



**gipsa-lab**

GIPSA-lab, Speech and Cognition Department  
PCMD Team (Speech Perception, Control,  
Multimodality and Dynamics)  
Université Grenoble Alpes / CNRS (Centre  
National de la Recherche Scientifique)



## Post-doctoral position in speech production

**Disciplines:** Phonetics, Cognition, Speech pathology, Speech acquisition

**Laboratory:** GIPSA-lab, Grenoble, France

**Supervision:** Maëva Garnier

**Duration:** 1 year (starting from March 2018, at the latest from October 2018)

**Contact:** [maeva.garnier@gipsa-lab.grenoble-inp.fr](mailto:maeva.garnier@gipsa-lab.grenoble-inp.fr) / +33 4 76 57 50 61

**Application deadline:** 31<sup>st</sup> of January 2018

### Scientific context and objectives of the post-doctoral position:

The ANR project StopNCo deals with the characterization and understanding of the physiological efforts and the gesture coordination in the production of stop consonants (/p/, /t/, /k/, /b/, /d/ or /g/)<sup>1</sup>. These speech sounds are of particular interest for the study of speech motor control, as they require a precise coordination of breathing, laryngeal and articulatory gestures in their force and timing. That coordination can dysfunction in several speech disorders (stuttering, dysarthria, dysphonia, myotonic dystrophy, ...).

Four main questions are addressed in the project:

1. Which acoustic features are crucial for the intelligibility of stop consonants?
2. Which coordination of breathing, laryngeal and articulatory gestures enables the variation of these acoustic features, with what extent of physical constraints vs. speaker-specific control?
3. How does this control develop normally in children and dysfunction in some of them?
4. How the coordination of speech gestures can vary in efficiency (i.e. in the ratio between segment intelligibility and physiological efforts spent in their production)?

The project started in 2015 and has already given rise to several studies, in particular to a Ph.D dealing with the development of methods to measure articulation efforts, and with the modeling of stop consonant production in healthy adult speakers (2<sup>nd</sup> question).

➡ Based on these methodologies and first results, the post-doctoral researcher will come at the end of the project to conduct some research on stop consonant production in children (normal or atypical speech development) or in adults with a speech disorder (stuttering, parkinsonian dysarthria, myotonic dystrophy, ...)

### Profile and scope of the position:

We are seeking an open-minded junior research fellow, coming from either an engineering background (electronics, biomechanics, acoustics) or a human sciences background (phonetics, cognitive sciences), with a previous experience in behavioural science, speech science, experimental phonetics, speech production

<sup>1</sup> see [http://www.agence-nationale-recherche.fr/en/anr-funded-project/?tx\\_lwmsuivibilan\\_pi2%5BCODE%5D=ANR-14-CE30-0017](http://www.agence-nationale-recherche.fr/en/anr-funded-project/?tx_lwmsuivibilan_pi2%5BCODE%5D=ANR-14-CE30-0017)

studies (e.g., with EMA or ultrasound), child studies, or clinical phonetics; and experience in sophisticated methods of data annotation and analysis (Praat, Matlab, Statistical analysis, ...). The successful applicant will have an experimental profile and will be relatively autonomous with data acquisition and analysis.

### **Working conditions:**

The work will be performed within a multidisciplinary group in GIPSA-Lab Grenoble, associating specialists in speech and gesture communication, cognitive processes, signal processing and machine learning (partners of the project: Pascal Perrier, Anne Vilain, Marion Dohen, Christophe Savariaux, Franck Quaine), in collaboration with speech therapists and with the referring center for speech and learning disorders of Grenoble's hospital. The GIPSA-lab is a world-leading research group in the domain of speech production and perception, has state-of-the-art laboratories and equipment, numerous doctoral students, research and support staff, and regular scientific meetings and seminars. Grenoble is located in the French Alps, close to many ski resorts, and at a 3 hours train distance from Paris. It is ranked as one of the best French city to study in, for both the quality of its university and the living conditions.

Net income (including medical protection): 2000 euros/month

### **Application procedure and criteria**

The post-doc position is open for a one-year period, starting ideally from March 2018, at the latest from October 2018.

Candidates should send as soon as possible a short email to Maëva Garnier ([maeva.garnier@gipsa-lab.grenoble-inp.fr](mailto:maeva.garnier@gipsa-lab.grenoble-inp.fr)) to declare their intention to apply to this position. Then they must send a full application file in the next weeks, and before the 31<sup>st</sup> of January. This application file will include:

- an extended CV
- a list of publications
- a letter explaining why they are interested in the project, what their general interests are, how their profile matches with this position, and how this position would fit into their future plans for the development of their own career.
- a short research proposal (1 page) for a study that fits the StopNCo project and that they could conduct during this one-year contract.
- a list of two names (with email addresses) for recommendations about their applications.

Preselected candidates will be interviewed in February. The final selection should occur before mid-February.