

Plinius Coursus

PhD Program IM2B

Christophe Bernard & Éric Pilet

ED 62 - December 8 2023

Who & Where ?



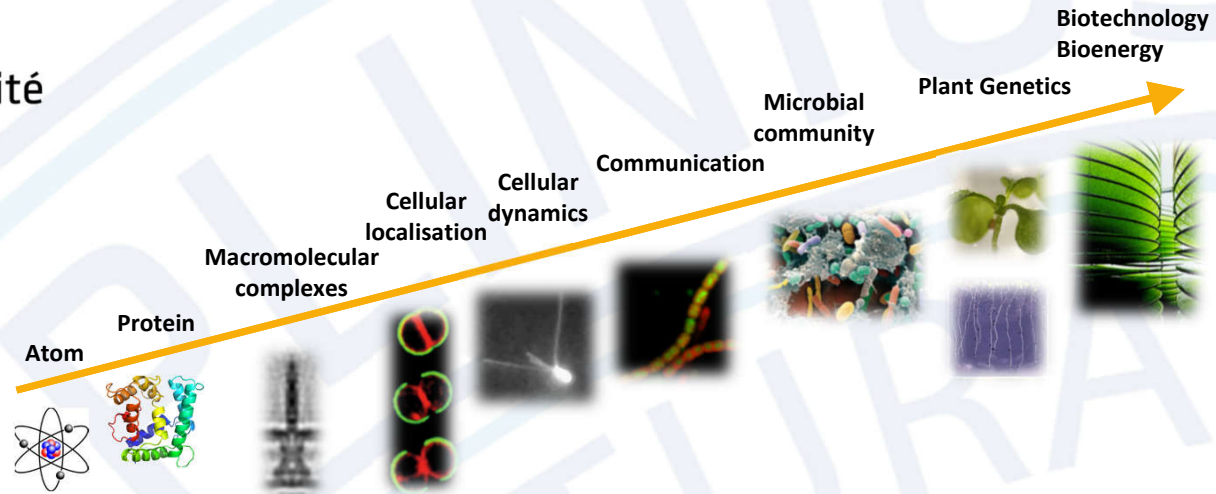
Institut
Microbiologie,
Bioénergies et
Biotechnologie
Aix-Marseille Université



Who & Where ?



Institut
Microbiologie,
Bioénergies et
Biotechnologie
Aix-Marseille Université



- **Ecological:** bioenergy, bioremediation, plant genetic improvement
- **Microbiological:** development of innovative strategies to fight against the proliferation of microorganisms harmful to health and the environment.
- **Biotechnologies:** synthetic biology, bio-sourced chemistry.

Our mission?



150
PhD students



Careers

Autonomy

Internationalization

Professionalization

Customization

Interdisciplinary

3. Practical training provided by the platforms

2. Prepare them for the post-thesis period

1. Structuring student life

Our mission?



150
PhD students



Careers

Autonomy

Internationalization

Professionalization

Customization

Interdisciplinary

3. Practical training provided by the platforms

2. Prepare them for the post-thesis period

1. Structuring student life

JSM3 Association: Sponsor + advice

- Annual congress (May 2024)
- "Apero-Talk" seminars



Our mission?



150
PhD students



Careers

Autonomy

Internationalization

Professionalization

Customization

Interdisciplinary

3. Practical training provided by the platforms

2. Prepare them for the post-thesis period

1. Structuring student life

JSM3 Association: Sponsor + advice

- Annual congress (May 2024)
- "Apero-Talk" seminars

Career presentations

- Dedicated trainings
- "What's next" seminars
- Alumni Congress (2023 & 2025)



Our mission?



150
PhD students



Careers

Autonomy

Internationalization

Professionalization

Customization

Interdisciplinary

3. Practical training provided by the platforms

2. Prepare them for the post-thesis period

1. Structuring student life

- IM2B PhD students
- AMU PhD students



What training is offered?

45 workshops and practical training



Workshops

- **Article writing**
- **Pluridisciplinary proposal writing**
- **From scientific discovery to industry**
- **Management & team project leadership**
- **Scientific oral communication**
 - I French & English oral presentation
 - II Fake news
 - III Video clips
- **Gestion du Stress**



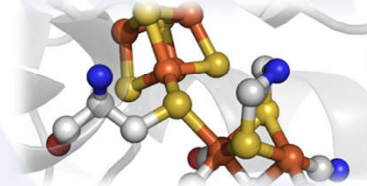
Biophysics-Microscopy

- **Microscopy**
 - Theoretical kit for microscopy
 - Microscopy I basis
 - Super resolution Microscopy
 - Electron Microscopy
- **Biophysics**
 - EPR spectroscopy in life sciences
 - Proteins NMR spectroscopy
 - Crystallization I & II
 - Metaloproteins Design
 - DFT
 - Electrochemistry



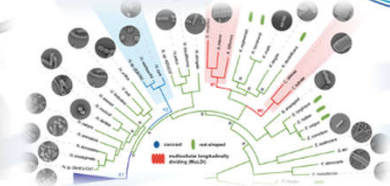
Whole Organisms

- Microfluidics for Microbiologists
- Single Cell Sorting of magnetic microorganisms
- Flow cytometry
- Plant Growth in monitored conditions
- Plant-Microbes interaction



Biochemistry

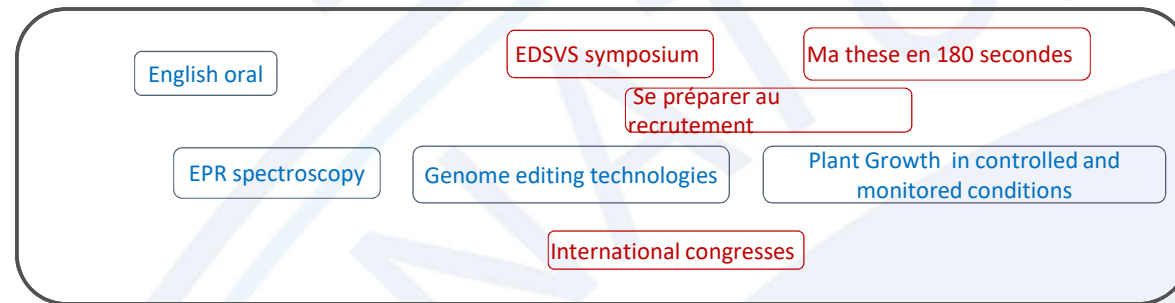
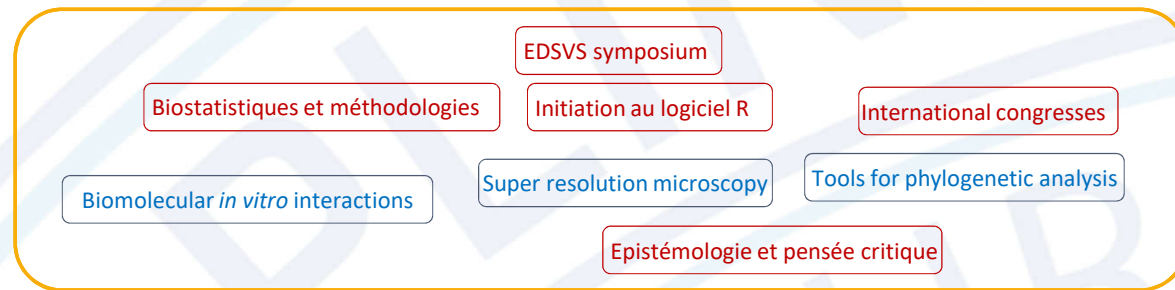
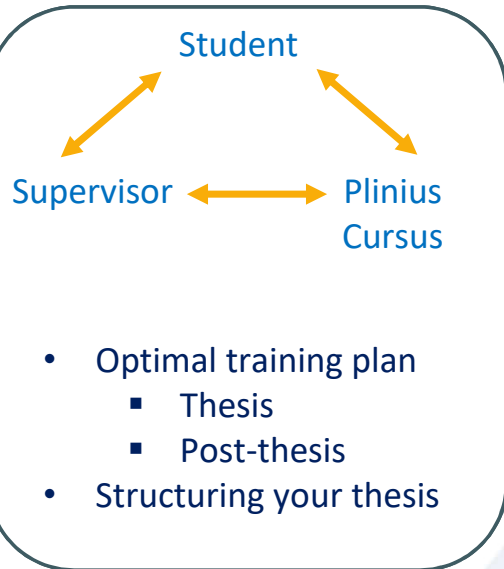
- **Production**
 - Protein Extraction & purification
 - High throughput proteins expression
 - Protein expression screening in E.coli
- **Interaction**
 - In vitro biomolecular interactions
 - In vivo Biomolecular interactions
- **Analysis**
 - Proteins Mass Spectrometry
 - Enzymology
 - Ions measurement techniques
 - Redox titrations
- **Lipidomic I & II**



Omics in-Microbiology

- **Quantification**
 - RNA-extraction– quality control
 - Quantitative PCR
- **Data analysis**
 - Sequence data variant calling
 - Chip-seq data
 - RNA-seq Data
 - Phylogenetic analysis
 - Microbial diversity using NGS data

Personal Career Development Plan



Biophysics-Microscopy

▪ Microscopy

- *Theoretical kit for microscopy*
- *Microscopy I basis*
- *Super resolution Microscopy*
- *Electron Microscopy*
- *Microfluidics for Microbiologists*

**Summer school of
microscopy 2024**



▪ Structure

- *EPR spectroscopy in life sciences*
- *Proteins NMR spectroscopy*
- *Crystallization I & II*

Summer school of magnetic spectroscopies

+

(AlphaFold – structure prediction & interpretation)

▪ DFT

▪ Electrochemistry

▪ Metalloproteins Design →

Metalloprotein Design 2024 (BIP)

Biochemistry

■ Protein Production

- Purification optimisation
- Screening

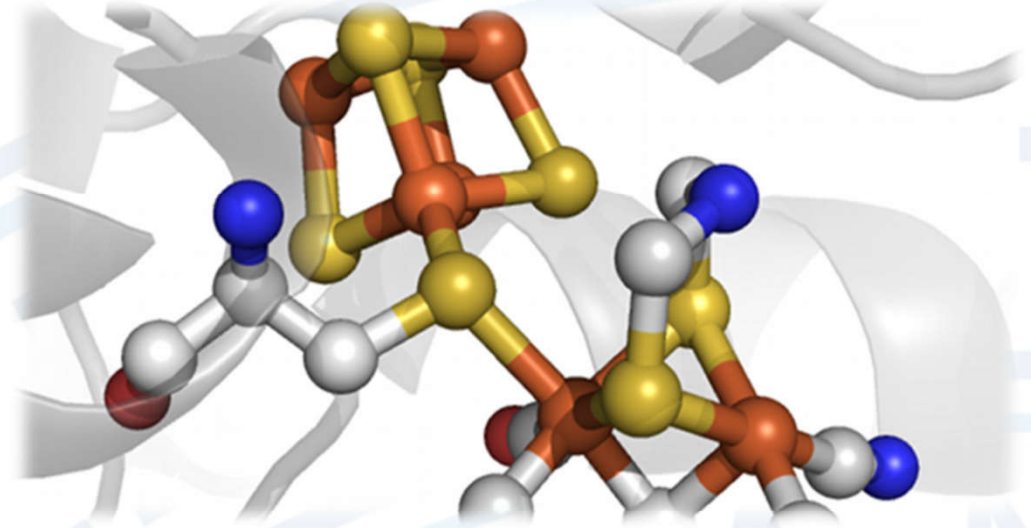
■ Protein Analysis

- Proteins Mass Spectrometry
- Enzymology
- Ions measurement
- Redox titrations

■ Protein Interaction

- *In vitro*
- *In vivo*

■ Lipidomic I & II



MEDIM March 2024

Méthodes d'étude des interactions Moléculaires – IMM/AFMB/Timone

Whole Organisms

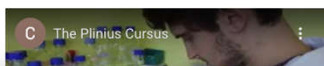
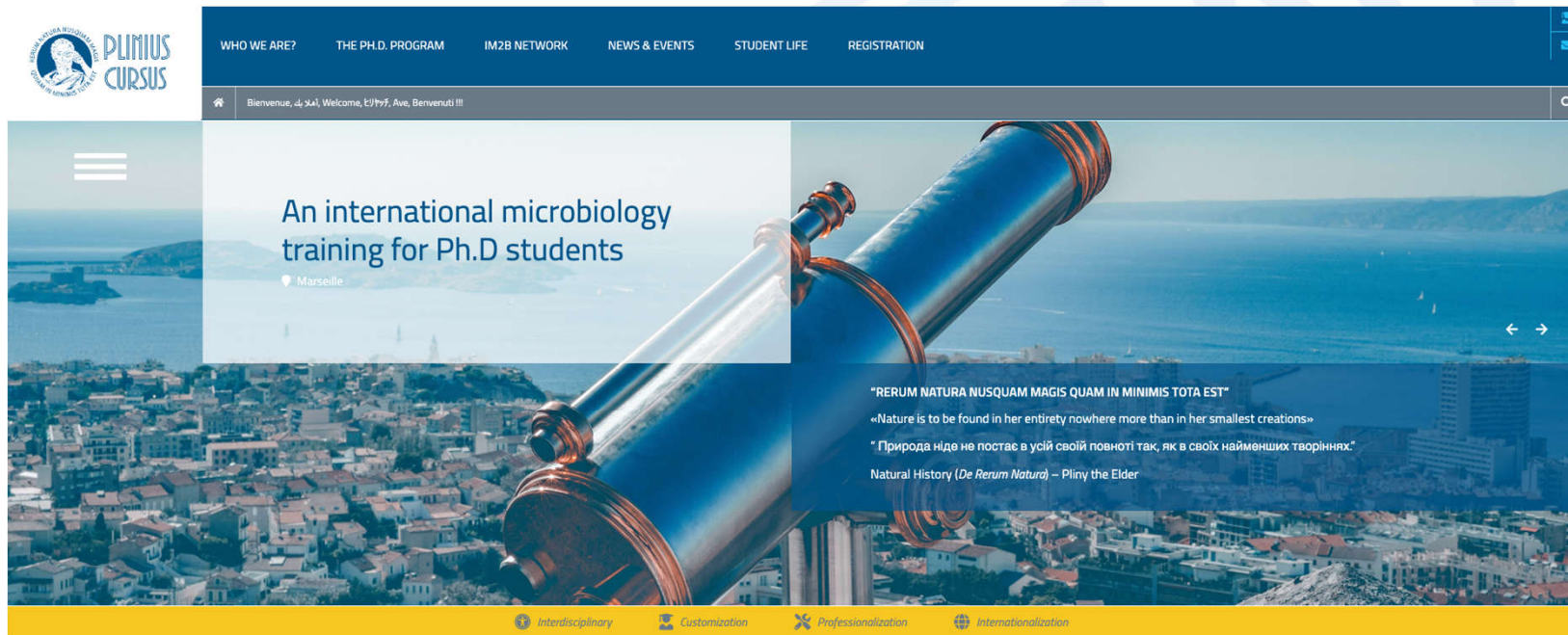
- Single Cell Sorting of magnetic microorganisms
- Flow cytometry
- Plant Growth in monitored conditions
- Plant-Microbes interaction



Where can I find the information?

Dedicated web site design

<https://pliniuscursus.univ-amu.fr/>



Joining IM2B's Plinius Cursus program is a guarantee of success for a winning doctorate and a training that prepares you for an international career!

Where can I find the information?

Dedicated web site design

<https://pliniuscursus.univ-amu.fr/>



The screenshot shows a web browser window with the URL ecole-doctorale-62.univ-amu.fr/doctorant/formations-doctorale/ateliers-proposes. The page header features the Aix-Marseille University logo and the text 'ECOLE DOCTORALE SCIENCES DE LA VIE ET DE LA SANTÉ / ED 62'. The main content area is titled 'ATELIERS PROPOSES' and contains the following text:

Ateliers de l'Ecole Doctorale

Les doctorants peuvent s'inscrire sur l'une des formations organisées par l'EDSVS ou à une autre formation centralisée dans la rubrique "Catalogue des formations"

Pour toute inscription, il faut passer par votre espace ADUM.

L'Ecole Doctorale est aussi connectée aux organismes de recherche comme l'INSERM, le CNRS ou l'INRA qui organisent leurs propres formations et acceptent des doctorants. Par ailleurs, l'ED fait partie du réseau des Ecoles Doctorales qui donne accès à des formations organisées par d'autres universités. De manière générale, l'ED accompagne financièrement les demandes de formation extérieures en France, hors région, ou à l'étranger.

Ateliers externes en partenariat

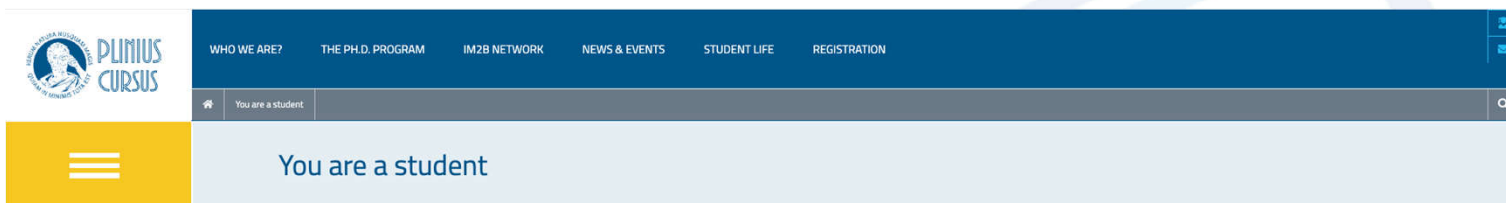
- Formations proposées par les Ecoles Doctorales AMU.
- Formations transversales proposées par le Collège Doctoral :

The right sidebar, titled 'DOCTORANT', lists the following options:

- Réinscription
- Comité de Suivi Individuel
- Formations doctorales**
 - Modalités validation des formations
 - Ateliers proposés**
 - Colloque de l'Ecole Doctorale
- Soutenance de thèse
- Des outils pour une thèse moins stressante...

Where can I find the information?

Our address pliniuscursus@imm.cnrs.fr



If you are a doctoral student, post-doctoral fellow or non-tenure track student at the IM2B, you can benefit from the Plinius Cursus Ph.D. program. If this is your case, contact the Plinius Cursus representative of your laboratory. Your laboratory representative will register you for the program. All you must do is complete your online profile. You will then be informed about the life of the Plinius Cursus and the opening of new training sessions.

- | | | |
|---------------------------------|------------------------|--------------------------|
| — AFMB ML Garron → | — BBF I. Gimbert → | — BIAM Luminy B. Field → |
| — BIAM Cadarache M. Sirinelli → | — BIP M. Ibert → | — IGS M. Legendre → |
| — IMM D. Byrne → | — iSm2 A. Ciaccafava → | — LCB L. Aussel → |
| — LISM S. Bleves → | — MCT M. Masi → | — MIO L. Casalot → |

How to register for a new workshop or practical training?

The dates of the workshops and practical trainings are fixed a few months in advance. For some sessions, the exact date is not communicated at the opening of the registration. It will be set later when a quorum of participants has been reached and depending on the availability of the speakers and participants.

Do not forget to talk with and inform your supervisor about your registration to this training session

1. There are two ways to access the registration process.

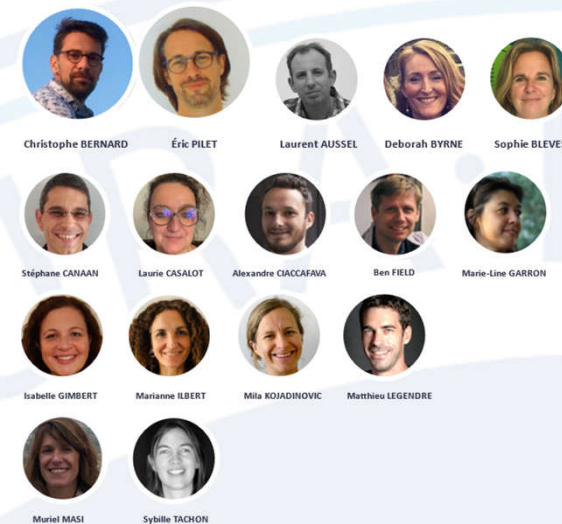
Either from the course page by clicking on "register" or here

[Register →](#)

2. How does it work?

— After entering your login details, click on "Coming training sessions", choose the session you are interested in, click on "I am interested" then on "register to the session" and validate. You will then receive an email validating your pre-registration.

The board



La nature des choses n'est nulle part mieux révélée que dans les petites choses

Pliny the Elder – book XI



THANKS