lecture "Brain plasticity following congenital lesions: implications for early neurorehabilitation"

International Conference of the European Academy of Childhood Disability
Copenhagen, Denmark – 27-30 May 2015
Lecture "Can we make use of critical periods for intervention in children with early brain damage?"

International Conference Non-Invasive tools for early detection of autism spectrum disorder
Rome, Italy – 16-17 October 2014
Lecture "Infant motor behaviour and ASD"

International Early Detection and Early Neurorehabilitation in CP Summit:
Vienna, Austria – 1-2 July 2014
Lecture "Vision in Cerebral Palsy"

Mastery of manual skills: recent insights into typical and atypical development of manual ability
Groningen, The Netherlands – 15-17 May 2014
Lecture "Intervention in children with unilateral spastic cerebral palsy: the effect of action-observation training."

7th Biennial Conference of the Australasian Academy of Cerebral Palsy and Developmental Medicine
Cypress Lakes Resort, Hunter Valley - 11-14 March 2014
Lecture "Early Intervention: Working with infants at risk of Cerebral Palsy and their parents"

4th International Cerebral Palsy Conference
Pisa, Italy - 10-13 October 2012
Lecture "Neural plasticity and early intervention in CP infants"

16th World Congress of the International Organization of Psychophysiology
Pisa, Italy – 13-17 September 2012
Invited Lecture "Brain plasticity and early intervention in preterm infants"

6th Biennial Conference of the Australasian Academy of Childhood Disability
Brisbane, Australia – 30 May – 2 June 2012
Lecture "Action Observation training: a new window on the brain for rehabilitation of early brain injury"

Mastery of manual skills: recent insights into typical and atypical development of manual ability
Groningen, The Netherlands – 19-21 April 2012
Lecture "Plasticity of the visual system after early brain damage"

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18th Mediterranean Meeting of Child Neurology in conjunction with the 5th Fred J. Epstein International Symposium on New Horizons in Pediatric Neurology, Neurosurgery and Neurofibromatosis
 Dead Sea, Israel – 18-22 March 2012
 Lecture "Neuroplasticity following perinatal brain damage: insights on very early intervention"

Journées d'étude annuelles du CDI
 Paris, France – 12-13 December 2011
 Lecture "Plasticité cérébrale du système sensori-moteur après lésion cérébrale précoce : cas particulier des membres supérieurs"

Queensland Healthy Hearing Symposium 2010
 SurfAir Marcoola Beach, Sunshine Coast QLD, Australia – 1-3 September 2010
 Lecture "Age-Related Plasticity in the auditory system"

5th Biennial Conference of the Australasian Academy of Cerebral Palsy & Developmental Medicine, Christchurch, New Zealand – 3-6 March 2010
 Lecture "Visual function in children with brain damage and cerebral palsy what's different about the young brain."

Personal skills and competences

Mother tongue(s)
 Self-assessment
 European level (*)
 English
 French

| | Italian | | Understanding | | | | Speaking | | | Writing | |
|---------|---------------------|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--|
| | Listening | Reading | Listening | Reading | Spoken interaction | Spoken production | Writing | Spoken interaction | Spoken production | Writing | |
| English | C2 Proficient user | C2 Proficient user | C2 Proficient user | C2 Proficient user | C2 Proficient user | C2 Proficient user | C2 Proficient user | C2 Proficient user | C2 Proficient user | C2 Proficient user | |
| French | B2 Independent user | B2 Independent user | A2 Basic user | A2 Basic user | A2 Basic user | A2 Basic user | A1 Basic user | A1 Basic user | A1 Basic user | A1 Basic user | |

Pisa, 11 febbraio 2019

