

NICCOLÒ ARECCO

Postdoctoral researcher

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EXPERIENCE

Postdoc CRG, Genome Biology Unit

Oct 2023 – ongoing Barcelona, Spain

- Splicing assay development for small molecules screening.
- Genome engineering of the splicing machinery core components.
- Supervision of one PhD student and coordination of an ERC Synergy Grant with four other groups.
- Benchmarking alternative splicing bioinformatic tools

Postdoc CRG, Systems & Synthetic Biology Unit

May 2019 – Oct 2023 Barcelona, Spain

- EMBO Long-term fellow and Juan de la Cierva fellow.
- Very strong experience in alternative splicing field.
- Discovered a novel regulatory mechanism of the epigenetic silencer PRC2.
- Single Cell, Allele-Specific, Nascent RNA-seq analysis.
- Established proteomics protocol & analysis for histones PTMs.
- Development of a CRISPR-screening platform.
- Projects design & grant writing; supervision of master students.

PhD Student EMBL, Genome Biology Unit

Sep 2014 – Dec 2018 Heidelberg, Germany

- Gained independence and developed a project from scratch.
- Shed light on the molecular mechanism of action of *SETD5* and its involvement in Autism Spectrum Disorder.
- Acquired knowledge in the fields of neuroscience, epigenetics, genomics, and computational biology.
- Engineered mammalian cell lines with CRISPR/Cas9 methods.
- Established protocols for ChIP-seq of chromatin associated factors, biochemical assays, and mass spectrometry.
- Trained 2 interns who subsequently entered competitive PhD programmes.

Master student University of Turin, Molecular Biotechnology

Nov 2012 – Jul 2014 Torino, Italy

- Gained experience with mass spectrometry imaging and magnetic resonance imaging in mouse models.

Summer intern University of Liverpool, Dept. Biochemistry

Jun 2013 – Sep 2013 Liverpool, United Kingdom

- Developed a mass spectrometry method for enriching extracellular matrix proteins from muscular dystrophy tissues.
- Contributed to a patent.

MAJOR PUBLICATIONS

- Arecco N.**, Mocavini I. *et al.*
“Alternative splicing decouples local from global PRC2 activity”. *Mol. Cell* (2024)
- Deliu E., **Arecco N.** *et al.*
“Haploinsufficiency of the intellectual disability-gene *SETD5* disturbs developmental gene expression and cognition.” *Nature Neuroscience* (2018)

EXPERTISE

Functional Genomics Epigenetics
Proteomics Chromatin Regulators
Bioinformatics Structural biology
Vertebrates EvoDevo

ChIP-seq RNA-seq PRO-seq
IP-MS Histone PTMs-MS
scRNA-seq Allelic expression

Genome engineering CRISPR
Stem cells differentiation
Neurodevelopment Cell culture
Pluripotency Confocal microscopy
FACS IF PRC WB Cloning

Nextflow pipelines AlphaFold2
R package development FoldX
RNA velocity Smart-seq

SOFTWARES

R: Near-daily use since 8+ years
Bash/Unix: Regular use since 8+ years
Python: Intermediate level
GitHub: Regular use since 3+ years
ImageJ: Good knowledge
Adobe Illustrator: Advanced use

EDUCATION

PhD in Epigenetics and Neuroscience, Summa cum Laude

[EMBL & Ruprecht-Karls-Universität Heidelberg](#)

📅 Sep 2014 – Dec 2018 📍 Germany

M.Sc. in Molecular Imaging, Summa cum Laude

[Università degli Studi di Torino](#)

📅 Oct 2012 – Jul 2014 📍 Italy

B.Sc. in Molecular Biotechnology

[Università degli Studi di Torino](#)

📅 Oct 2009 – Sep 2012 📍 Italy

AWARDED FUNDINGS & PRIZES

- Juan de la Cierva Postdoctoral Fellowship
- EMBO Long Term Postdoctoral Fellowship
- CRG Postdoc Grant 2021 (€10.000)
- CRG Postdoc Grant for Masters Students 2022 (€3.000)
- Best poster EMBL Chromatin & Epigenetics 2023 conference.

ORAL PRESENTATIONS AT MEETINGS

- External seminar - Stony Brook University, USA, Oct 22
- Annual Proteomics Symposium CRG, Nov 22 (Invited)
- EMBL Chromatin & Epigenetics conference, May 23 (Selected)

ACADEMIC ACTIVITIES

- *Ad hoc* referee for Nature, NSMB, EMBO Journal, Development, NAR Genomics and Bioinformatics, and International Journal of Cancer.
- ERC Starting Grant LS3 2024 Remote Referee.
- CRG PhD selection interviewing panel member (Autumn 2022, Spring 2023, Spring 2025).
- EMBL main PhD students representative 2016-2018.

COURSES & TRAINING

- EMBO "Laboratory Leadership for Postdocs" - June 2022
- PRBB "Sharpen your Reasoning Skills" - October 2022
- PRBB "Improve you science talk" - March 2023
- Yellow Research "Writing a Competitive ERC Grant" - July 2023

VOLUNTEER ACTIVITIES

- 📅 Mar 2020 - Jul 2020 📍 Barcelona, Spain
 - Member of the *Orfeu programme*, a project led by the govt. of Catalonia to mass test citizens and stop SARS-CoV-2 pandemic.
- 📅 Jun 2021 - Jan 2023 📍 online
 - Euraxess mentor of 2 PhD students interested in pursuing an academic career in EU. Career and funding applications advice.

PUBLICATIONS

Listed chronologically, * denotes co-first.

1. Rogalska M., ..., **Arecco N.** *et al.* "Transcriptome-wide splicing network reveals specialized regulatory functions of the core spliceosome". *Science* (2024)
2. Bhuiyan T., Mendoza P., **Arecco N.** *et al.* "TAF2 condensation in nuclear speckles links basal transcription factor TFIID to RNA splicing". *bioRxiv* (2024) (under review in *Mol. Cell*)
3. **Arecco N.***, Mocavini I.* *et al.* "Alternative splicing decouples local from global PRC2 activity". *Mol. Cell* (2024)
4. Severino J.* , Bauer M.* , ..., **Arecco N.** *et al.* "Controlled X-chromosome dynamics defines meiotic potential of female mouse in vitro germ cells". *The EMBO Journal* (2022)
5. Kasper E-L.* , Hwang I-Y.* , ..., **Arecco, N.** *et al.* "The neurodevelopmental disorder-linked PHF14 complex that forms biomolecular condensates detects DNA damage and promotes repair". *bioRxiv* (2021)
6. Ghose R., Aranguren-Ibáñez Á. **Arecco N.** *et al.* "From research to rapid response: mass COVID-19 testing by volunteers at the Centre for Genomic Regulation". *F1000Research* (2020).
7. Deliu E.* , **Arecco N.*** *et al.* "Haploinsufficiency of the intellectual disability-gene SETD5 disturbs developmental gene expression and cognition." *Nature Neuroscience* (2018)
8. **Arecco N.*** *et al.* "Elastase levels and activity are increased in dystrophic muscle and impair myoblast cell survival, proliferation and differentiation." *Scientific Reports* (2016)

PATENT

- **Muscle regeneration** (as contributor).
PCT Num: WO2017194975A1
Filing date: 15 May 2017