

An abstract painting with a grid overlay. The painting features a mix of warm and cool colors, including yellows, oranges, reds, blues, and greens, with visible brushstrokes and a textured surface. A white grid pattern is overlaid on the painting, with lines intersecting at various points.

VIU PhD academy Preserving and safeguarding THE BEAUTY OF CULTURAL Heritage

**Preserving and Safeguarding the Beauty
of Cultural Heritage: Fundamentals, Methods
and Applications of State-of-the-Art Diagnostic Tools
Using Optical, X-Ray and Particle Probes**

**November 6-10, 2023
Venice International University
Isola di San Servolo, Venice**

VIU International PhD
Academy

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University

Scientific Coordinators:

Massimo Carpinelli
University of Milano-Bicocca

Letizia Monico
National Research Council of
Italy (CNR)

Roberto Senesi
Tor Vergata University of
Rome

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Heritage objects represent a fragile and non-renewable resource of human legacy, many of which have been irreversibly lost over the past centuries. This has undeniably called upon heritage professionals to look for proper and effective measures of safeguard and protection based on solid scientific and historical foundations. Safeguarding and learning more about heritage, in fact, means preserving not only its physical nature but also the values and meanings it carries. In such a context, strong effort has been put into the development and application of innovative analytical methodologies and diagnostic tools to heritage science over the last decades. From the diagnostic point of view, a grand challenge is related to the complexity of heritage items themselves, in terms of both constitutive materials and storage environments, and to the need to obtain the greatest amount of information without provoking their damage, i.e., via access to non-destructive and non-invasive tools.

This PhD Academy aims at providing a comprehensive overview of state-of-the-art analytical methodologies and diagnostic tools currently used within the heritage science domain, with a focus on pioneering methods exploiting optical, X-ray and particle probes (i.e., electrons, muons, protons, neutrons) generated by novel and/or conventional devices and accelerators along with their more recent applications to different kinds of heritage items (e.g., papyri, fossils, metals, glass, ceramics, manuscripts, paintings).

This PhD Academy will be led by:

- University of Milano-Bicocca, Italy
- National Research Council of Italy (CNR)
- Tor Vergata University of Rome, Italy
- Duke University, United States

Faculty

Massimo Carpinelli, University of Milano-Bicocca
Alberto Bravin, University of Milano-Bicocca
Roberto Senesi, Tor Vergata University of Rome
Carla Andreani, Tor Vergata University of Rome
Letizia Monico, CNR
Costanza Miliani, CNR
Claudia Conti, CNR
Francesco Paolo Romano, CNR
Francesco D'Acapito, CNR & European Synchrotron
Radiation Facility (ESRF)
Warren S. Warren, Duke University

Alessandra Fornetti, Venice International University
Ilda Mannino, Venice International University

Topics

The program will concentrate on the transversality of the challenges in the interdisciplinary domain of heritage science, by emphasizing the benefits of working with heritage items to the developments of sciences and technology and their effective contribution to human sciences.

To this aim, the PhD Academy will draw together experienced and emerging scholars from both hard-sciences (e.g., physics, chemistry, engineering, material sciences, computer science...) and arts and humanities (conservation, archaeology, history, art history, museology...). The program will also include a parallel program of training in a range of Transversal Skills for developing participants' academic careers and poster sessions to present their research projects.

Learning outcomes for participants

a) Enhanced career and employability, through the acquisition of attractive research skills:

- For a wide range of hard-science fields. Students will acquire fundamental skills in the application of state-of-the-art analytical techniques, by training and following lectures by highly qualified scholars working in the field. The use of advanced methods exploiting optical, X-ray and particle probes (especially the ones generated by accelerators) is quickly increasing in the heritage science domain as well as in material sciences, crystallography, environmental sciences, photocatalysis, and others. This interdisciplinary focus of the PhD Academy will provide students with skills that would make them attractive to a wide range of scientific research institutes across different fields all over the world.
- Attractive research skills for the Cultural Heritage sector dedicated to the safeguard of heritage items. The PhD Academy will provide skills that are of fundamental importance in the field of Heritage management, by expanding knowledge of the technical aspects of the care of heritage items. Throughout the Academy, students from both hard and human sciences will have the possibility to interact with experts working in large scale facilities, museums, art conservation and research institutes, thus favoring their networking in fields adjacent to academia.
- For the development of new technologies. Through the acquisition of fundamentals on state-of-the art methods and diagnostic tools applied to the

characterization of Heritage items, students will develop a set of skills and knowledge highly interesting for worldwide manufacturing industries of artists materials (paper, paints...), coatings, concretes, and others, as well as for instrumental development.

b) Transversal skills

- Creative thinking, networking, visibility, effective presentation, project management, convincing proposal writing, and preparation for the job market. The PhD Academy will provide students with basic dissemination, communication, and exploitation skills. We will discuss scientific publishing (journal choice, improving your odds of acceptance), understanding the scientific news media, and optimizing presentations for a general audience. Skills in project management will also be provided, with a particular focus on SMART - Specific, Measurable, Achievable, Relevant, and Time-Bound methodology. Additional classes will include instructing of handling budgets for scientific projects. Understanding how to write articles and proposals for accessing research infrastructures (e.g., large scale facilities) and their organization will be covered by lectures and training activities with professionals working in the field.

Who can apply?

This international PhD Academy is offered to PhD students, post-docs, and junior researchers with a background in material sciences, physics, chemistry, biology, geology, engineering, computer science, heritage science, archaeology, paleontology, art history, art conservation and restoration. Open to candidates from all the VIU Member Institutions; applications from excellent candidates from non-member institutions will be also considered and evaluated.

Fees & Grant Support

Students from the VIU member institutions will pay no participation fees. Grant support is also available to support, partially or fully, the costs of international travel and accommodation. The participation fee for students of non-member institutions is Euro 1,150 (incl. VAT). The fee is inclusive of tuition, course materials, accommodation, lunches, social events, and taxes. Students from non-member institutions are not eligible for VIU grant support. VIU Alumni are eligible for a reduced fee.

Call for applications

June 7 – August 27, 2023 via the VIU website

Applicants must submit the (1) application form, (2) a letter of motivation – which should include a short bio and a brief description of the candidate's research project, (3) a curriculum vitae and (4) a photo.

For further information: phdacademy@univiu.org

VIU International PhD Academies

Venice International University is a consortium of 20 universities, representing 14 countries throughout the world.

The mission of VIU is to foster cooperation among VIU member institutions while facilitating the exchange of knowledge and ideas, by developing, promoting, and organizing joint academic, research and training/capacity-building program. Students from non-member universities may participate in selected academic programs.

The academic programs at VIU are distinguished by a markedly interdisciplinary approach to the topics, and by the international perspectives that the participants contribute to the discussions. The VIU campus is on the island of San Servolo in Venice, Italy.

Venice International University holds two/three International PhD Academies each year. They are intensive training opportunities open to PhD candidates from the member universities of VIU.

A PhD is the highest diploma awarded by universities in the world, and PhDs are naturally expected to take on major responsibilities in their professional life. Apart from the disciplinary scientific skills acquired during doctoral study and research, it is the ability to respond to the requirements of creativity, innovation, and project management, that produce the significant added value of a doctoral degree.

Whether they will work within or outside academia, PhDs must be able to develop a forward-looking vision of the challenges they have to face. The interdisciplinary approach of all VIU activities is adopted also in the PhD Academy, where the participants have the opportunity to meet their peers from all over the world, and to tackle transversal topics.

www.univiu.org/study/phd-academy

Guest Speakers

Patrizio Antici, Institut National de la Recherche Scientifique (INRS), Canada

Marine Cotte, ESRF

John Delaney, National Gallery of Art, Washington

Christian Greco, Museo Egizio, Turin

Claire Pacheco, Centre de recherche et de restauration des musées de France (C2RMF)

Luciano Pensabene, Peggy Guggenheim Collection, Venice

Luca Tortora, Roma Tre University

Location



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