Entering French research organisms

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(Laboratoire de Recherche en Informatique)

Journée après thèse
ED EOBE et STIC - Université Paris-Saclay

– CV –

2005-2008	Computer Science and Applied Mathematics Ingénieur Ensimag Grenoble	
2007-2008	Master 2 Research – Modeling biology UJF Grenoble	
2008-2011	PhD – Bayesian statistics for population genetics TIMC-IMAG, Université de Grenoble *Olivier François, Michael Blum*	
2012-2014	Postdoc - Theoretical popgen. & paleogenomics University of California Berkeley, USA *Montgomery Slatkin*	
2014-2015	Postdoc – Genomes and human demography Muséum National d'Histoire Naturelle, Paris *Frédéric Austerlitz*	
From Oct. 2015	CR2 CNRS, *recruited by CID 51* Laboratoire de Recherche en Informatique Bioinfo	  

14 publications (5 as first author)

Research: reconstructing the past from genomic data

PhD

- Bayesian statistics
- Population genetics (+ecology)

Postdocs

- Theoretical population genetic
- Handling large-scale data (complete genomes)
- Paleogenomics (ancient DNA)

Research project

- Developments for massive genomic data and integration of temporal ancient DNA – approximate Bayesian methods & machine learning → inference of population demography

Being a researcher

- Advancing knowledge on topics you like
- Taking up challenges
- Interacting with people all around the world
- Lot of freedom (might be hard to handle)

- Leading projects, mentor students
- Applying for grants
- A bit of teaching (not mandatory)

But also:

- Supervising a team
- Participating in technology transfer, ...

Know your options!

- Find out about all the possibilities in your field (read, chat, ask around...)

- Employers/Institutes (each has its specificities)
  - CNRS
  - INRIA
  - INRA
  - CEA
  - Inserm
  - Pasteur
  - IFREMER
  - …

- Positions
  - Researcher (CR2, CR1)
  - Research engineer (IR, …)

- Do NOT hesitate to apply to several positions

National Center for Scientific Research
CNRS

CNRS

- Wide range of topics. 10 institutes:

  humanities and social sciences, mathematics, physics, chemistry, particle and high energy physics, engineering, biology, information sciences, earth sciences and astronomy, ecology and the environment

- ~ 1200 labs hosting CNRS researchers (France+international)

- Funding: mostly government, some CNRS income (from contracts, patents,...)

CNRS - Sections

- 41 sections

  06 Information Science: computer science fundamentals, calculi, algorithms, models and applications (INS2I)

  07 Information Science: processing, integrated device-software systems, robots, control, images, contents, interactions, signal and languages (INS2I, INSIS)

  08 Micro- and nanotechnologies, micro- and nanosystems, photonics, electronics, electromagnetism, electrical energy (INSIS)

  CNRS institute

- + 5 interdisciplinary commissions
  50 – 54

  51 : Modeling and analysis of biological data and systems: approaches through computer science, mathematics, and physics

  54 : Experimental methods, concepts and instrumentation in materials science and life science engineering

CNRS - Application

- Competitive admission process starting in December
- Do not need to be a French citizen
- Application (written and the later interview) in French or English
- No age limit
- CR2: unlimited trials ; CR1: limited to 3 trials (4 in some cases)

  (leadership, organizational responsibilities, ...)

  Do you fit more as a CR2 or CR1? you can apply to both

- *IR: research engineer (another competition)*
- ***You can apply to multiple positions and sections***

All the criteria are online
*https://**www.dgdr.cnrs.fr**/drhchercheurs/concoursch/informer/default-en.htm*

Competition 2017

Example

Section n°07 : Information sciences: signals, images, languages, automatic control, robotics, interactions, hardware-software integrated systems

N°07/01 - 6 Senior scientists 2nd class. Competitive entry is open for research themes pertaining to Section n°07.

2 CR1

N°07/02 - 2 Associate scientists 1st class. Competitive entry is open for research themes pertaining to Section n°07.

N°07/03 - 4 Associate scientists 2nd class.
Among whom:
- 1 preferably with a research programme devoted to « Cognitive robotics or bio-inspired robotics or robotics design »,
- 1 preferably with a research programme devoted to « human-computer interaction, virtual reality »,
- 1 preferably with a research programme devoted to « problems related to multimodality and heterogeneity in automatic control or signal and image processing ».

5 CR2

N°07/04 - 1 Associate scientist 2nd class. On the following theme « Signal and image processing in Neuroscience (Electrophysiology and/or Cerebral imaging)". Candidates must develop a research program to be executed in a CNRS research unit depending from the Institute of Biological Sciences (INSB)

Some positions are quite specific (constraint on topic, institute, ...)

Competition 2017

Example

Section n°08 : Micro- and nanotechnologies, micro- and nanosystems, photonics, electronics, electromagnetism, electrical energy

N°08/01 - 9 Senior scientists 2nd class. Competitive entry is open for research themes pertaining to Section n°08.

N°08/02 - 1 Associate scientist 1st class. Competitive entry is open for research themes pertaining to Section n°08.

N°08/03 - 5 Associate scientists 2nd class. 5 Associate scientists 2nd class including one as a priority on the following theme "Photonics" and for this theme the candidate will carry out his research in one of the INP main laboratories.

1 CR1, 5 CR2

Interdisciplinary committee n°51 : Modeling and analysis of biological data and systems: approaches through computer science, mathematics, and physics

6 CR2

And so on... ~300 researchers to be recruited in 2017 (junior+senior)

You have a better chance if

- You did postdoc... (true for most of the fields)
- … not in your PhD lab, better if abroad
- Good publication record + citations + talks in international conferences
- Collaborations with different labs (in France and international)
  // published by yourself

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Warning

- Highly competitive
- Work and luck play a role
- Do not loose faith in you !

Prepare your application

- Start early!
- Read carefully instructions of each section, they vary
- Find at least one lab willing to host you
  some sections ask for two or three labs
  NOT your PhD lab (depends on the CNRS institutes)
- cv, past activities, research project
- Have a webpage/website (useful for postdoc application, and for everyday visibility as well)

Research proposal

- Your very own project
- Make use of your past experiences and skills
- Combine them to create something new and ambitious
- Should bring something to the field

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Writing

- Define short-term and long-term goals
- State clearly: challenges / your objectives / methods
- You ◄► hosting lab You ◄► community (collaborations)
- Think about the future

Interview

Short: 10/15 minutes presentation + 10/15 questions

Presentation: find a balance cv / past activities / project

- Principal past contributions, their originality and relevance
- Research project: main topics, methods you plan to use, how it fits in the lab, …
- Committee is diverse (not all experts)
  introduce the scientific context

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- Practice a lot, old labs, postdoc lab, hosting lab, …
- different specialties → different questions

Take-home message

- Try to think about the future when you choose your postdoc
- Know your options
- Talk about your future plans with colleagues
- Whole application requires time and energy
  → stay confident
- Ad :
  2nd Junior Conference for Data Science and Engineering
  Saclay, 14-15th September
  Master, Engineer, PhD Students
  → Networking!

Useful links

- Guidelines for “Concours CNRS”

  https://www.dgdr.cnrs.fr/drhchercheurs/concoursch/pdf/Guide-EN.pdf

  http://www.dgdr.cnrs.fr/drhchercheurs/concoursch/informer/default-en.htm

- Details about all CNRS sections

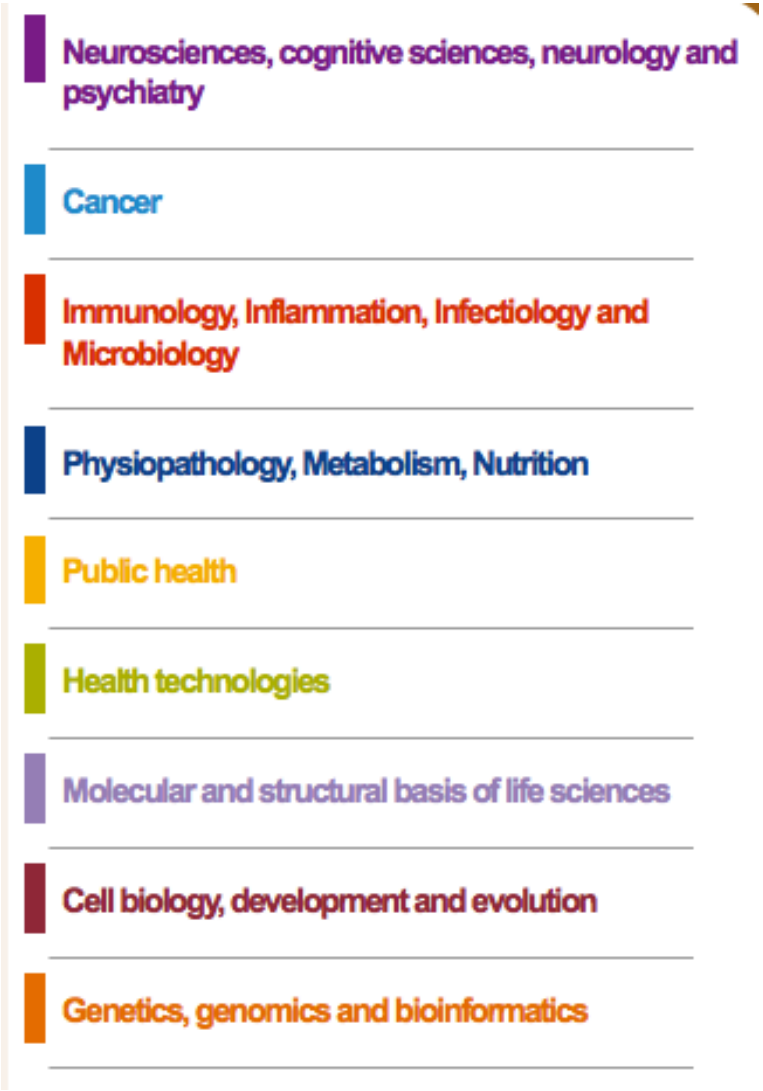
  http://www.cnrs.fr/comitenational/sections/intitsec.php

Other organisms

- INRIA
  - Applied Mathematics, Computation and Simulation
  - Algorithmics, Programming, Software and Architecture
  - Networks, Systems and Services, Distributed Computing
  - Perception, Cognition and Interaction
  - Digital Health, Biology and Earth
- CEA
  - Controlled thermonuclear fusion
  - Climate and Environmental sciences
  - Chemistry and radiation-matter interactions
  - Physical sciences
  - Nanosciences
  - Cryotechnologies
  - Radiobiology and nuclear toxicology
  - Applying nuclear-baser technologies to health

Other organisms

- Inserm



- INRA
  - improving the performance of all facets of agricultural systems
  - mediating and adapting to the impacts of climate change
  - using biomass in chemical, energy, and bioeconomic applications
  - developing sound, sustainable food-production systems

Agroecology, systems biology