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Frederic Chaux

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Address: Institut Ruđer Bošković, Bijenička cesta 54, 10000, Zagreb, Croatia (Work)

WORK EXPERIENCE

13/11/2022 – CURRENT Zagreb, Croatia
PROJECT MANAGER INSTITUT RUĐER BOŠKOVIĆ

Research topic: Genomics and Bioenergetics in Marine Phytoplankton
Eco-physiology of Coccolithophores, Laboratory for Marine and Atmospheric Biogeochemistry
Division for Marine and Environmental Research (ZIMO)

Research design, experiment, analyses, reporting
Main specialized skills involved: photospectrometry, DNA sequencing, bioinformatical analyses
Funding acquisition (Marie Skłodowska-Curie Actions Postdoctoral fellowship)
Field trip: Isolation of novel phytoplankton strains (Šibenik, May 2023)

01/09/2019 – 31/10/2022 Paris, France
POSTDOCTORAL RESEARCHER CNRS/SORBONNE UNIVERSITE

Research topic: Chromosome Instability and Detection of Large-scale Mutations
Xu Group: Telomere and Genome Stability,
Laboratory of Computational and Quantitative Biology

Research design, experiment, analyses, reporting
Main specialized skills involved: molecular biology, Nanopore sequencing, bioinformatical analyses
Teaching (practical courses and bioinformatics for bachelor students, 2020, 2021)
Training: Genomics bioinformatics (CNRS)

15/05/2017 – 14/05/2019 Paris, France
POSTDOCTORAL RESEARCHER INSTITUTE OF PHYSICO-CHEMICAL BIOLOGY

Research topic: Light stress and bioenergetics in algae
Laboratory for Chloroplast Biology and Light-sensing in Microalgae (Falciatore lab)

Research design, experiment, analyses, reporting
Main specialized skills involved: biochemistry, molecular biology, spectrophotometry
Teaching (practical courses for Master 1 students, 2017, 2018)

01/12/2013 – 17/04/2017 Cadarache/Marseille, France
PHD STUDENT CEA/AIX-MARSEILLE UNIVERSITE

Research topic: Photosynthesis performance and photoprotection
Laboratory of Biology and Bioenergetics in Bacteria and Microalgae (Peltier lab)
PhD supervisors: Dr G. Peltier, Dr X. Johnson

Research design, experiment, analyses, reporting
Main specialized skills involved: genetics, spectrophotometry
Awards: Young researcher speaker award, Satellite meeting on Photosynthetic electron and proton transport, Arnhem (Netherlands), 2016

01/10/2010 – 30/09/2013 Maule, France
PLANT BREEDING ASSISTANT (APPRENTICESHIP) SECOBRA RECHERCHES

R&D: Implementation of Hybrid Barley lines

Research design, sampling and phenotyping, analyses
Main specialized skills involved: in vitro cell culture, farming, statistics

EDUCATION AND TRAINING

01/12/2013 – 17/04/2017 Marseille, France
PHD IN BIOLOGY (PLANT BIOLOGY) Aix-Marseille Universite

Thesis Interplay of the mechanisms involved in excess energy dissipation during photosynthesis in the green microalga Chlamydomonas

03/09/2010 – 30/09/2013 Paris, France
LIFE SCIENCE ENGINEER (MSD) AgroParisTech (Paris Institute of Technology for Life, Food and Environmental Sciences)

LANGUAGE SKILLS

Mother tongue(s): **FRENCH**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	C1	C1	C1
CROATIAN	B1	B1	B1	B1	A2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

Digital Skills - Test Results

Information and data literacy	**ADVANCED**	Level 6 / 6
Communication and collaboration	**ADVANCED**	Level 5 / 6
Digital content creation	**ADVANCED**	Level 6 / 6
Safety	**ADVANCED**	Level 6 / 6
Problem solving	**ADVANCED**	Level 6 / 6

Results from self-assessment based on The Digital Competence Framework 2.1

My Digital Skills

Microsoft Office | r script | bash script | samtools (genomics)

ADDITIONAL INFORMATION

PUBLICATIONS

Research IDs
ORCID: 0000-0003-3298-8415
Google Scholar: https://scholar.google.com/citations?user=Ym9LKCYAAAAJ

Link https://scholar.google.com/citations?user=Ym9LKCYAAAAJ

Telomerase-independent survival leads to a mosaic of complex subtelomere rearrangements in Chlamydomonas reinhardtii
– 2023

Chaux F, Agier N, Garrido C, Fischer G, Eberhard S, Xu Z. Genome Research

Chloroplast ATP synthase biogenesis requires peripheral stalk subunits AtpF and ATPG and stabilization of atpE mRNA by OPR protein MDE1
– 2023

Chaux F, Rodrigues-Azevedo M, Jarrige D, Bujaldon S, Caspari OD,..., de Vitry C. The Plant Journal

Paradox of relatively more phospholipids in phytoplankton in phosphorus limited sea – 2023

Gašparović B, Vrana I, Frka S, ..., Chaux F, ..., Godrijan J. Limnology and Oceanography

Architecture and evolution of subtelomeres in the unicellular green alga Chlamydomonas reinhardtii – 2021

Chaux F, O'Donnell S, Craig RJ, Eberhard S, Vallon O, Xu Z. Nucleic Acids Research

Highly contiguous Nanopore genome assembly of Chlamydomonas reinhardtii CC-1690. – 2020

O'Donnell S, Chaux F, Fischer G. Microbiology Resource Announcements.

The role of plastidic trigger factor serving protein biogenesis in green algae and land plants. – 2019

Rohr M, Ries F, Herkt C, Gotsmann VL, Westrich LD, ..., Chaux F, ..., Willmund F. Plant Physiology

Flavodiiron Proteins promote fast and transient O2 photoreduction in Chlamydomonas. – 2017

Chaux F, Burlacot A, Mekhalfi M, Auroy P, Blangy S, Richaud P, Peltier G. Plant Physiology

PGRL1 and LHCSR3 compensate for each other in controlling photosynthesis and avoiding photosystem I photoinhibition during high light acclimation of Chlamydomonas cells.
– 2017

Chaux F, Johnson X, Auroy P, Beyly-Adriano A, Te I, Cuiné S, Peltier G. Molecular plant

A security network in PSI photoprotection: regulation of photosynthetic control, NPQ and O2 photoreduction by cyclic electron flow.
– 2015

Chaux F, Peltier G and Johnson X. Frontiers Plant Science

Preprint: Extraction and selection of high-molecular-weight DNA for long-read sequencing from Chlamydomonas reinhardtii
– 2023
Accepted in Plos One (in press)
Step-by-step on Protocol.io: https://www.protocols.io/view/extraction-and-selection-of-high-molecular-weight-b9pir5ke

Chaux F, Agier N, Eberhard S, Xu Z. BioRxiv

Preprint: Boosting chloroplast ribosome biogenesis by a plastidial DEAD-box RNA helicase is critical for high light acclimation
– 2022
In revision

Djouani-Tahri EB, Nellaepalli S, Auroy P, ..., Chaux-Jukic F, ..., Peltier G. BioRxiv

PhD thesis: Etude des mécanismes de dissipation de l'excès d'énergie au cours de la photosynthèse chez la microalgue Chlamydomonas reinhardtii
– 2017

Chaux F. Theses.fr

Preprint: A transient but very intense mutational burst occurs during the normal development of yeast colonies
– 2023

Agier N, Vittorelli N, Chaux F, Gillet-Markowska A, O'Donnell S, Fischer G, Delmas S. BioRxiv

DRIVING LICENCE

Driving Licence: A1

Driving Licence: B

MANAGEMENT AND LEADERSHIP SKILLS

Research integrity course Epigeum (EMBO)
Score: 90%

Leadership and management course Module 1: Leading oneself (2 days)
Module 3: Teamwork (2 days)

Master student supervision Nov 2023 - Jan 2024: Master 1 student
Feb-July 2020: Master 2 student
Apr-July 2017: Master 2 student (co-supervision)
Feb-July 2016: Master 2 student (co-supervision)

Member of PhD committee (mid-term assessment)

Tutoring March 2018: four high school students (full week)
2010-2015: mathematics for two high school students (2h/week)

COMMUNICATION AND INTERPERSONAL SKILLS

Speaker in international conferences European Phycological Congress, Brest (France), 2023
Advances in Coccolithophore Research, online (Bergen, Norway), 2023
Satellite meeting on Photosynthetic electron and proton transport, Arnhem (Netherlands), 2016
Annual meetings of the French photosynthesis society, Paris (France), 2016

Poster presentation in international conferences European Phycological Congress, Brest (France), 2023
Replication – Recombination – Repair (3R) Meeting, Hyeres (France), 2022
Dynamo Symposium on Evolution, Biogenesis and Dynamics of Energy Transducing Membranes, Paris (France), 2019
Mitochondria and Chloroplasts Gordon Research Conference, Lucca (Italy), 2018
International Congress on Photosynthesis, Maastricht (Netherlands), 2016
Venice School of Italian pure and applied biophysics society SIBPA, Venice (Italy), 2016.
Annual meetings of the French photosynthesis society, Paris (France), 2015, 2016, 2017, 2018, 2019
Alg'n'chem Conference, Montpellier (France), 2014

MSCA-net Widening countries inspiration stories

Link https://msca-net.eu/wp-content/uploads/2023/12/Widening-countries-inspirational-stories_PF_Croatia_Cocco-Next.pdf

CNRS-info: Que trouve-t-on à l'extrémité d'un chromosome ?

Link https://www.insb.cnrs.fr/fr/cnrsinfo/que-trouve-t-lextremite-dun-chromosome-le-cas-dune-petite-algue-verte

Teaching photosynthesis Seminar: Evolution of photosynthesis
Practical courses: molecular biology and biochemistry

Teaching bioinformatics Practical courses: microbiology
Computing courses: genes and genomes

CAREER GAP

15/05/2019 – 31/08/2019
Parental leave

TECHNICAL SKILLS

Spectrophotometry: chlorophyll fluorescence, electrochromic shift

Cell biology: cultivation, growth assays, sampling, conservation

Genetics in Chlamydomonas and barley: crossing, transformation, CRISPR-Cas9 edition

Biochemistry: western blot, membrane purification, isotopic pulse-chase

Molecular biology: PCR, Southern blot, cloning, Nanopore Sequencing

Optical microscopy: fluorescence in situ hybridisation, micro-manipulation