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Research Master in Cognitive and Clinical Neuroscience

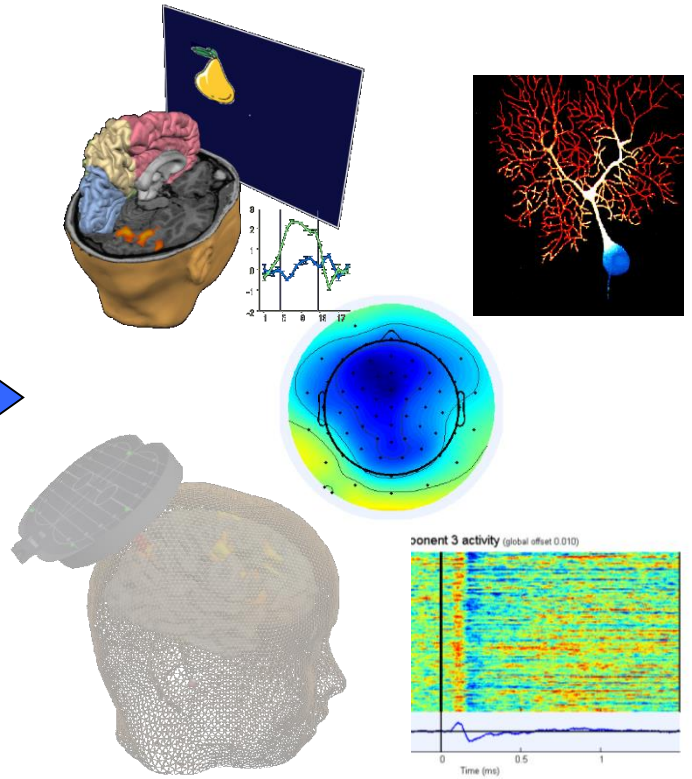
Cognitive Neuroscience Specialisation

Giancarlo Valente

Specialisation Coordinator

KEUZEGIDS TOP RATED PROGRAMME Masters 2019

Cognitive Neuroscience



Interdisciplinary field: psychology, biology, bioengineering, mathematics, physics, computer science …

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I. Perception, cognition & behaviour

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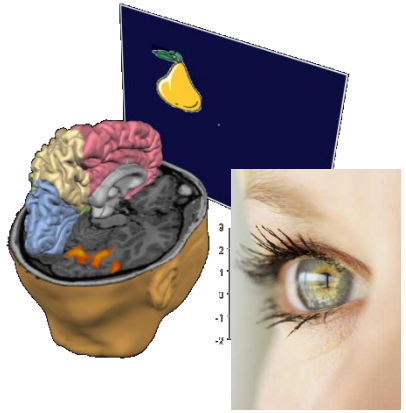
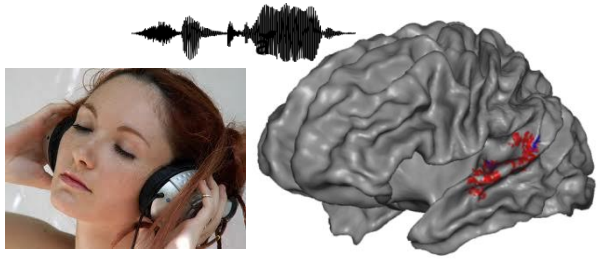
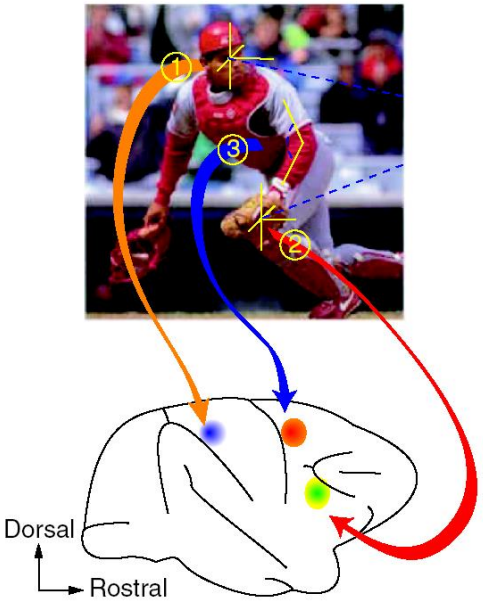


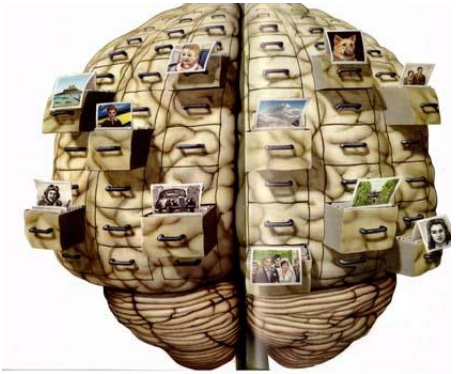
1. Visual Perception & Attention



2. Audition, Language & Cross-modal integration



3. Integration of Sensory & Motor Systems



4. Memory & Learning

5. Translational Neuroscience

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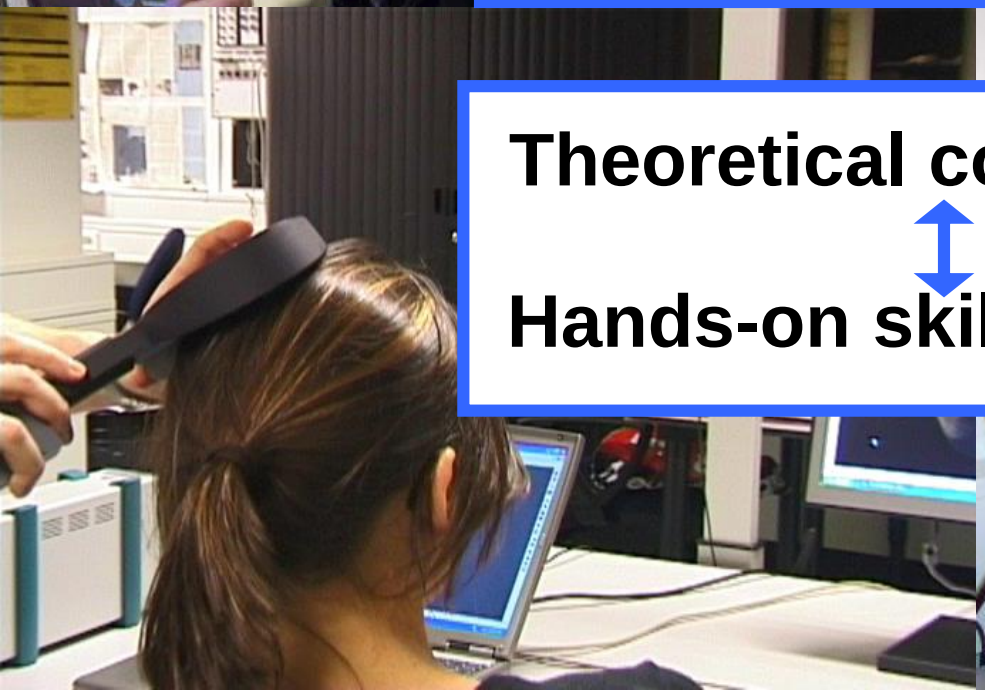
II. Methods & applications of neuroimaging techniques

1. functional MRI (2x)
2. MRI/DTI
3. EEG/MEG
4. TMS



Theoretical core courses

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Hands-on skills trainings

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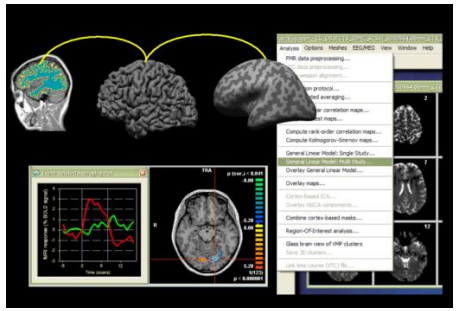
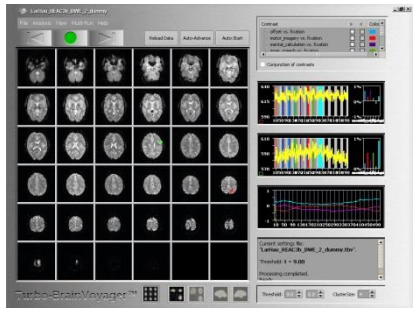
III. Academic and research skills

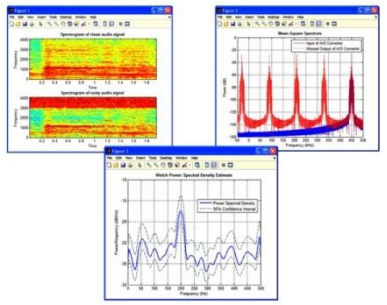
All RM tracks

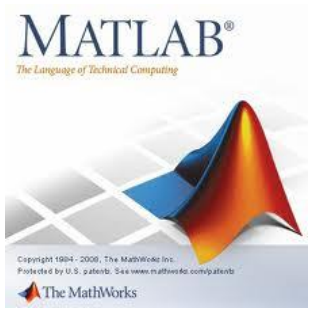
Presentation and writing skills, statistics

Cognitive Neuroscience









Extensive training in experimental design, EEG/fMRI signal analysis, basic maths

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CN perspectives I: Clinical applications

TMS induced brain plasticity
→ guiding brain recovery after stroke

Alexander Sack

Cortical mechanisms of Auditory Scene Analysis
→ intelligent hearing aids

Elia Formisano

Real-time fMRI & Neurofeedback
→ treatment of depression, Parkinson
→ motor-independent communication with locked-in patients

Rainer Goebel

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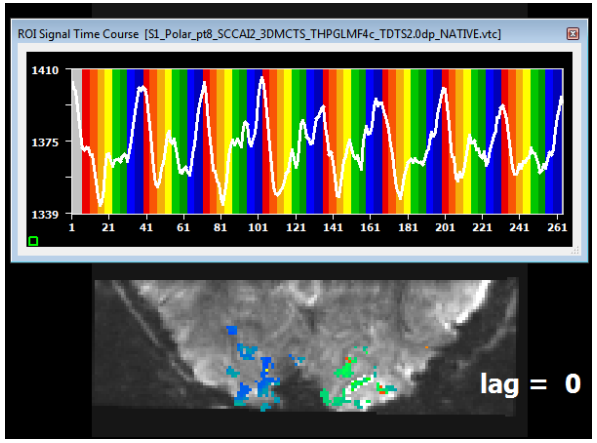
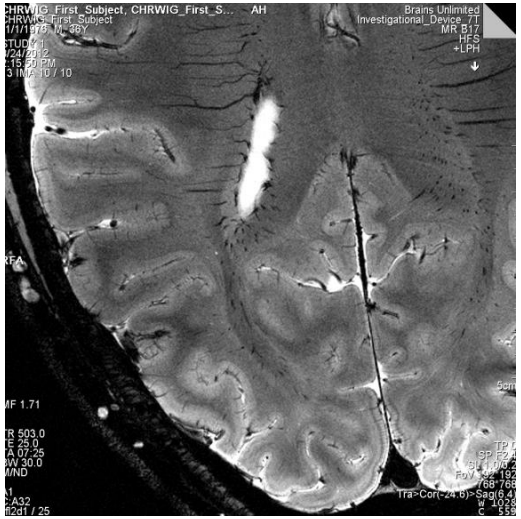
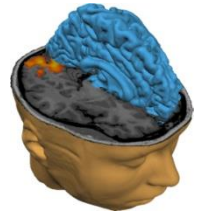
CN perspectives II: Ultra high-field MRI



brains unlimited



Own research possibilities



- ***Research Electives*** **and** ***Grant Writing***

- **Research Internship** (~8 months)

  - excellent possibilities within CN group

  - and in one of many excellent laboratories within our large network of national and international collaborations (*for examples see website).*

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Examples Internships CN

Matteo Bastiani, FPN:
Development of high resolution fiber tracking (DTI) methods

Jan Zimmerman, University of Minnesota, USA:
Direction selective neural columns in human V5 measured at 7T fMRI

Kiki vd Heijden, FPN:
Spatial audition in virtual reality & fMRI

Danique Jeurissen, Harvard Medical School, Boston, USA:
Brain connectivity network underlying moral judgment

Isabelle Habes, University of Cardiff, UK:
Treating depression using fMRI neurofeedback

Annette Giani, University of Würzburg, Germany:
Treating Tinnitus with TMS

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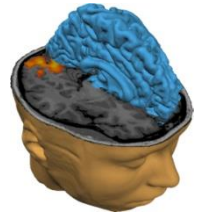
Career perspectives



Optimal preparation for:

- **fundamental brain research** in academic setting
- using neuroimaging techniques in **applied/clinical research** settings (see CN perspectives I)
- **biomedical industry**, *e.g.,* BrainsUnlimited
  (see CN perspectives II)

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CN staff @ Maastricht Brain Imaging Center













More information, Questions?

- CN alumni & current students
- CN coordinator: Giancarlo Valente

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