



3D virtual biology

Contributions and challenges of
imaging methods for the digitization
and analysis of biological objects in
three dimensions



Date:

April 7th-10th, 2025



Duration:

28 hours of training
(3 hours of lessons, 25 hours of practical work)



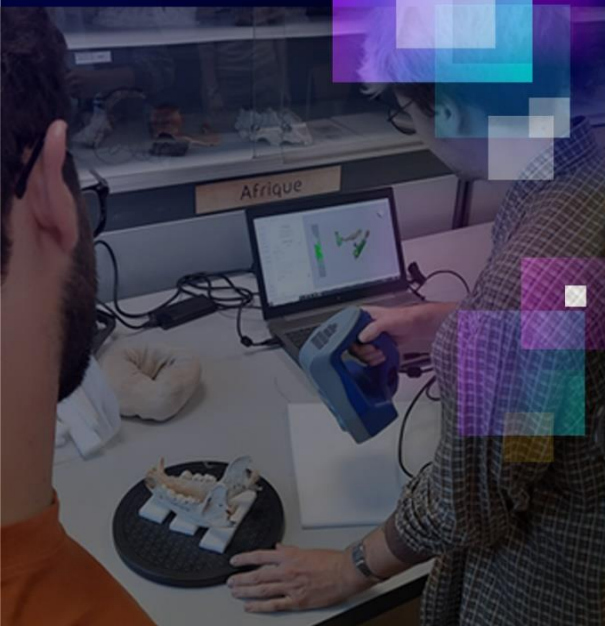
Location:

Laboratoire Paléontologie Evolution
Paléoécosystèmes Paléoprimatologie
Université de Poitiers - Bât B35 - TSA 51106
6 rue Michel Brunet - 86073 POITIERS Cedex 9



Inscription:

- adum.fr for PhD students from the Graduate School Rosalind Franklin
- or contact camille.grohe@univ-poitiers.fr for external candidates



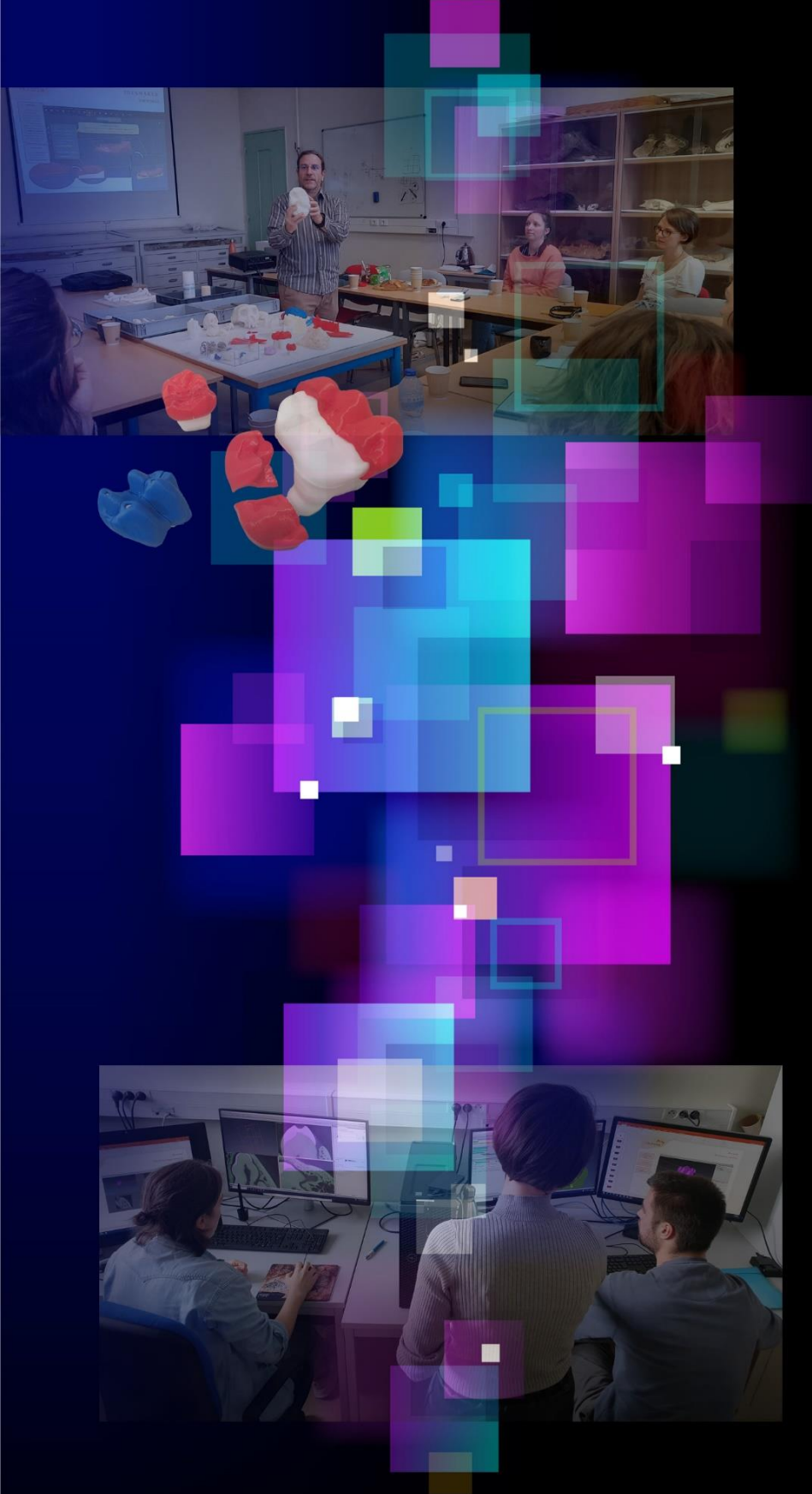
Program summary

This course offered by the Paleovprim laboratory (UMR 7262 University of Poitiers & CNRS Ecology & Environment) aims to provide knowledge and skills in the use of 3D imaging tools in the natural sciences, from the acquisition and processing of virtual data (surfaces and internal structures of an object) to statistical analyses with the goal of addressing specific research questions.

You will be trained in surface scanning of biological objects at various resolutions using a profilometer (Leica DCM8) and two 3D scanners (Artec Space Spider, Medit i700). Additionally, you will become familiar with the principles of X-ray scanning for anatomical specimens (including bones, dental skeletal elements, and soft tissues) to non-invasively access their internal structures using CT, microCT, and synchrotron imaging.

3D data from CT and MRI scans will be processed (e.g. 3D reconstruction of regions of interest, work on texture, mesh, different image formats and 3D objects) before being analyzed (in particular with morphometric parameters). You will also learn how to extract 3D data available from online resources (e.g. MorphoMuseum, Morphosource) and use the appropriate formats and software to process them. Finally, you will receive an introduction to methods for 3D model printing using the Raise3D PRO2+ and Zortrax M200+ printers.

The purpose of virtual models is both to provide scientific data but also to serve as essential archives for data sharing between researchers, preserving and enhancing the value of original specimens and supporting natural science education through educational materials.





Amélie Beaudet
CNRS Junior
Professor Chair

Evolution of the brain
in primates



Camille Grohé
Assistant
Professor

Evolution of the ecology
of carnivores



Gildas Merceron
CNRS Senior
Researcher

Diet and environments
of primates

Instructors



MicroCT, synchrotron,
confocal profilometer,
3D scanner, 3D printers



Jérôme Surault
University
Technician

Manager of the technical
platform of PALEVOPRIM



Axelle Walker
CNRS Postdoctoral
Researcher

Evolution of the dental
morphology of primates
and rodents



Charlotte Theye
Fyssen Postdoctoral
Researcher

Evolution of the internal
bony structures of primates

List of equipments

- Leica DCM8 (Leica Microsystems)
- Artec Space Spider (Artec 3D)
- Medit i700 (Medit)
- Zortrax M200+ (Zortrax)
- Raise3D PRO2+ (Raise3D)

List of commercial software and freeware

- Leica Scan
- Leica Map
- Artec Studio
- Medit Link
- Z-suite
- Ideamaker
- TinkerCAD
- Avizo
- 3D Slicer
- Meshlab
- R Studio

Instructions for registration

- No specific prerequisites
- Whenever possible, practical work materials will be tailored to each participant's interests. Therefore, **please provide information about your study subjects and expectations at the time of registration.**
- Limited to 8 participants

