
LE STUDIUM
Loire Valley
Institute for Advanced Studies
LE STUDIUM SCIENTIFIC REPORT 2024

ANNUAL SCIENTIFIC REPORT 2024

THE PRESIDENT EDITORIAL

In 2024, LE STUDIUM Loire Valley Institute for Advanced Studies has strengthened its position and is now well on the way to implementing its strategic plan for 2021-2027, actively contributing to the internationalisation of research in the Centre-Val-de-Loire region. It holds a portfolio of nine active programmes that enable highly qualified researchers to come and stay in the region for long periods and to develop long-term collaborations within the region's higher education and national research institutions. The diversity of themes and profiles that the Institute catalyses and brings together is the very emblem of LE STUDIUM, which from its inception has continued to promote three qualities: curiosity, imagination and intuition.

In 2024, a number of additional programmes supported the attraction of new talented scientists alongside the still very dynamic Smart Loire Valley Programme, which has been open to all scientific disciplines and experienced researchers for over twenty years. We want to mention here the French Institutes Advanced Study programme (FIAS) - funded by the European Union's Marie-Curie Sklodowska Actions and managed by the French Network of Institutes for Advanced Study (RFIEA) -, the Val-de-Loire House for Social & Human Sciences Visiting Researchers Programme ; and a brand new Arts & Sciences Programme developed in partnership with the Arts and Design School of Orléans and the Molecular Biophysics Laboratory of the National Centre for Scientific Research in Orléans.

In addition, with the aim of structuring and strengthening the region's research ecosystem around established priority areas, LE STUDIUM has contributed to the four ambitious research and development CVL programmes initiated by the Regional Council through internationally focused initiatives. The Institute has met with a number of international ecosystems and partners. These efforts have led to numerous visits abroad, interviews, hosting of delegations and workshops for presentations and discussions. Several European projects have been submitted in partnership with these established contacts, and a staff exchange programme has been launched in 2024.

In 2024, our programmes will have enabled forty international researchers to visit the region, bringing 186 months of research to 27 laboratories. In collaboration with the hosting research institutes and laboratories, LE STUDIUM organised more than forty international events and two conferences for the general public.

We would like to thank the members of our independent Scientific Council for their exceptional and loyal contribution; they devote a lot of time and energy to the selection of projects and ensure the credibility of our activities.

Thank you to our partners who support LE STUDIUM programmes. First and foremost our public funders, the European Union, the Centre-Val-de-Loire Regional Council, Orléans Métropole, and the Universities of Orléans and Tours, as well as all our scientific partners: BRGM, INRAE, CEA, INSERM, INSA, CNRS. Not forgetting the industrial members of our committees and programme partners who take the time to advise us on the best ways to promote research and innovation. And a final word to the LE STUDIUM staff, because their dedication is essential to this renewed dynamic that would not work without their strong daily involvement and full commitment to the success of our programmes in the service of our scientific partners. Our warmest thanks to them all.

It is my hope that you will enjoy this 2024 report, with its wealth of new scientific research and discoveries.

Ary Bruand,
President

Special thanks to Yves-Michel Ginot.
As an economist, then a scientist and founding member of LE STUDIUM alongside Prof. Paul Vigny, we would like to express our sincere thanks to Yves-Michel Ginot, who has accompanied LE STUDIUM during his 8 years as President since 2017. His passion for interdisciplinarity, his curiosity, his admiration for the research projects supported by Le Studium, his great respect for differences and his great human qualities have intelligently lit the way for LE STUDIUM.

L'ÉDITO DU PRÉSIDENT

L'année 2024 a permis de conforter la position de l'Institut d'études avancées (IEA) LE STUDIUM Loire Valley qui se voit bien engagé dans son plan stratégique 2021-2027 d'accompagnement de l'internationalisation de la recherche en région Centre-Val-de-Loire. Il compte neuf programmes d'invitation actifs qui permettent à des scientifiques hautement qualifiés de venir séjourner en région pour un temps long et de développer des collaborations durables au sein des établissements d'enseignement supérieur et des organismes nationaux de recherche présents en région. La diversité des thématiques et des profils que l'institut catalyse et réunit, est l'emblème même du Studium qui prône toujours les trois qualités invoquées dès sa création : curiosité, imagination et intuition.

En 2024, plusieurs programmes ont soutenu l'effort d'attractivité fourni par le toujours très dynamique Smart Loire Valley Programme ouvert depuis plus de vingt ans à toutes les disciplines scientifiques et aux chercheurs expérimentés : le programme FIAS (French Institutes Advanced Study) financé par les actions Marie-Curie Sklodowska de l'Union européenne et piloté par le Réseau Français des Instituts d'Etudes Avancées, Le Programme de Visiting Researchers de la Maison des Sciences de l'Homme du Val-de-Loire et un tout nouveau Programme Arts & Sciences développé en partenariat avec l'Ecole Supérieure d'Art et de Design d'Orléans et le Laboratoire de Biophysique Moléculaire du Centre national de la recherche scientifique à Orléans.

Par ailleurs, avec l'objectif de structurer et renforcer l'écosystème recherche présent en région autour de domaines prioritaires établis, LE STUDIUM a contribué à quatre programmes intitulés Ambition Recherche et Développement CVL initiés par le Conseil régional par des actions tournées vers l'international. L'institut est allé à la rencontre de plusieurs écosystèmes et partenaires internationaux. Ces efforts ont donné lieu à de nombreuses visites à l'étranger, interviews, accueils de délégations et ateliers de présentations et réflexions. Plusieurs projets européens ont été déposés en partenariat avec ces contacts établis et un programme d'échanges de personnels a vu le jour en 2024.

Nos programmes auront permis la visite d'une quarantaine de chercheurs internationaux sur le territoire en 2024 pour 186 mois de résidence. En collaboration avec les instituts et laboratoires de recherche les ayant accueillis, LE STUDIUM a organisé une quarantaine d'événements internationaux et deux conférences grand public.

Nous tenons à remercier la contribution exceptionnelle et fidèle des membres de notre Conseil scientifique indépendant qui apportent le crédit nécessaire à nos activités et consacrent du temps aux sélections.

Merci à nos partenaires qui soutiennent nos programmes. Tout d'abord nos financeurs publics, l'Union Européenne, le Conseil Régional Centre-Val-de-Loire, Orléans Métropole, et les Universités d'Orléans et de Tours, ainsi que tous nos partenaires scientifiques : BRGM, INRAE, CEA, INSERM, INSA, CNRS. Sans oublier les membres industriels de nos comités et partenaires de programmes qui prennent le temps de nous éclairer sur les meilleurs moyens de favoriser l'innovation. Et un dernier mot pour le personnel du Studium, car cette dynamique renouvelée ne fonctionnerait pas sans sa forte implication quotidienne et son plein engagement dans la réussite de nos programmes au service de nos partenaires scientifiques. Qu'ils en soient ici très chaleureusement remerciés.

Puisse la lecture de ce rapport 2024 vous ravir avec son lot de nouvelles recherches et découvertes scientifiques.

Ary Bruand,
Président

Remerciements à Yves-Michel Ginot.
Economiste, puis scientifique, et membre fondateur du Studium aux côtés du Prof. Paul Vigny, nous adressons nos sincères remerciements à Yves-Michel Ginot qui a su accompagner LE STUDIUM pendant 8 années de présidence depuis 2017. Sa passion pour l'interdisciplinarité, sa curiosité, son admiration pour les travaux de recherche soutenus par LE STUDIUM, son grand respect des différences et ses grandes qualités humaines ont éclairé intelligemment la route du STUDIUM.

IDENTITY & MISSIONS

LE STUDIUM Loire Valley Institute for Advanced Studies (IAS): *a unique transdisciplinary approach to support research and innovation in the Centre-Val-de-Loire region and a multidisciplinary intellectual and human space favouring international scientific exchanges.*

Established in 1996 by Prof. Paul Vigny and inspired by the historical, geographical and human cultures of the Loire Valley, LE STUDIUM Loire Valley Institute for Advanced Studies (IAS) covers all research fields in one global initiative aiming at boosting international and multidisciplinary scientific exchanges in the region and creating a dynamic scientific community that fosters knowledge, research and innovation.
Strengthening fundamental research, sharing knowledge, contributing to innovation developments and addressing global challenges are the many goals pursued by the institute. Having welcome hundreds of highly qualified scientists, the institute contributes to the strengthening of human capital for research, development and innovation and participates in the promotion of regional scientific research and economic influence.

LE STUDIUM 's programmes enable the institute to welcome the residencies of experienced international researchers across all scientific disciplines and support the development of international sustainable research collaborations. The selections and recruitments happen through calls for applications and call upon high standards applying to LE STUDIUM Scientific Council and human resources management. Thanks to the variety of existing programmes, the scientific research projects hosted by the institute cover a wide array of scientific topics.

The Smart Loire Valley Programme opens every year and offers various residency awards across all scientific disciplines since the creation of the institute. This first LE STUDIUM programme set the basis of excellence in which the institute endeavours to select and welcome international scientists. For the period 2015-2021, it operated with a co-financing from the European Union in the framework of the Marie Skłodowska-Curie Actions (COFUND) for the mobility of experienced researchers.
Starting in 2022, LE STUDIUM is a partner of the French Institutes for Advanced Study (FIAS) Programme - financed by the Marie Skłodowska-Curie Actions (COFUND) – alongside with six other French institutes for advanced studies in the field of humanities and social sciences. In that field, LE STUDIUM Loire Valley IAS also collaborates with The Loire Valley House of Human Sciences with a Visiting Researchers Programme.
For the past fifteen years, LE STUDIUM Loire Valley IAS is also a key partner of the regional council for its Ambition, Research and Development programmes initiative to support the smart specialisation strategy (S3) efforts and structure the regional research in defined scientific fields: cosmetics, biopharmaceuticals, environmental metrology and digital twins, forestry, materials in extreme conditions, natural and cultural heritage… Fellowships, conferences, missions abroad and visits of delegations, workshops, and small groups meetings lead to the development of ambitious collaborations and projects.
Since 2021, LE STUDIUM is an associated partner of the ATHENA European University Consortium through a partnership with the University of Orleans: a Visiting Researchers Programme open to the nine European universities members has fostered exchanges and creation of new curricula and events formats.
The institute develops in parallel a rich scientific events programme including international conferences, workshops, transdisciplinary seminars, webinars, summer schools and lectures for the promotion of the scientific culture and knowledge.
At the interconnection between fundamental research and innovation, LE STUDIUM works in close collaboration with all regional research partners, stakeholders and intermediaries:

- University of Orleans, University of Tours, INSA Centre-Val de Loire, ESAD Orleans, AgroParisTech Orléans,
- BRGM, CNRS Centre Limousin Poitou-Charente, CEA Le Ripault, Centre INRAE Val-de-Loire, Inserm
- Cosmetic Valley, Polymeris, Dream, S2E2, Polepharma, Vegepolys
- Maison des Sciences de l'Homme Val-de-Loire, Da Vinci Labs
- Hospitals of Tours and Orléans
- Euclide, Dev'Up, Centre-Sciences, CCI, etc...

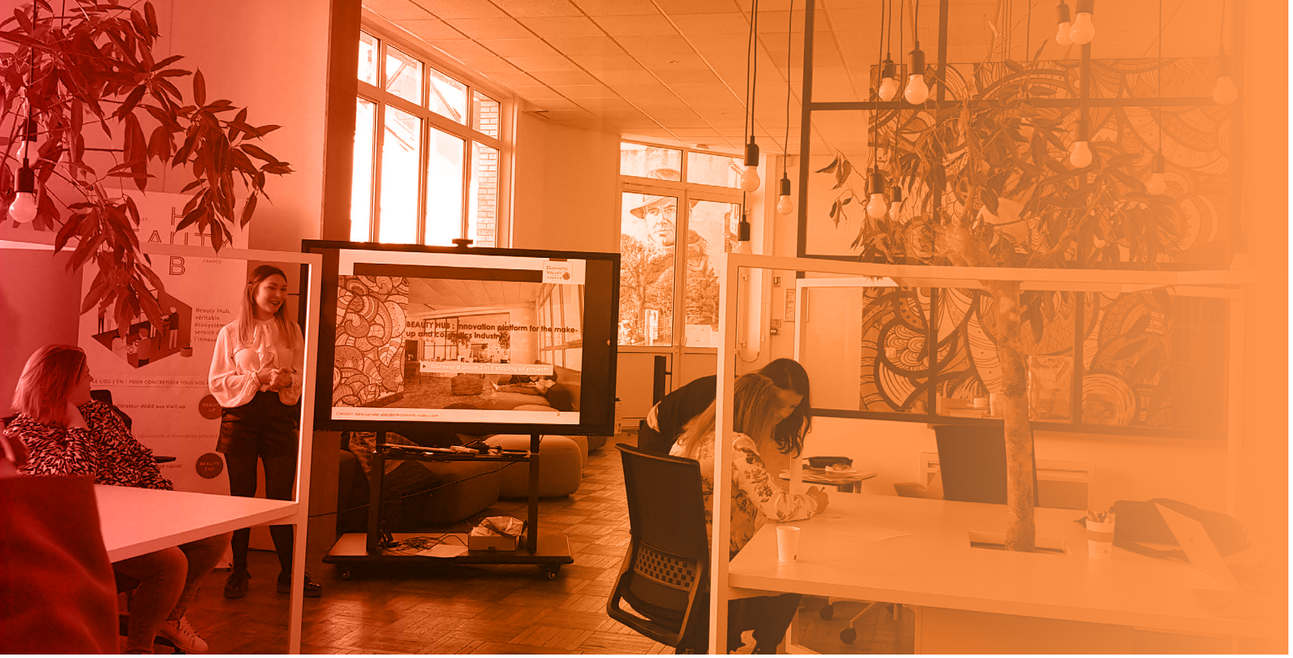
LE STUDIUM Loire Valley Institute for Advanced Studies' awards are selected thanks to the support and expertise of the LE STUDIUM Scientific Council. The latter is composed of twenty-five renowned scientists who regularly dedicate some of their precious time to evaluate research projects and candidacies in total independency.

SCIENTIFIC VISION & SURROUNDINGS

From fundamental research to innovation and socio economic development.

LE STUDIUM Loire Valley Institute for Advanced Studies is strongly imbedded in the Centre-Val-de-Loire region's research landscape. With 28 years of experience and holding a prestigious portfolio of regional and international research programmes, activities contribute to spreading light on its regional actors, partners and visitors. The focus of its mission remains to build the human capacity for research and scientific knowledge and to foster socioeconomic development and innovation. LE STUDIUM's expertise lies in attracting and managing a growing flow of global research exchanges, boosting international scientific exchanges, creating new scientific value chains, and contributing to the emergence of innovative, collaborative research and enterprise activities. The impact of new knowledge on the economy is incremental, but the cumulative effect is substantial.
Based in the city centre of Orleans at the Hotel Dupanloup, the International University Centre for Research, LE STUDIUM Loire Valley IAS maintains deep interactions with all regional research partners and stakeholders, offering its high-quality services and attractiveness to welcome talents in the Centre-Val-de-Loire region. It enjoys prestigious premises and exceptional facilities to welcome international visiting researchers and regional researchers.
LE STUDIUM Loire Valley IAS offers international invited research fellows and visitors an intellectual and human space favouring interdisciplinary exchanges and debates, offering science a human dimension and creating a path for inspired research. It is guided by the three necessary conditions required for a creative activity, namely Curiosity, Imagination and Intuition. Having the opportunity to spend some time in the institute remains a memorable experience.

After the selection process and during the whole residency period, a dedicated contact person brings support and assistance to each researcher to guaranty a smooth and efficient installation and integration in the region from visa preparation, fully furnished housing arrangements, clearing of all administrative and technical burdens for banking, schooling, insurance...
LE STUDIUM Loire Valley IAS develops in parallel a rich scientific events programme including international conferences, workshops, transdisciplinary seminars, webinars, summer schools and lectures for the promotion of the scientific culture and knowledge. All Research Fellows benefit of the permanent invitation to all events organised by the institute.
The monthly transdisciplinary seminars, LE STUDIUM Thursdays, praised by all participants have become over time a not-to-miss intellectual space for exchanges. Research Fellows are all invited to present their research to a multidisciplinary and international audience to start a discussion. This enables them to advance their presentation skills, to gain a deeper understanding of all regional research activities, to experiment concrete transdisciplinary



exchanges and to enhance visibility of their host laboratory and their laboratory of origin. Beyond the inspiring scientific presentations and discoveries of new disciplines, methods, analyses, the monthly seminar is certainly an important social time of the institute that enable Research Fellows to grow their network and develop international friendships. Events organised in 2024 have again demonstrated the diversity of research projects represented in the faculty of fellows and the creative interactions that emerged in all discussions.
LE STUDIUM Awards of selected candidates include the opportunity to have the institute partially finance and bring the necessary communication and logistics support for the organisation of an international Conference or Workshop. Each research fellow has the opportunity to apply to this support at the beginning of her/his visit. These events organised in partnership with regional host research institutes and laboratories attract a large number of leading international researchers to the Centre-Val-de-Loire region each year. Their medium-size format and peculiarity offer the ideal scenery for the creation of close and fruitful discussions, which often result in new ideas for research and international collaborations. The digital format of certain events creates as well a new dynamic, as they enable a larger attendance with worldwide connections at lower environmental and financial costs. The online storage and accessibility of presentations beyond the conference time contributes even more to the public's awareness of research and facilitates the transfer of scientific knowledge to a wider audience.

In the framework of its participation to the Ambition, Research and Development programmes, LE STUDIUM Loire Valley IAS has developed a concrete expertise of liaising with international research ecosystems of interest for regional research laboratories and research institutes. The 2024 activities have led to the creation of firm partnerships engaged into proposed or funded international programmes. International collaborations are under further developments for the organisation of joined international conferences.

LE STUDIUM Loire Valley IAS remains an international, outward looking partner offering opportunities to access and develop fundamental research projects across all scientific fields. These opportunities are essential to lead to new knowledge and create the foundations from which the practical application of knowledge must be drawn. Together with its members and research partners, LE STUDIUM's mission nurtures this process closely linked to innovation.

LE STUDIUM AWARDS

Across its different research and invitation programmes, LE STUDIUM offers different types of awards and actions that stimulate and facilitate international scientific collaborations and interdisciplinary exchanges in the Centre-Val-de-Loire region.

Independent external peer reviewers and international independent Scientific Council members assess and select the best candidates and innovative research projects. To be eligible, applicant researchers must be nationals or long-term residents of a country other than France and comply with the European mobility rules.

LE STUDIUM RESEARCH
FELLOWSHIP OR INTEGRATION FELLOWSHIP

This award enables experienced international researchers to work in a host laboratory for ten to twelve consecutive months. The award targets internationally competitive researchers and offer them the opportunity to discover and work in nationally accredited laboratories with international renown. Benefits include a remuneration, travel support, a fully furnished housing, logistic and administrative support, specific training opportunities, and funding to organise one international event. Integration Fellowhips awards of 12 months target researchers in a process of application to a permanent position to one of the regional research centres.

LE STUDIUM RESEARCH
PROFESSORSHIP

This award enables an experienced international Professor to work in a host laboratory, to participate in research, research team building, postgraduate teaching and mentoring. The Professorship residency consists in four periods of three months in the Centre-Val-de-Loire region (twelve months in total in four consecutive years). Benefits include travel support, a fully furnished housing, logistic and administrative support, specific skills acquisition, and funding to organise one international event.

LE STUDIUM
VISITING RESEARCHER

This award enables experienced international researchers wanting to visit and work with a regional counterpart with personal resources, to experience a residency from three to twelve months. Benefits include travel support, a fully furnished housing, logistic and administrative support, specific training opportunities, funding to organise an international event and integration in the region.

LE STUDIUM
VISITING ARTIST

This award enables renowned international artists looking to engage into an interdisciplinary work with one arts research laboratory and one or more research institutes or laboratories in the Centre-Val-de-Loire region to enter the LE STUDIUM scientific community. The award offers a residency of minimum three months, and includes as benefits, travel support, stipends, a fully furnished housing, full logistic and administrative support, specific training opportunities, funding to organise an international event.

LE STUDIUM RESEARCH
CONSORTIUM

This award enables the creation of a team of five researchers (under the leadership of one researcher or research team from the Centre-Val-de-Loire region) and funds its regular gatherings for a full week twice a year over two years (four meetings in total over two years). The consortium projects have well-defined research objectives, a work-plan to implement and milestone goals to achieve between meetings. They can serve different objectives and consist in a solid basis to build a sustainable collaboration among a small group of international partners.

PROGRAMMES' CALLS FOR APPLICATIONS

Smart Loire Valley Programme*

The Smart Loire Valley Programme call for applications is open from November each year to February the next year. It aims to foster international scientific exchanges and collaborations and to build human capacity and scientific knowledge for research, development and innovation. It is open to all scientific disciplines and is a precious tool to access funding to develop fundamental research projects and to create or extend international collaborations. The programme offers different formats of awards (residency, visit, networking) of 3 to 12 months.

For the period 2015 to 2021, the programme operated with a co-financing from the European Union in the framework of the Marie Skłodowska-Curie Actions - COFUND (Co- Funding of regional, national and international programmes for the mobility of experienced researchers) for the Fellowships award.

Since 2022, the programme is funded by regional partners and authorities and continues to offer attractive awards. More than 120 months of residencies are financed through this programme.

* The SMART LOIRE VALLEY Fellowships Programme received European Union H2020 funding (Marie Sklowdovska Curie Actions, COFUND contract #665790) for Fellowships awards between 2016 and 2021.

The French Institutes Advanced Study (FIAS) Programme*

FIAS is an international mobility programme proposing high-level scientific residencies in the seven IAS of Aix-Marseille, Loire Valley (Orléans-Tours), Lyon, Montpellier, Nantes, Paris and Rennes. Initiated in 2020 and partially financed by the Marie Skłodowska-Curie Actions - COFUND (Co- Funding of regional, national and international programmes for the mobility of experienced researchers) the FIAS Fellowship programme runs until the end of the 2024-2025 academic year. A new FIAS programme will run till the end of 2030.

The FIAS fellowship programme supports high quality and innovative research as fellows conduct their research with the greatest freedom and benefit from the strong scientific and extra-academic support by the institutes.

The call is open to all disciplines in the SSH and all research fields. Research projects from other sciences that features a transversal dialogue with SSH are also eligible. It offers 10-month fellowships. In this context, the LE STUDIUM Loire Valley IAS welcome projects at the interface between SSH and other sciences enthusiastically.

*The FIAS programme receives funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 945408

LE STUDIUM MSH-Val-de-Loire Visiting Researchers Programme

Started in 2023 in partnership with the Maison des Sciences de l'Homme Val-de-Loire, LE STUDIUM VISITING RESEARCHERS Programme will run till the end of 2026. Research projects should focus on the main axes developed by the MSH-Val-de-Loire:

- Cities and urban studies;
- Money, economy and finance;
- Environmental Humanities;
- Transmission(s), transfer(s), re-appropriation(s);
- Human interaction and Data Science;
- Health in all its forms.

This programme aims to attract experienced international researchers willing to conduct a high quality and innovative project in collaboration with the MSH Val-de-Loire. It offers residency periods of 3 to 10 months.

The Ambition Research & Development CVL Programmes

These programmes are built upon the expertise of multidisciplinary academic research teams and industrial companies (Smart Specialization Strategy in the Centre-Val-de-Loire region) present in the region. The global objective is to structure the regional research ecosystem in priority scientific domains creating a value chain leading to economic development. The Centre-Val-de-Loire regional council funds the activities of research projects with high translational potential led by academic researchers with economic partners located in the region. LE STUDIUM has been a longstanding partner of these programmes since 2013, procuring high-level recruitments and organising targeted events to link with international partners. In 2024, LE STUDIUM additional efforts related to the following programmes:

ARD CVL BIOPHARMACEUTICALS (biopharmaceuticals)

BIOPHARMACEUTICALS
Innovation Dynamics In Health
IN REGION CENTRE-VAL DE LOIRE

ARD CVL COSMETOSCIENCES (cosmetics)

COSMETO SCIENCES

ARD CVL JUNON (environmental digital twins)

JUNON

ARD CVL MATEX (materials in extreme conditions)

MATEX
MULTIMATÉRIAUX EN CONDITIONS EXTRÊMES

ARD CVL SYCOMORE (connected forestry)

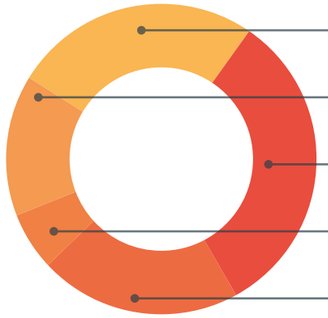
sycomore

RÉGION CENTRE VAL DE LOIRE

ORIGIN OF LE STUDIUM RESEARCH FELLOWS

336 RESEARCHERS FROM
57 COUNTRIES

THEMATICS
REPARTITION SINCE 1996



HUMAN AND SOCIAL SCIENCES	23%
EARTH, ECOLOGY AND ENVIRONMENTAL SCIENCES	16%
LIFE AND HEALTH SCIENCES	38%
COMPUTER SCIENCE, MATHEMATICS AND MATHEMATICAL PHYSICS	7%
MATERIALS AND ENERGY SCIENCES	16%

HIGHLIGHTS

Events and networking actions organised by LE STUDIUM aim at creating synergies between academic disciplines and links with the industrial world in order to increase interdisciplinary research and translational research to stimulate socioeconomic development. They contribute to the promotion of the research work carried out in the Centre-Val-de-Loire region in partnership with international scientists and to the extension of their networks.

1 THE FUTURE OF FOREST ECOSYSTEMS

The new threats posed to forests by climate change are presenting scientists with unprecedented challenges, involving extremely difficult management dilemmas. What can be done in the wake of more frequent and massive dieback and mortality events? Above all, what can be done to anticipate the adverse consequences of climate change, which are bound to intensify, given that there is no sign of any trend towards mitigation? Forest scientists need to improve their ability to observe the effects of extreme climatic events, better understand the natural mechanisms involved in the response of forest ecosystems, and find new nature-based adaptation solutions that will enable forests to be renewed.

2

Philippe Rozenberg (BioForA/Centre INRAE Val-de-Loire) introducing the conference held on November 12-15 in Orléans (France), organised in the framework of the Sycomore ARD CVL Programme and of the international lab FORESTIA (INRAE-INTA Argentina/University of Huanta Peru/Colegio de Postgraduados, Texcoco, Mexico).

3 THE NATURAL MECHANISMS OF FOREST ADAPTATION TO CLIMATE

Three separate workshops worked on reviewing the innovative approaches to forest renewal and observation of the consequences of climate change on forests.

- Plastic and evolutionary mechanisms of forest adaptation to climate
- Silvicultural and genetic approaches to forest renewal
- Tools and methods for observing the consequences of climate change on forests

Parallel workhop sessions

Cuauhtémoc Sáenz-Romero, Michoacan University of Saint Nicholas of Hidalgo - MX), LE STUDIUM Visiting Researcher/ Sycomore ARD CVL Programme animating a workshop session

1 MATERIALS & ENERGY SCIENCES

Bryan Beckingham

Period: September, 2024 - July, 2025
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Visiting Researcher
Speciality: Polymer Chemistry and Materials
Previously: Auburn University – USA
Research institute: Interfaces, Confinement, Materials and Nanostructures (ICMN) - CNRS / University of Orléans, Orléans
Host scientist: Christophe Sinturel

BIOGRAPHY

Dr. Bryan S. Beckingham is the Mary and John H. Sanders Endowed Associate Professor of Chemical Engineering, Director of the AU Center for Polymers and Advanced Composites, and Graduate Program Chair of Polymer & Fiber Eng. at Auburn University. He holds a Ph.D. and M.A. in Chemical and Materials Engineering from Princeton University and a B.S in Chemical Engineering from Clarkson University. His research is rooted in leveraging synthetic polymer chemistry, polymer processing, and materials characterization to inform the design of novel polymer materials for target applications, with an emphasis on polymer membranes, hierarchically structured matter, additive manufacturing polymer, and functional polymer systems.

RESEARCH QUESTION

Leveraging tunability of copolymer gradients during polymer synthesis to advance understanding of polymer self-assembly in confined geometries

Self-assembly of polymer materials provides a cost-effective route to preparation of materials with well-defined nanostructures. Due to their ability to self-assemble, block copolymers are a useful and important class of materials utilized in applications such as photonic crystals, ion conducting membranes, microfluidics, drug delivery, sensors, and nanoporous membranes, and templates for the fabrication of nanodots and nanowires. This project investigates the impact of a gradient copolymer within the block copolymer architecture for enabling control over self-assembly behavior in polymer thin films and how these films can be leveraged to fabricate porous templates. The approach is to synthesize block-gradient copolymers with controlled gradient structures from which polymer thin films are prepared and studied for their self-assembled morphology. Lastly, thin polymer films with controlled porosity will be prepared through selective removal of one of the blocks and subsequent backfilling with inorganic precursors the fabrication of nanopatterned surfaces.

Ganesh Duraisamy

Period: March, 2024 - March, 2025
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Visiting Researcher
Speciality: Materials and Energy Sciences
Previously: Anna University - IN
Research institute: PRISME Laboratory, INSA Centre-Val-de-Loire / University of Orléans, Orléans
Host scientist: Christine Rousselle

BIOGRAPHY

Ganesh Duraisamy, a Professor of Mechanical Engineering at Anna University since 2018, specializes in Internal Combustion engines and low-temperature combustion. He holds a Ph.D. (2011) in Mechanical Engineering from Anna University. An Indo-US Raman Fellow (2013), he conducted postdoctoral research at the Engine Research Centre, University of Wisconsin, Madison. His projects include methanol/diesel and methanol/DME dual-fuel engines with Indian OEMs and collaborations with IIT Madras, Aston University, and Tianjin University on sustainable green fuels. With over 20 years of teaching and 60+ publications, his research focuses on clean combustion of methanol, dimethyl ether (DME), ammonia (NH_3), and hydrogen (H_2) for power and automotive applications.

RESEARCH QUESTION

Potential of zero and low carbon fuels in high-efficiency clean combustion engines

Global carbon emissions must drop to zero by 2050, driving an urgent shift to zero-or low-carbon energy solutions. Given the widespread reliance on fossil-fuelled internal combustion engines (ICEs) for power and automotive applications, integrating zero-or low-carbon fuels into ICEs is a key strategy to mitigate CO_2 emissions. Ammonia has emerged as a promising zero-carbon alternative to hydrogen for ICEs due to its ease of storage and higher volumetric energy density. However, its poor combustion properties pose challenges for direct use in spark-ignition (SI) and compression-ignition (CI) engines. To overcome these limitations, researchers have explored blending ammonia with low- or zero-carbon fuels like ethanol, methanol, methane, biodiesel, and hydrogen to enhance combustion across various engine operating conditions. Despite progress, challenges remain, including lean operation, emissions of NOx, N_2O, and unburnt ammonia. This research explores the use of dimethyl ether (DME), a low-carbon, highly reactive fuel, as a combustion promoter for ammonia in both SI and CI engines. The aim is to address these shortcomings and advance the development of clean, efficient, and sustainable engine technologies.

Elidiane Rangel

Period: August, 2024 - October, 2024
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Guest Researcher
Speciality: Plasma Processes
Previously: São Paulo State University - BR
Research institute: Research Group in the Energetics of Ionized Media (GREMI) / CNRS / University of Orléans, Orléans
Host scientist: Eric Robert

BIOGRAPHY

Elidiane C. Rangel, a physicist with a Ph.D. in Sciences, is a professor at the Sorocaba campus of UNESP, Brazil. She is a regular member of the graduate program in Materials Science and Technology and served as its vice-coordinator from 2014 to 2017. Throughout her career, she has supervised students across various levels, including internships, scientific initiation projects, master's, Ph.D. and postdoctoral research. She has led and contributed to major research projects funded by Brazilian agencies and collaborated on innovation projects with Brazilian companies. Additionally, she has played an active role in organizing committees, coordinating symposiums at national and international events, editorial processes, mentoring interns, and hosting visiting foreign researchers.

RESEARCH QUESTION

Antimicrobial and Catalytic Activity of Multi-metallic Nanoparticles Synthesized by Cathodic Sputtering in Liquids

This study aims to synthesize multi-metallic nanoparticles (NPs) by sputtering noble metal targets (PtAu and Pd) into various colloidal fluids, specifically glycerol, [BMI][BF⍰], carvacrol, and PEMP. The research will investigate how the choice of supporting fluid influences the physicochemical properties, catalytic activity, and antimicrobial performance of the NPs. The structural and morphological characteristics of the synthesized NPs will be analyzed using Small-Angle X-ray Scattering (SAXS), Transmission Electron Microscopy (TEM), and High-Resolution Transmission Electron Microscopy (HRTEM). Their catalytic efficiency will be assessed by electrochemical tests based on the decomposition of organic compounds. The antimicrobial efficacy of the NPs will be evaluated by in vitro microbiological assays against *Staphylococcus aureus, Escherichia coli*, and *Pseudomonas aeruginosa*. In these tests, commercial nylon sutures will serve as scaffolds for the multi-metallic NPs. The decorated sutures will also be submitted to clinical tests.

LE STUDIUM RESEARCH CONSORTIUM

AMMONIA FOR VALUABLE CLEAN ENERGY SYSTEMS

Christine Rousselle

LE STUDIUM Research Consortium Coordinator

BIOGRAPHY

Full Professor at the University of Orléans, Fellow of Combustion Institute 2021, her research fields concern Fundamental Combustion to clean thermal applications (mainly internal combustion engines), by means of optical diagnostics and high pressure-high temperature vessels, with some focus on zero/low carbon fuels. Since 8 years, she leads different projects concerning Ammonia, a carbon-free fuel, at PRISME laboratory of University of Orléans. She is the main PI of ANR project, named Scientific Improvement on Ammonia Combustion (SIAC) and a FRANCE2030 project about decarbonisation of industries (Frozen).
Invited regularly in national and international conferences (more than 30) to deliver plenary lectures about ammonia combustion and/or ammonia as fuel for engines. She was also TEDX speaker 2021: 'L'énergie en 2050 : avec ou sans combustion ? | Christine ROUSSELLE | TEDxOrléan, 2021', https://youtu.be/6D8elPvVE_o.
She welcomed the 2nd Edition of the Symposium on Ammonia Energy 2023, in Orléans, with also the support of the Studium.

RESEARCH QUESTION

Linked to the European Union objective to reach zero carbon emissions in 2050, hydrogen became a good candidate to reach this deal. But, due to the complexity and costs of its storage and safety issues, ammonia, the 'nitrogenated hydrogen', is more and more considered as the best hydrogen carrier. A viable energy system based on green NH3 combustion with zero carbon footprint faces several main scientific and technological challenges. Ammonia has been considered as fuel during the 60s, with no gain in interest. 10 years ago, Japan started different programs on this topic and believed on the potential of ammonia fuel. As ammonia has fundamental characteristics of combustion far from usual fuels but also far from hydrogen itself, the scientific questions remain how to optimize the combustion of pure ammonia without undesirable pollutants emissions (as unburnt ammonia itself and nitrogenated species) and how to optimize the prediction of ammonia combustion to design accurate systems for power, transports, and industries? For that, fundamental studies as for example, kinetics combustion, turbulent-flame interaction in canonic set-ups still need to be done with, in parallel, experiments in applications as gas turbines, engines and burners. The combination of both will allow to develop accurate models, especially dedicated to ammonia fuel with or without mixing with other molecules (at hydrogen itself).

Partners

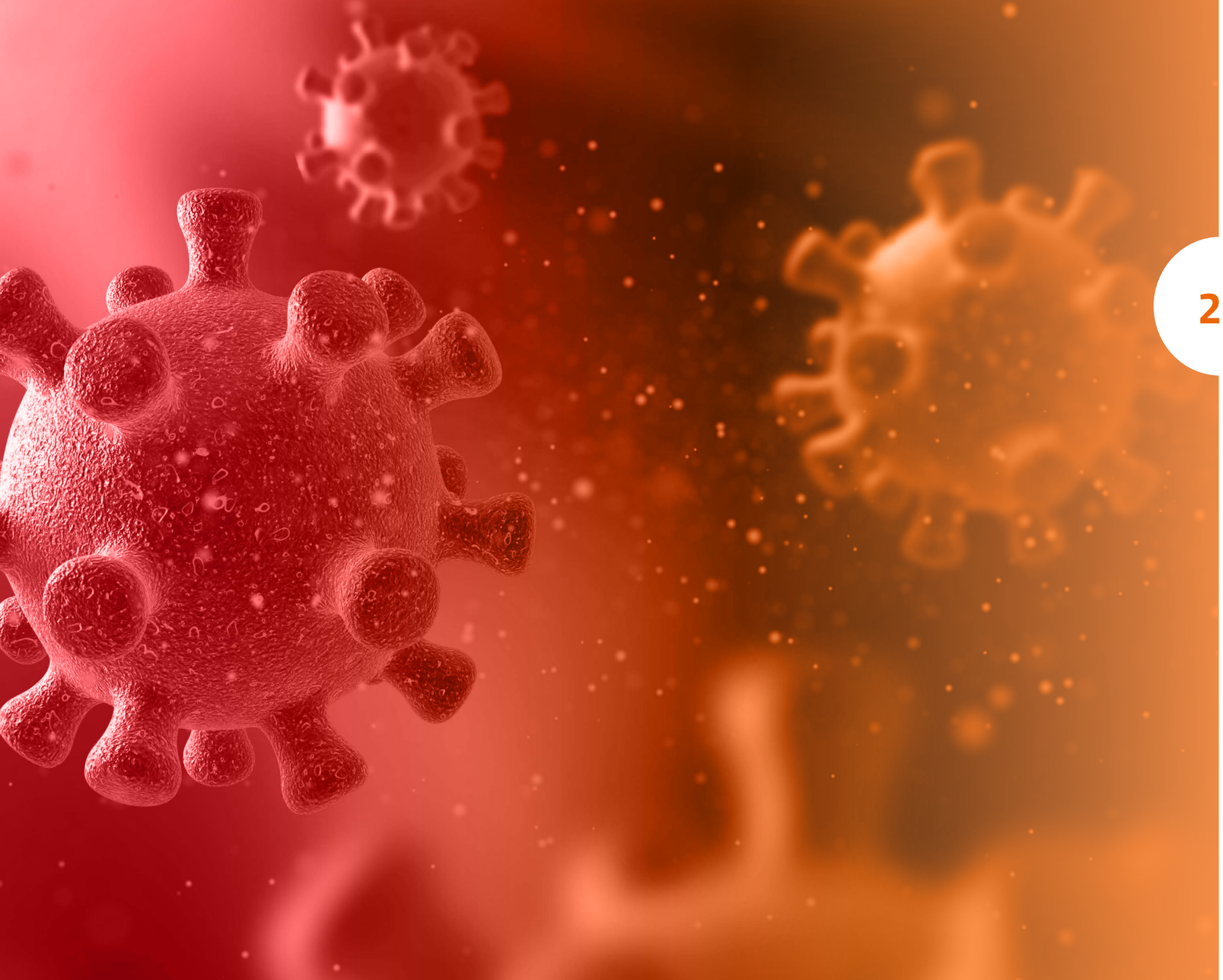
Mara Di Joannon
is a pioneer of MILD combustor, efficient burner
> Engine Institute, CNR - Naples, Italy

Pino Sabia
is an expert in experiments for understanding of ammonia combustion kinetics
> Engine Institute, CNR - Naples, Italy

Agustin Valera-Medina
is a pioneer in Europe on Gas turbine combustor fed with Ammonia
> Net Zero Innovation Institute, Cardiff University - United Kingdom

Fabian Mauss
is an expert in chemistry and I.C. engine modelling and dissemination of such models to industry as CEO of several SME. He developed one of the few most predictive kinetic mechanisms currently on ammonia oxidation
> Brandenburg University of Technology, Cottbus - Germany

Nondas Mastorakos
is an expert in CFD and experiments for stationary combustion systems and knowledge-transfer to the aviation industries
> Hopkinson Lab, Department of Engineering, University of Cambridge - United Kingdom



2 LIFE & HEALTH SCIENCES

Francis Bambico

Period: December, 2023 - December, 2024
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Visiting Researcher
Speciality: Neurosciences
Previously: Memorial University of Newfoundland, Toronto - CA
Research institute: Imaging, Brain and Neuropsychiatry (iBraiN) / University of Tours / Inserm, Tours
Host scientist: Catherine Belzung

BIOGRAPHY

Francis Bambico is associate professor in neuroscience at Memorial University of Newfoundland, where he leads a multi-funded lab. He is affiliated with the Centre for Addiction and Mental Health (CAMH) in Toronto. He obtained graduate training at the Max Planck Institute, University of Túbingen, eventually completing his PhD at McGill University in Montréal, and holding postdoc fellowships at Yale and CAMH. His research is focused on the neurobiology of psycho-affective disorders. He is lead investigator in drug discovery and optimization programs, as well as, in innovation initiatives testing neuromodulation strategies using preclinical models. He advocates bridging science with outreach, being with outreach organizations, e.g., Seinapse and the UNESCO community on child maltreatment.

RESEARCH QUESTION

Non-Invasive Neuromodulation for Vulnerable Groups

Psychiatric treatment poses enormous challenges, exigent among vulnerable groups, e.g., children. Despite the availability of medications, the unabatingly increasing prevalence of these illnesses has been met by poor treatment outcomes. With depression alone, over half do not respond to any treatment. Drastic interventions, e.g., DBS and ECT conventionally opted for refractory patients have not yielded optimal solutions. Steering efforts towards non-invasive strategies as transcranial current stimulation faces a number of technical obstacles, e.g., poor spatio-temporal targeting, indiscriminate cell-type activation and chaotic neural signals. The goal is to develop a strategy of non-invasively activating specific cell-types by pharmacologically priming them towards excitability using compounds that act on 1 of 3 isoforms of the SK-type channel variably expressed across neuron types. This is to make neurons selectively responsive to a secondary current input. Our aim is to test technical feasibility and efficacy in rodent models.

Nilson C. Cruz

Period: August, 2024 - October, 2024
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Guest Researcher
Speciality: Materials Science
Previously: São Paulo State University - BR
Research institute: Research Group in the Energetics of Ionized Media (GREMI), CNRS / University of Orléans, Orléans
Host scientist: Eric Robert

BIOGRAPHY

Nilson C. Cruz received B. Sc. and Master degrees in Physics and Ph.D in Science. He is currently Associate Professor at Sao Paulo State University, and his scientific interests include plasma processing of biomaterials and applications of atmospheric pressure plasmas on medicine, biology, agriculture and environment problems. He has published 170 papers, being cited more than 3600 times.

RESEARCH QUESTION

Non-antibiotics biocides produced by atmospheric plasmas with natural extracts

Antimicrobial resistance (AR), mostly caused by indiscriminate use of antibiotics, is an extremely worrying issue. In 2019, AR was associated to nearly 5 million deaths and it is estimated to kill 10 million people per year in 2050. The reversion of such scenario demands significant effort on multiple fronts, including the development of new antimicrobial agents. In this context, atmospheric pressure cold plasmas (APP) can be an immensely useful tool. With this technique, a myriad of reactive species is produced which can interact with a material near the plasma, endowing it new chemical and physical characteristics. Previously, we have observed that coatings produced by APP fed with natural extracts are highly efficient in inhibiting the adhesion and proliferation of bacteria strains. Based on that, APP fed with vapors of natural extracts from oregano and thyme, for instance, will be applied to incorporate reactive species in liquids solutions, to render liquids with expressive antimicrobial properties. The same experimental setup will be used to produce antimicrobial dressings.

Karol B. Barragán-Fonseca

Period: May, 2024 - March, 2025
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Interdisciplinary Forum - Visiting Researcher
Speciality: Production Ecology and Resource Conservation
Previously: National University of Colombia - CO
Research institute: Insect Biology Research Institute (IRBI), University of Tours / CNRS, Tours
Host scientist: David Giron

BIOGRAPHY

Karol is a veterinarian with expertise in wildlife teaching, research, and management, both *in situ* and *ex situ*. She holds a PhD in Production Ecology and Resource Conservation from Wageningen University (NL). Founder of the Terrestrial Arthropod Research Center (CINAT) and its spin-off EntoPro at UNAL, she is an Associate Professor and coordinator of the Insects for Peace initiative, promoting sustainability in agrifood systems through insects. Part of UNAL's diplomatic scientists' group, she also coordinates the Insect Network in the Latin American Association of Animal Production. Her work integrates bioeconomy, bioprospecting, and Ecosystem Services to address global sustainability challenges.

RESEARCH QUESTION

Multidimensional assessment of the potential of insects for sustainable agri-food systems

How can a qualitative framework be designed and applied to evaluate the ecological, economic, and societal roles of insects, enabling their integration into decision-making for sustainable agriculture across diverse contexts ? Addressing this question is urgent to tackle global challenges like climate change, biodiversity loss, excessive waste, and unsustainable food systems. Insects provide key ecosystem services—provisioning, supporting, regulating, and cultural—that can transform agri-food systems into circular, sustainable models. Yet, their full potential remains underutilized due to gaps in evaluation methods. This project proposes a flexible framework adaptable to various contexts and insect species, aiming to support evidence-based decisions that promote sustainability. By strengthening South-North collaboration between Colombia and France, this research lays the groundwork for interdisciplinary and global cooperation to advance insect-based solutions for food security, biodiversity conservation, and environmental resilience.

Umberto Diecinove

Period: August, 2024 - March, 2025
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Interdisciplinary Forum - Visiting Artist
Speciality: Photography
Research institute: Insect Biology Research Institute (IRBI), University of Tours / CNRS, Tours
Host scientist: David Giron

BIOGRAPHY

Umberto Diecinove (b. 1978, IT) is an artist and author with a background in literature, philosophy, and poetry, and a master's degree in photography. He works as a documentary photographer and videomaker and he has co-created multimedia projects like «P A R I S N E S S» (Paris, 2015),»HAIKU» (Roma, 2011), and «Silencio» (Munich, 2021).

In recent years, he has focused his efforts on various multimedia research-oriented projects, among them I N S C T S. Reccomended to the World Press 2025, I N S C T S was displayed at Glass Box Gallery in California and - as part of "Energy: Redistributing Power and Taming Consumption" by FUTURES Photography - at FOTODOK (Utrecht, NL), PhotoIreland (Dublin, IRE), and at the Robert Capa Contemporary Photography Center (Budapest, HUN).

RESEARCH QUESTION

I N S C T S, in collaboration with the research project: Multidimensional assessment of the potential of insects for sustainable agri-food systems

My artistic practice seeks to bridge research and the public, fostering awareness of critical issues and inspiring dialogue. The consequences of human impact on the environment are increasingly affecting more people. The global food system is highly extractive, and by 2050—when the global population is predicted to approach 10 billion—agriculture is expected to fall short of meeting the world's food supply needs. The integration of insects into sustainable agricultural practices is the focus of an interdisciplinary study conducted by Karol Barragán Fonseca, with whom I collaborated during my time at the Institut de Recherche sur la Biologie de l'Insecte (IRBI). This shift also requires cultural adaptation. Through photographs, scientific imagery, and data visualizations, H Y P E R S Y S T M S - the series I created - aims to highlight the complex beauty and ecological importance of insects, offering viewers a compelling visual journey.

Jill Heathcock

Period: May, 2024 - July, 2024
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Research Professorship
Speciality: Neurodevelopmental Disabilities
Previously: The Ohio State University - USA
Research institute: Imaging, Brain and Neuropsychiatry (iBrainN) / INSERM, University of Tours, Tours
Host scientist: Frédérique Bonnet-Brilhault & Delphine Mitanchez

BIOGRAPHY

Jill Heathcock is a pediatric physical therapist with a PhD in Biomechanics and Movement Science. She is a Professor at The Ohio State University and director of the Pediatric Assessment and Rehabilitation Laboratory (PEARL Lab) and directs the PhD program in Health and Rehabilitation Sciences. Dr. Heathcock's work focuses on assessment and rehabilitation for infants and children with neurodevelopmental disabilities.

RESEARCH QUESTION

Assessing children's behaviors is key to identifying those with neurodevelopmental disabilities

Thanks to advancements in digital tools, we can now use things like video and audio recordings, along with data collected from parents and healthcare providers, to better detect these conditions. This study aimed to test how practical and acceptable it is to collect video and audio recordings of infants' natural movements and sounds, both in the hospital and at home, to assess their development. Eleven infants and their families participated in this study to test the approach. The recruitment, enrollment, and retention rates were good, helping guide future studies on a larger scale. The biggest challenge for recruiting participants was not knowing when infants would be discharged from the hospital. For remote sessions conducted at home, the most common challenges were overcoming technical difficulties. To address these, in-person parent training, reminders via calls and texts, consideration of holiday schedules, and tech support were provided to make things easier. Questionnaire responses showed that parents found the assessments (motor skills, voice, and parent-reported outcomes) to be acceptable and were supportive of continuing for a longer follow-up period. The early results suggest that using digital assessments for motor, voice, and clinical tools is promising. Assessing infants' natural movements and sounds appears to be feasible and widely accepted, and it could eventually help create new ways to diagnose and predict autism and other neurodevelopmental conditions. This larger scale project has recently received funding by Foundation France.

Lindy Holden-Dye

Period: October, 2024 - March, 2025
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Visiting Researcher
Speciality: Invertebrate Neuroscience
Previously: University of Southampton, UK
Research institute: Infectiology and Public Health (ISP) / Centre INRAE Val-de-Loire, University of Tours, Tours
Host scientist: Fotini Koutroumpa

BIOGRAPHY

Professor Lindy Holden-Dye (PhD, BSc, MSc, PhD, FRSB, FBPhS) holds a personal Chair in Neuroscience within Biological Sciences at the University of Southampton, UK. Her expertise in invertebrate neuroscience, and in particular nematode neural systems and the model genetic organism *Caenorhabditis elegans* positions her well to participate in drug discovery and mode of action programmes for novel antiparasitics. For the last two decades she has collaborated with industry to improve prospects for parasitic nematode control.

RESEARCH QUESTION

Novel control strategies for arthropod pests through characterisation of their essential ion channels in a Caenorhabditis elegans expression platform

How can we kill pests that damage our crops and harm livestock without collateral damage to our precious ecosystems? Biologists have a key role to play here by providing insight into the neural mechanisms that are vital to the survival of the pest, in particular the chemosensory processing that enables them to interact in a very precise manner with their environment. Understanding this will help with developing control strategies that are detrimental to pests and leave other organisms unharmed. But studying this in the pests themselves is technically challenging. To circumvent this sort of problem biologists often use 'model' systems. We are using a microscopic nematode worm, Caenorhabditis elegans as an experimental platform to characterise the chemosensory components of the nervous systems of pests. The ambition is to resolve the signals in the environment that are essential for the pest to find a host or mate, and also identify the pest receptor that detects the signal and ultimately explore ways to use this new knowledge to trap or stop the pest in its tracks.

Johannes Kaesmacher

Period: September, 2024 - August, 2025
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Visiting Researcher
Speciality: Neuroradiology
Previously: University of Bern - CH
Research institute: Clinical Investigation Centre of Tours - Technological Innovation, Regional Hospital University in Tours, Tours
Host scientists: Grégoire Boulouis

BIOGRAPHY

After completing his general radiology training at the Technical University Munich and University of Bern, Dr. Kaesmacher took a position as a physician and lecturer at the University Institute of Diagnostic and Interventional Neuroradiology at the University Hospital Bern. In Bern, he is leading the research group "Acute stroke interventions and hyperacute imaging" at the Stroke Research Center. His research focusses on the value of thrombolysis in contemporary endovascular stroke treatment and new techniques of perioperative imaging. Currently he is involved in multiple ongoing international randomized clinical trials and is active in international societies in order to promote clinical and scientific collaboration and training throughout Europe.

RESEARCH QUESTION

PeRfusiOn Post tHrombEcTomy (PROPHET) - A technical development and clinical validation project

Mechanical extraction of clots with specialized catheters has become the standard of care for treating stroke patients presenting with a large intracranial occlusion. However, in more than half of the treated patients, remaining small vessel occlusions (e.g. due to clot fragmentation during the procedure) limit the benefit of this therapy. In current clinical routine, the detection of these small remaining vessel occlusions and the decision for further treatment by the operator is based on 2D angiographic images. This technique has several limitations, mainly due to its two-dimensional nature. Recently, a new imaging technique, with the possibility to acquire whole brain 3D time-resolved perfusion directly in the operating room was technically made possible. It can overcome the many limitations of 2D angiographic images, but processing algorithms and clinical validation are currently lacking. The project realized in the framework of the LE STUDIUM fellowship aims to develop, implement and validate this technique for evaluating brain reperfusion in the acute phase.

Serhat Karaca

Period: July, 2024 - June, 2025
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Guest Researcher
Speciality: Animal Science
Previously: Van Yuzuncu Yil University - TR
Research institute: Physiology of Reproduction and Behaviour (PRC) / Centre INRAE Val-de-Loire, CNRS, University of Tours, IFCE, Tours
Host scientist: Raymond Nowak

BIOGRAPHY

Serhat Karaca earned his PhD in Animal Science from Van Yüzüncü Yıl University in Türkiye, where he is currently a full-time Professor, lecturing and conducting research. His research aims to understand how physical and social environmental stress factors affect the behavior, performance, and meat quality of ruminants, particularly sheep and goats. In this context, he examines the behavioral and physiological stress responses of various breeding practices in ruminants to enhance these traits. He is currently leading research work on the role of temperament in sheep and their reactivity in rearing systems that may challenge their robustness. His research has focused on factors influencing the ability to cope with stress particularly in relation to motheroffspring behaviors, welfare and various performance parameters.

RESEARCH QUESTION

Alternative practice to artificial feeding in goat farming: consequences on behaviour, microbiota, health and milk quality

The artificial rearing of dairy goat kids, involving mother-offspring separation at birth, is widely used in intensive farming to mitigate health risks such as CAEV and paratuberculosis. However, this method raises concerns about its impact on goat welfare and behavioral development. This project, funded by INRAE for 24 months, aims to evaluate natural rearing practices as alternatives, focusing on their effects on animal welfare, behavior, productivity, and health. Two approaches will be tested: 1) housing kids with non-lactating «nanny» goats for social enrichment and 2) allowing mothers to nurse their young while being machine-milked. The study will assess benefits such as social enrichment, microbiome development, and health improvements, as well as risks like pathogen transmission. By comparing artificial rearing, nanny presence, and maternal nursing, the project seeks to determine the optimal balance between welfare, health standards, milk quality, and farm management efficiency through a multidisciplinary approach.

Yu Kimura

Period: November, 2023 - April, 2024
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Guest Researcher
Speciality: Biomaterials, Organic Chemistry
Previously: Kyoto University - JP
Research institute: Center for Molecular Biophysics (CBM) / CNRS, Tours
Host scientist: Eva Jakab Toth

BIOGRAPHY

Yu Kimura obtained his PhD in polymer chemistry from Kyoto University, Japan in 2009 on the development of tissue regeneration scaffolds with controlled release of bioactive molecules. After a postdoctoral experience in Tsukuba, Japan and program-specific employment in Kyoto University, he is currently an Associate Professor of Department of Energy and Hydrocarbon Chemistry, Graduate School of Engineering, Kyoto University. His specialty is biomaterial science, and the specific expertise at present is in contrast agent synthesis for magnetic resonance imaging (MRI), fluorescence imaging and photoacoustic imaging (PAI). His current research interests are the imaging of various tumors and oxygenation status of tissues and their treatment through theranostics.

RESEARCH QUESTION

Nanoparticle contrast agents: synthesis and characterization

This project aims to develop novel, innovative, more efficient, and safer Gd-MRI contrast agents through clarification of the proton relaxation mechanism with novel nanoparticulate Gd contrast agents by Nuclear Magnetic Relaxation Dispersion (NMRD) study, an expertise that the host group possesses. Gadolinium (Gd) has seven unpaired electrons in the 4f orbital and has the effect of shortening the longitudinal relaxation time of protons' magnetization. Then, it is known as a highly "positive contrast agent" on magnetic resonance imaging (MRI). At present, chelate-type MRI contrast agents are widely used in clinics because of preventing the toxicity of Gd3+ ions. Through collaboration, we can measure the effect of shortening the proton relaxation time for various nanoparticulate gadolinium species with different particle sizes, by using the NMR relaxometer. The obtained results open the possibility to use these systems for in vivo MRI contrast imaging at the cellular or tissue level, leading to early detection and treatment of various diseases.

Vera Mazurak

Period: January, 2024 - May, 2024
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Visiting Researcher
Speciality: Nutrition and Metabolism
Previously: University of Alberta - CA
Research institute: Niche, Nutrition, Cancer & Oxidative metabolism (N2COX) / INSERM, University of Tours, Tours
Host scientist: Stéphane Servais

BIOGRAPHY

Dr. Mazurak earned her PhD in Nutrition and Metabolism at the University of Alberta where she is currently a Professor. Her research interests relate to lipid metabolism in disease states with an emphasis on relationships between inflammatory processes and essential fatty acids. Her most recent work has focussed on defining nutritional requirements for people who have cancer and finding ways to overcome malnutrition during cancer therapies and advanced disease. She conducts clinical trials and also uses experimental models in her translational research program. In addition to her research, she teaches a course on Nutrition and Metabolism Related to Cancer and has been awarded for her teaching in the Nutrition and Food Science undergraduate program at the University of Alberta.

RESEARCH QUESTION

Promotion of Muscle Homeostasis by Essential Fatty Acids

Muscle is essential for movement and vitality, but becomes perturbed in disease states such as cancer. Muscle loss (atrophy) and fatty infiltration of muscle (myosteatosis) are prevalent in people with cancer and are exacerbated during treatment with anti-neoplastic drugs (chemotherapy) and hasten death and reduce treatment response. Mitochondria convert food sources of fuel into energy by muscle cells. Muscle loss may be evoked by disruptions in normal mitochondrial function. In both clinical and experimental studies, the essential fatty acids, EPA (C20 :5n-3) and DHA (C22 :6n-3) are beneficial for muscle health, although the underlying reasons for these effects remain incompletely characterized. Research during the fellowship explored the concept that muscle becomes perturbed as a result of altered mitochondrial function, and these underlying pathways are further exacerbated by exposure to chemotherapy agents. EPA and DHA restore muscle health by limiting alterations in mitochondrial bioenergetics via changes in the fatty acid composition of cell and mitochondrial lipids.

Vincent Pecoraro

Period: April, 2024 - July, 2024
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Research Professorship
Speciality: Chemistry/Biophysics
Previously: University of Michigan - USA
Research institute: Center for Molecular Biophysics (CBM) / CNRS, Orléans
Host scientist: Stéphane Petoud & Svetlana Eliseeva

BIOGRAPHY

Vincent Pecoraro (BS, Biochemistry, UCLA, 1977), PhD (Chemistry, 1981 (Ken Raymond) UC, Berkeley) and NIH postdoc fellow (UW, Madison, Mo Cleland). He joined the faculty at UM, Ann Arbor in 1984 and is now the John Groves Collegiate Professor of Chemistry. He has been a visiting Professor at UNC, Chapel Hill, Princeton, ENS-PSL (Ulm), Univ. Paris-Saclay, Univ. of Westfalen and AMU. He served as an editor for the journal Inorganic Chemistry for 20 years, was President of SBIC, chair of multiple international meetings on Bioinorganic Chemistry. Awards include: Alexander von Humboldt Senior Scientist, Blaise Pascal Chair, ACS-SNC Lecturer, ACS award for Advancement of Inorganic Chemistry and Doctor Honoris Causa from Aix-Marseille University. He has an h-index of 97 with ~27,000 citations.

RESEARCH QUESTION

Lanthanide Based Metallacrowns as Near-Infrared Emitting Biological Probes

Prof. Pecoraro's research focuses generally on bioinorganic chemistries. At this point, he investigates two main areas: methods of designing, using first chemical principles, metalloproteins and enzymes and the synthesis and characterization of metal sequestering agents known as metallacrowns (MC), which his group discovered in 1989. The latter topic is the subject of his collaboration with Drs. Petoud and Eliseeva at the CBM. Our objective is to prepare small molecules that contains lanthanides capable of emitting Near Infrared Light (NIL). The ultimate goal is to convert these molecules into biosensors that may be used in applications from studying cellular pathologies or metabolism to applications in whole animal research and, eventually, for luminescent guided surgery. The specific aim of the past year has been to attach organic and inorganic antenna to the MC to enhance long wavelength stimulation of lanthanide emission. This ability would provide for penetration of light deep into an animal, allowing for subsequent NIL emission that could be used for tumor diagnosis in humans.

Remo Russo

Period: October, 2023 - September, 2024
Programme: ARD CVL BIOPHARMACEUTICALS PROGRAMME
Award: LE STUDIUM Visiting Researcher
Speciality: Immunity, Infection and Immunotherapy
Previously: Federal University of Minas Gerais - BR
Research institute: Immuno – Neuro Modulation (INEM) / CNRS, University of Orléans, Orléans
Host scientist: Valérie Quesniaux

BIOGRAPHY

Remo Russo, a biologist with an advanced PhD in immunology, has 17 years of experience in immunopharmacology, studying various aspects of lung diseases such as Th2 and fibrogenic diseases (chronic lung inflammation and tissue repair), pharmacological mechanisms and regulation. Since 2011 he is Associate Professor and Head of the Laboratory of Pulmonary Immunology and Mechanics at the Department of Physiology and Biophysics of the Institute of Biological Sciences at the Federal University of Minas Gerais/UFMG (Belo Horizonte - Brazil).

RESEARCH QUESTION

Autologous transplantation of myeloid cells reprogrammed ex-vivo by STING-Dependent Adjuvants (STAVs) as an alternative cell therapy for the treatment of Idiopathic Pulmonary Fibrosis

Fibrotic lung diseases, characterized by excessive collagen deposition in response to epithelial injury, such as pulmonary fibrosis, are chronic and debilitating conditions associated with decreased life expectancy. Although lung transplantation offers an alternative, various constraints, including a scarcity of suitable donors, high surgical risks, post-transplant rejection, and adverse effects of immunosuppressive drugs, limit its feasibility. This project proposes a novel cell therapy approach involving the autologous transplantation of myeloid cells that have been ex-vivo trained using STING-Dependent Adjuvants (STAVs), which activate the STING pathway and possess anti-fibrogenic properties, as a non-pharmacological alternative treatment for pulmonary fibrosis. The project aims to investigate the effects of myeloid cell transplantation on lung and gut microbiota during pulmonary fibrosis. By mitigating morbidity and mortality, this approach aims to enhance patient quality of life, reduce transplant waiting lists, and alleviate public healthcare costs associated with patient treatment and hospitalizations.

Sergey Samsonov

Period: July, 2024 - October, 2024
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Visiting Researcher
Speciality: Computational Chemistry
Previously: University of Gdańsk – PL
Research institute: Centre for the Study of Respiratory Pathologies (CEPR) / Inserm, University of Tours, Tours
Host scientist: Fabien Lecaille

BIOGRAPHY

Sergey Samsonov graduated in Biophysics at St. Petersburg Polytechnic University in 2006. He obtained his PhD in 2009 in Bioinformatics at Dresden University of Technology, where he started working in the field of modeling glycosaminoglycans (GAGs) as a postdoctoral researcher. Since 2017, he has been a PI at the University of Gdańsk, obtaining his HDR from the University of Tours in 2018 and a Professorship from the President of Poland in 2024. His research focuses on understanding biologically relevant GAG interactions and developing GAG specific computational approaches using molecular docking, dynamics, free energy calculations and quantum chemistry.

RESEARCH QUESTION

Computational approaches for cathepsin-glycosaminoglycan systems

Glycosaminoglycans (GAGs) are anionic linear periodic polysaccharides and key components of the extracellular matrix, crucial for numerous cellular processes, which disruptions can lead to pathologies, including cancer, Alzheimer's, Parkinson's, infectious diseases (e.g., SARS-CoV-2), autoimmune and inflammatory disorders. Protein-GAG interactions, underlying these processes, are therefore promising therapeutic targets but remain poorly characterized. Both classical structural methods and computational approaches struggle with GAG properties such as length, flexibility, periodicity, symmetry, multipose binding and sulfation pattern diversity. Consequently, there are few experimental structures containing GAGs. This project aims to study GAG interactions with cysteine cathepsins, proteases implicated in severe pathologies like osteoporosis, rheumatoid arthritis and autoimmune diseases.

Anna Wawruszak

Period: September, 2024 - November, 2024
Programme: GreenCosmIn
Award: LE STUDIUM Visiting Researcher
Speciality: Life and Health Sciences
Previously: Medical University of Lublin - PL
Research institute: Center for Molecular Biophysics (CBM) / CNRS, Orléans
Host scientist: Catherine Grillon

BIOGRAPHY

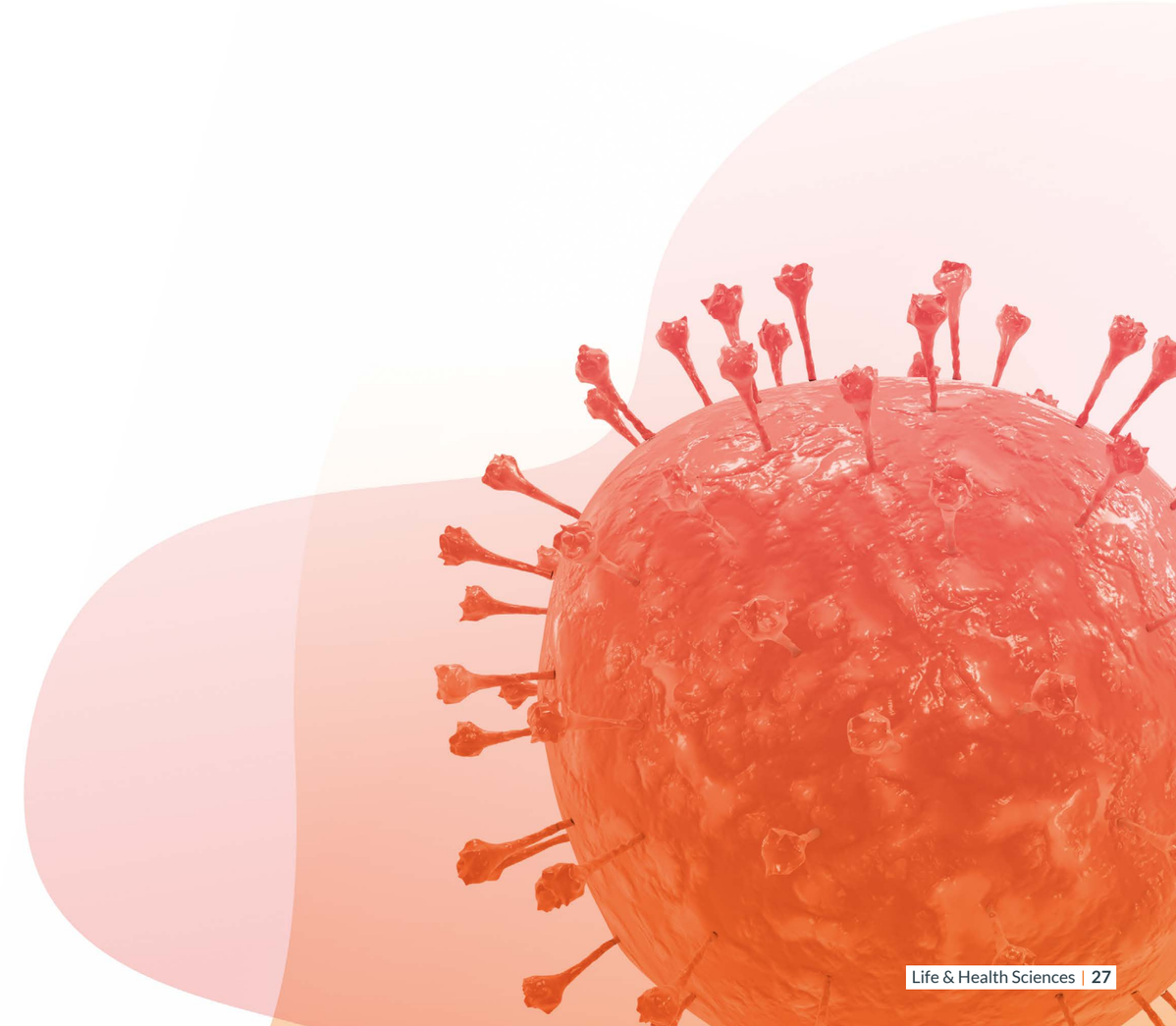
Graduated from Maria Curie-Sklodowska University in Medical Biotechnology and Chemistry of Bioactive Agents and Cosmetics (master's degree studies) in 2013 and 2014, respectively, and got her PhD at the Department of Biochemistry and Molecular Biology at the Medical University in Lublin. Since then, she has been working at the Medical University of Lublin as a postdoc, researcher and, finally, a group leader (Associate Professor). Her primary expertise lies in translational medicine, epigenetics and breast cancer research. Her works are mainly focused on the anti-cancer activity of histone deacetylase inhibitors in breast cancer models. She has also an interest in green chemistry and biotechnology approaches for the development of nature-based cosmetics.

RESEARCH QUESTION

GreenCosmIn - green chemistry and biotechnology approaches for the development of nature-based cosmetics

GreenCosmIn aims to establish a robust, multisectoral, and interdisciplinary network to implement environmentally friendly approaches in the exploration and exploitation of natural resources, with a focus on cosmetics production. The project will assess the biological activity of selected lead extracts and/or isolated compounds using various platforms, including in vitro tools, with keratinocytes and melanoma monolayer and 3D models tested under different oxygen concentration conditions (normoxia/hypoxia). In vitro screening of extracts, fractions, or isolated/semisynthesized compounds will be conducted to evaluate their ability to inhibit specific enzymes relevant to cosmetic applications. Following treatment with natural products, parameters such as antioxidant activity, lipid peroxidation, skin aging, pigmentation, ROS production, or SOD catalase activity will be determined.

This project has received funding from the Horizon Europe research and innovation programme under the Marie Skłodowska-Curie Staff Exchanges Action Grant Agreement No 101131346.



LE STUDIUM RESEARCH CONSORTIUM

PHARMACOLOGICAL INHIBITION OF CATHEPSIN C IN NEUTROPHIL-MEDIATED INFLAMMATORY DISEASES

Brice Korkmaz

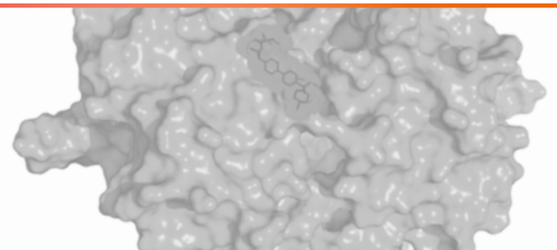
LE STUDIUM Research Consortium Coordinator

BIOGRAPHY

Brice Korkmaz received his PhD from the University of Tours in 2005. He was recruited by INSERM in 2009 after postdoctoral placements in France (Tours, INSERM U-618), U.S. (Seattle, University of Washington) and Germany (Munich, Max Planck Institute). He is the head of the INSERM U-1100 Team 2 Proteolytic enzymes and their pharmacological inhibition in lung diseases. He has extensive expertise in biochemistry and in neutrophil serine protease (NSPs). He coordinated several projects from various foundations, local authorities and pharmacological companies with a view to new therapeutic approaches to chronic inflammatory lung diseases. His research team established proof-of-concepts in vitro and in vivo for the inactivation of NSPs by blocking of cathepsin C. He is the Chair of International Consortium on Cathepsin C (ICat-CC) since 2016.

RESEARCH QUESTION

Inflammation-mediated immune cell alterations are associated with many diseases, including acute, chronic inflammatory diseases and cancer. Current therapies of inflammatory diseases fail to fully control inflammatory processes in patients. There is an unmet need for new therapies that go beyond symptomatic relief and transient delay of disease progression. Neutrophil serine proteases (NSPs) are locally released in response to pathogens and many other non-infectious danger signals. Uncontrolled NSPs are considered as important therapeutic targets in inflammatory diseases. Our project focuses on a novel approach to control the excessive activity of NSPs in neutrophil-mediated inflammatory diseases. Our innovative initiative is dedicated to establishing an efficient anti-proteolytic therapy upstream of NSPs by blocking “directly” or “indirectly” their maturing enzyme, cathepsin C. Five participants of “ICat-CC” have joined forces to implement their initial CatC-specific ideas and to develop an even broader program as a consortium named “Euro-CatC”.



Partners

Rich Williams
is an expert in medicinal chemistry
> Queen’s University Belfast - United Kingdom

Önder Yildirim
is an expert in chronic inflammatory lung diseases
> Helmholtz Munich - Germany

Sevil Korkmaz-Içöz
is an expert in heart transplantation
> University Hospital Heidelberg - Germany

Antonia Vlahou
is an expert in proteomics research
> Academy of Athens - Greece

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LE STUDIUM RESEARCH CONSORTIUM

I-5HT7NET: A CONSORTIUM BY SCIENTISTS FOR SCIENTISTS IN SEROTONIN RESEARCH WITH FOCUS ON 5-HT7 RECEPTOR

Séverine Morisset-Lopez

LE STUDIUM Research Consortium Coordinator

BIOGRAPHY

Dr Morisset-Lopez obtained her PhD in Molecular Pharmacology from Paris V University in 1999 and joined the Center of Psychiatry and Neurosciences in Paris in 2002 as CNRS researcher. She is currently a senior scientist at the Center for Molecular Biophysics (Orléans, France) where she leads «Neurobiology of receptors and therapeutic innovations" (NeuRIT) team. Her main research interests focus on G protein-coupled receptors pharmacology and the neurobiological mechanisms underlying central nervous system disorders. Her current studies explore the pharmacology of the serotonin 5-HT7 receptor, its biased signaling and its role in pain and neuroinflammatory diseases such as multiple sclerosis. For that purpose, her team sets up various cellular assays, based on biophysic methods for drug screening and the study of cell signaling.

RESEARCH QUESTION

Science is necessarily an international endeavor, advancing through collaboration. This consortium aims to enhance global understanding on the serotonin 5-HT7 receptor, which is highly expressed in brain and implicated in neuropathological disorders. The three objectives are to 1) create a first and comprehensive website dedicated to the 5-HT7R (expression, pharmacology, physiology, pathology...). This would make it possible to consolidate and share a wide range of information on this receptor 2) organize a conference that brings together 5-HT7R researchers 3) develop a collaborative research project on the therapeutic potential of 5-HT7R. Therefore, we have constituted a multi-disciplinary consortium which includes chemists, pharmacologists, neuroscientists and clinicians. This consortium can ensure the design and the monitoring of studies from the molecular level to translational studies, which represent a strength to build a new program of research and achieve the project with success.

Partners

Stéphanie Watts
is an expert in serotonergic pharmacology and specifically venous serotonergic mechanisms
> Michigan State University - USA

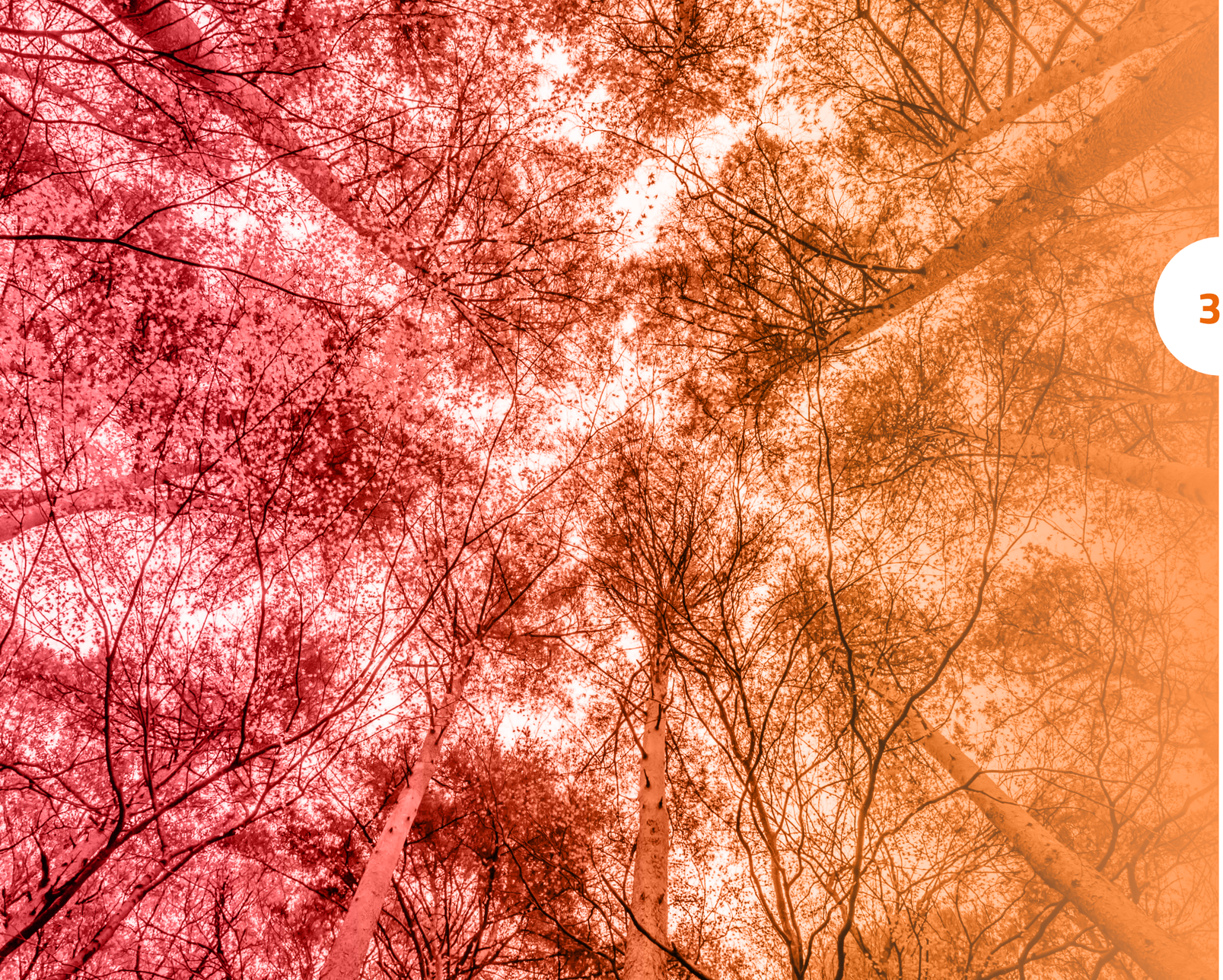
Andrzej Bojarski
is an expert in ligand design, virtual screening, synthesis, in vitro characterization
> Maj Institute of Pharmacology Polish Academy of Sciences - Poland

Michel Bader
is an expert in drug development for serotonin synthesis inhibition
> Max-Delbrück-Center for Molecular Medicine (MDC) - Germany

Kara Margolis
is an expert in role of 5-HT in enteric nervous system development and function as well as afferent signaling
> NYU Pain Research Center - USA

Franck Suzenet
is an expert in medicinal chemistry and fluorescent ligands
> Institute of Organic and Analytical Chemistry - France

Maud Pallix-Guyot
is an expert in neurologism
> Hospital Center Universitaire d'Orléans - France



3 EARTH, ECOLOGY & ENVIRONMENTAL SCIENCES

Lauren Beckingham

Period: September, 2024 - July, 2025
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Visiting Researcher
Speciality: Environmental geochemistry
Previously: Auburn University – USA
Research institute: Earth sciences institute of Orleans (ISTO) - CNRS, BRGM, OSUC / University of Orléans, Orléans
Host scientist: Cyprien Soulaine

BIOGRAPHY

Lauren E. Beckingham is the W. Allen and Martha Reed Associate Professor and Associate Chair of the Department of Civil and Environmental Engineering at Auburn University. She holds a Ph.D. and M.A. in Civil and Environmental Engineering from Princeton University and a B.S. in Environmental Engineering from Michigan Technological University. Prior to joining Auburn, she was a Geochemical Postdoctoral Fellow at Lawrence Berkeley National Laboratory. Her expertise and interests are in environmental geochemistry, flow, and transport in subsurface energy systems. She is a recipient of an ACS PRF Doctoral New Investigator Award, NSF CAREER award, DOE Early Career Research Program Award and 2021 Applied Geochemistry Emerging Investigator Award from the International Association of GeoChemistry.

RESEARCH QUESTION

Multi-scale observation and simulation of mineral reactions in subsurface energy systems

Subsurface geologic formations are critical in facilitating the energy transition to net zero. Such formations serve as storage reservoirs for anthropogenically produced CO2, radioactive waste from nuclear energy facilities, and renewable energy, in the form of H2 storage or geothermal energy generation. In such systems, mineral reactions can occur over a wide range of spatial (nm to km) and temporal (s to 100s of years) scales, impacting formation properties and the efficiency, risk, and environmental impact of such systems. Accurate understanding and prediction of mineral reactions in these systems is highly challenging due to the heterogenous nature of these systems but essential for site selection, risk assessment, and engineering design. The overall goal of this project is to enhance understanding and simulation of mineral precipitation reactions and reaction rates in porous media at the micro- to macro- scale to better understand and predict implications for geothermal, geologic CO2 sequestration, and subsurface H2 storage systems.

Alison Bennett

Period: August, 2024 - January, 2025
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Visiting Researcher
Speciality: Ecology
Previously: Ohio State University - USA
Research institute: Insect Biology Research Institute (IRBI), University of Tours / CNRS, Tours
Host scientist: David Giron

BIOGRAPHY

Alison Bennett has over 20 years experience studying the impacts of microbes on plants and the insects with which they associate. Dr. Bennett is an Associate Professor in the Department of Evolution, Ecology, and Organismal Biology at the Ohio State University in the US where her research explores the role of microbes in multispecies interactions with plants, traits of microbes, and evolution within microbiomes. Much of Dr. Bennett's work is conducted in collaboration, and she leads an effort at Ohio State University to train PhD students in the soft skills necessary to build teams to conduct interdisciplinary research.

RESEARCH QUESTION

How do soil microbes influence plant attraction of insect herbivores and/or parasitoids of herbivores?

Plants face many enemies, and, unlike animals, they cannot run away from herbivores. But plants don't face enemies alone—they get help from the beneficial microbe arbuscular mycorrhizal (AM) fungi. AM fungi prime plants for faster immune responses against herbivores. Plant immune systems recognize antagonists and activate defense responses. Chewing herbivores have been shown to respond to priming of direct and indirect defenses in plants. Direct defenses include changes in plant secondary metabolites. Indirect defenses recruit insect enemies of herbivores by releasing volatile metabolites detected by herbivore enemies. Early work suggests AM fungi prime direct defenses and impact chewing herbivores more than sap-feeding herbivores, but this research focus has prevented understanding impacts of priming on sap-feeding herbivores (e.g., aphids). In collaboration with IRBI colleagues, Ali Karley (UK) and Maria J. Pozo (ES) I addressed whether AM fungi promote priming of indirect defenses in response to aphids.

Giulia Cozzani

Period: November, 2024 - November, 2025
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Integration Fellowship
Speciality: Space physics, Plasma physics
Previously: University of Helsinki - FI
Research institute: Laboratory of Physics and Chemistry of Environment and Space (LPC2E) / CNRS, University of Orléans, CNES, Orléans
Host scientist: Matthieu Kretzschmar

BIOGRAPHY

Giulia Cozzani received her PhD jointly from Paris-Saclay University (École Polytechnique, Palaiseau, France) and the University of Pisa (Pisa, Italy) in 2019. She subsequently held postdoctoral research positions at the Swedish Institute of Space Physics in Uppsala, Sweden (2019–2021), and the University of Helsinki in Finland (2021–2024). Her expertise lies in space physics and plasma physics, with a particular focus on magnetospheric physics. Her research focuses on understanding magnetic reconnection and fundamental plasma processes, such as plasma waves and instabilities, within the context of Earth's magnetosphere. To investigate these phenomena, she combines in situ spacecraft observations with numerical simulations.

RESEARCH QUESTION

Unraveling energy conversion in space plasmas

Understanding how energy conversion occurs in collisionless plasmas is a complex open problem at the core of space plasma physics and astrophysics. Collisionless magnetic reconnection is arguably the major plasma process responsible for energy conversion, prevalent across a multitude of space and astrophysical contexts. Magnetic reconnection is a particularly crucial phenomenon in the Earth's magnetosphere, also for its role in space weather processes and terrestrial dynamics.
The goal of this project is to achieve a deeper understanding of the energy conversion associated with magnetic reconnection, focusing on the kinetic electron scales. This project applies and integrates different theoretical frameworks, including cutting-edge methods based on the velocity distribution function of the plasma species. Near-Earth plasmas offer an exceptional laboratory for studying energy conversion processes at kinetic scales, as they are sampled in detail by the NASA's Magnetospheric Multiscale (MMS) spacecraft mission, with unprecedented high-resolution particle measurements.

Antonio Hernandez-Lopez

Period: March, 2024 - July, 2024
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Visiting Researcher
Speciality: Ecological and Evolutionary Genomics
Previously: National School of Higher Studies - MX
Research institute: Insect Biology Research Institute (IRBI), University of Tours / CNRS, Tours
Host scientist: Carlos Lopez-Vaamonde

BIOGRAPHY

I earned my PhD in Evolutionary Biology from Imperial College, London in 2005. Currently, I serve as a PI and full professor at the Agrogenomic Sciences department of the ENES - UNAM in León, Mexico, where I teach ecological genomics, evolution, and population genomics at both undergraduate and graduate levels. My research focuses on understanding the ecological and evolutionary mechanisms shaping biotic interactions in agricultural and disturbed ecosystems. One area I investigate is plant-insect interactions in pest and invasive species contexts, considering the impacts of climate change and agricultural intensification. Additionally, I use a number of meta genomic approaches to describe and monitor biodiversity in a wide range of organisms, from microbes to insects, and evaluate the impact of human activities on both diversity and function of communities.

RESEARCH QUESTION

Characterizing hyperdiverse insect communities of tropical dry forests using high-throughput molecular approaches

Metagenetic and metagenomic techniques provide ecological information that can be retrieved in the form of estimates of alpha and beta diversity. In Mexico, the tropical deciduous forest (TDF) is one of the most important ecosystems in terms of its extent and diversity, though it has been drastically reduced along the country in the last decades due to intensive anthropogenic activity. In this study, we performed a biodiversity assessment and monitoring of leaf mining herbivorous insects in two regions composed of TDF using metabarcoding and barcoding data to investigate the effects of regional and local disturbances in alpha, beta and functional diversity.

Cuauhtémoc Sáenz-Romero

Period: March, 2024 - July, 2024
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Visiting Researcher
Speciality: Forest Genetic Resources Management considering Climatic Change
Previously: Universidad Michoacana de San Nicolás de Hidalgo - MX
Research institute: Integrated Biology for the Development of Tree and Forest Diversity (BioForA), Centre INRAE Val-de-Loire / ONF, Orléans
Host scientist: Philippe Rozenberg

BIOGRAPHY

Professor at the Universidad Michoacana de San Nicolas de Hidalgo, Morelia, Michoacán, Mexico. Bachelor degree in Biology (Metropolitan University - Xochimilco, Mexico city), Master in Forestry Sciences (Autonomous University Chapingo, State of Mexico) and Ph.D. in Forestry (University of Wisconsin-Madison, USA). Sabbatical years at: Centre de foresterie des Laurentides, Quebec city, Canada; UMR Biodiversite Genes & Communautes, INRA, Cestas, France; UMR BioForA, INRAE, Orleans, France. Research interest is about the management of forest genetic resources considering climatic change: estimation of genetic differentiation (for quantitative/adaptive traits) among conifer populations (along altitudinal gradients), to decide seed and seedling movements for reforestation programs.

RESEARCH QUESTION

Plasticity of growth and wood formation in response to climatic change in forest trees

The 2023-2024 El Niño induced an acceleration of global warming that far exceeded 1.5°C, bringing several forests close to critical tipping point. The time has come to address painful forest management decisions. Our project aims to (a) To develop wood ring microdensity profile response (to climatic variables) functions of *Pseudotsuga menziesii* (Douglas fir, a conifer) provenances (populations originated from Washington state, Oregon, Interior and Coastal California, USA), growing in Corsica and Massif Central, France, in common garden experiments as exotic, to understand how wood microdensity formation respond when a tree is growing on a climate different to the climate of the seed source origin, and (b) To generate a preliminary assessment of the adaptive limits (expressed in survival, growth and budburst phenology) of Larix decidua (a deciduous native conifer) to a set of contrasting environments from a clonal elevational reciprocal transplant test in the French Alps, to select provenances more resistant/tolerant to warmer and drier summers in the region.

Thomas Shea

Period: September, 2024 - June, 2025
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Visiting Researcher
Speciality: Volcanology (Earth Sciences)
Previously: University of Hawai'i at Manoa - USA
Research institute: Earth sciences institute of Orleans (ISTO) - CNRS, BRGM, OSUC / University of Orléans, Orléans
Host scientists: Estelle Rose-Koga & Michel Pichavant

BIOGRAPHY

Pr. Tom Shea was born in France, pursuing studies in Earth Sciences there, until obtaining a MSc degree and moving to the University of Hawai'i (US) for his PhD in 2007. Tom obtained his degree in 2010 and stayed close to his Hawaiian volcanoes ever since. Now, as an associate professor, he eagerly researches volcanoes, combining field work and mapping with laboratory experiments, computer models, and state-of-the-art chemical analyses of lavas erupted worldwide. He built expertise through international collaborations, and is currently investigating how minerals in magmas record the timing of important magmatic events prior to eruptions. He is motivated by a thirst to understand the driving forces behind volcanic eruptions to better prepare residents for these natural hazards.

RESEARCH QUESTION

Timing Magma Transit in the Earth using Crystal Clocks

The earth counts no less than 47 currently active volcanoes, about half of which erupt yearly. Volcanologists strive to understand the magmatic 'pulse' of active volcanoes, why and when they erupt. Crystals in erupted lavas are like 'tree rings' that record their changing environments as they are transported in magma. These rings take the form of chemical changes that can be examined to reconstruct the complex path of magmas and the timing of important events (magma recharge). This project brings together experts from ISTO and Hawai?i for a laboratory study of how these chemical changes evolve through time. The objective of the research is to calibrate the mobility of these elements in minerals (e.g. Mg in feldspar) so that diffusive smearing of chemical zoning can be leveraged to obtain time information. Our experiments test whether the presence of a liquid 'melt' at high T influences the rate of element diffusion in minerals. This could have major impacts on our understanding of these mineral 'tree rings', and how they record events that led to volcanic eruptions.

Art Woods

Period: February, 2024 - May, 2024
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Visiting Researcher
Speciality: Insect physiology
Previously: University of Montana, Missoula - USA
Research institute: Insect Biology Research Institute (IRBI), University of Tours / CNRS, Tours
Host scientist: Jérome Casas

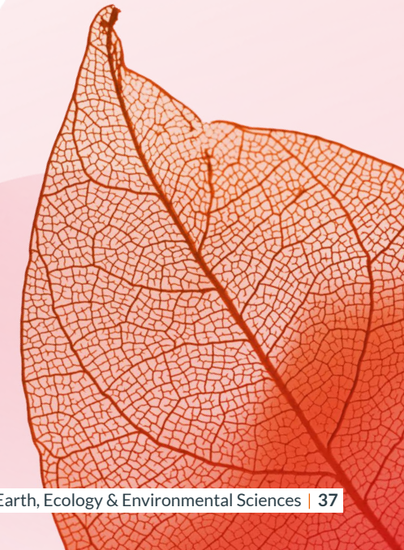
BIOGRAPHY

I obtained my PhD in 1998 at the University of Washington, then did postdoctoral research for three years at Arizona State University. Subsequently, I took a position of lecturer at the University of Texas at Austin before moving, in 2006, to a permanent position at the University of Montana. There, my lab has pursued two main goals. The first is to understand how insects sustain adequate levels of gas exchange across the development of different life stages and in variable environmental conditions. These studies have used both terrestrial and aquatic insects. The second goal has been to understand how insects interact with their local microclimates, a problem which is central to understanding insect responses to climate change. Currently, I am a co-editor-in-chief of Journal of Insect Physiology.

RESEARCH QUESTION

Application to microfluidics of chemically driven gas flows in insect tracheal systems

A key challenge in microfluidics is to drive gas and liquid flows through small, engineered channels. Current methods are limited, and bioinspired approaches could offer new solutions. Insects, particularly the insect tracheal system, provide potential models for such mechanisms. Tracheal systems deliver oxygen and remove carbon dioxide via air-filled tubes. We examined whether extreme pH gradients in the alimentary canals of larval Lepidoptera (caterpillars) drive gas flows in their tracheae. Their midgut, with highly alkaline pH (10–12), traps metabolic CO2 as bicarbonate and carbonate, which are transformed back into CO2 when re-acidified in the hindgut. This pH-driven phase transition likely drives posterior-to-anterior gas flows in longitudinal tracheae. We tested this hypothesis using numerical modeling and physical simulations of chemical reactors that mimick these conditions. Initial results suggest that the pH gradients drive internal recycling of CO2 but may not drive significant bulk flows of air. The models also suggest novel general principles that govern the evolution of insect tracheal systems.



LE STUDIUM RESEARCH CONSORTIUM

H'ALLO VOLCANO ! : AN INTERDISCIPLINARY STUDY ION THE ATMOSPHERIC PLUME PRECESSING AND IMPACTS OF VOLCANIC HALOGEN EMISSIONS

Tjarda Roberts

LE STUDIUM Research Consortium Coordinator

BIOGRAPHY

Dr Tjarda Roberts is a CNRS Researcher in atmospheric chemistry. Prior to moving to Orléans as a researcher at LPC2E (Laboratory of Physics and Chemistry of the Environment and Space), she undertook her PhD on volcanic plumes at the University of Cambridge, and postdoctoral research on Arctic pollution in Norway. Roberts currently teaches Géosciences at the LMD Paris Ecole Normale Superieure. Her group investigates the impacts of volcanic emissions and other pollutant sources to the atmosphere, through the development of numerical modelling tools that simulate the plume atmospheric chemistry processes, and in-situ "low-cost" sensor measurements of gases and particles at the volcano crater-rim. She was awarded the CNRS Bronze Medal in 2020, and her profile featured in a Bande Dessinée commissioned by CNRS dr08 "Les Sciences'Elles" in 2021.

RESEARCH QUESTION

The "H'allo Volcano!" Consortium seeks to improve understanding of the environmental impacts of volcanic halogens. As well as sulfur and ash, volcanoes emit halogens (HCl, HBr, HF, HI) to the atmosphere. These can be converted by chemical reactions within the plume into reactive forms such as BrO which cause the destruction of atmospheric ozone and deposition of toxic mercury. Plume halogen processes are complex, involve multi-phase chemical reactions, and occur over scales from meters at the hot 1000˚C crater vent up to 1000's km as the plume cools and is transported and dispersed downwind. Volcanic halogen emissions vary over time and depend on magmatic conditions. By combining the development of new models and satellite observations with field work measuring the plume of Mt Etna (Italy), we aim to decipher the atmospheric processing of volcanic halogens, and thereby quantify the chemistry-climate impacts of volcanic eruptions. With this knowledge we also seek to unlock the potential to use observations of volcanic BrO to inform the monitoring of eruptive activity hazards.

Partners

Jonas Kuhn
is an expert in developing remote sensing instruments for measuring and imaging volcanic gases such as BrO and SO2 and in high-temperature modelling of volcanic plume chemistry
> University of California - United States of America

Nicole Bobrowski
is an expert in field-observations at volcanoes, including remote sensing measurements which led to her discovery of volcanic BrO, and drone-based in-situ sampling of reactive halogens in volcanic plumes
> National Institute of Geophysics and Volcanology, Catania - Italy

Alexander Nies
is an expert in modelling volcanic plume chemistry from the hot emission to the cooled plume, including reactive halogens such as BrO and their impacts on ozone and mercury. Alexander is also experienced in remote sensing instrumentation from his masters research.
> LPC2E University of Orléans, France and University of Heidelberg - Germany

Thomas Wagner
is an expert in high-resolution TROPOMI satellite observations of volcanic BrO and SO2, that can be traced over days downwind, as leader of the MPIC Satellite Remote Sensing Group
> Max Planck Institute for Chemistry, Mainz - Germany

4 COMPUTER SCIENCE, MATHEMATICS & MATHEMATICAL PHYSICS

Kenji Fukushima

Period: December, 2024 - February, 2025
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Visiting Researcher
Speciality: Physics
Previously: University of Tokyo - JP
Research institute: Institut Denis Poisson / CNRS, University of Orléans, University of Tours, Tours
Host scientist: Maxim Chernodub

BIOGRAPHY

Kenji Fukushima was awarded the Ph.D. from The University of Tokyo in 2002. After graduation, he worked on theoretical properties of hot and dense matter created in high-energy heavy-ion experiments as a postdoctoral researcher at The University of Tokyo and continued his research on color-superconducting matter at Center for Theoretical Physics, MIT. Then, he moved to Brookhaven National Laboratory, where the heavy-ion experiments were conducted, and was engaged in the theory of partonic structures of nuclei. He got a tenured position at Yukawa Institute for Theoretical Physics, Kyoto University, in 2007. He was invited to Keio University as an Associate Professor in 2010, and currently, a full Professor at The University of Tokyo.

RESEARCH QUESTION

Quantum phases of matter in gravitational spacetimes

The origin of matter is theorized in a beautiful form of the non-Abelian gauge theory with fundamental degrees of freedom called quarks and gluons. These elementary particles bind to form protons and neutrons, and they constitute nuclei. The mass of matter spontaneously emerges from the dynamics of quarks and gluons, but its exact mechanism is yet to be explored. The theory can reliably be analyzed in extreme environments, such as high temperatures, rapid expansion/rotation, and large densities found over the history of the Universe. In the early Universe, the geometry was rapidly expanding, and the geometrical curvature caused phase transitions of matter at extremely high temperatures. Such special environments can be emulated in laboratory experiments with energetic nuclei, and the nature of phase transitions has been extensively studied, which would reveal the origin and the evolution of the world where we live. This research project is carried out in collaboration with Prof. Maxim Chernodub, with emphasis specifically put on the interplay between fast rotations and high temperatures.

Félix Iglesias Vázquez

Period: September, 2024 - December, 2024
Programme: ARD CVL JUNON PROGRAMME
Award: LE STUDIUM Research Professorship
Speciality: Machine learning and data analysis
Previously: Vienna University of Technology - AU
Research institute: Laboratoire Pluridisciplinaire de Recherche en Ingénierie des Systèmes, Mécanique et Energétique (PRISME) Laboratory / University of Orléans, INSA CVL, Orléans
Host scientist: Frédéric Ros

BIOGRAPHY

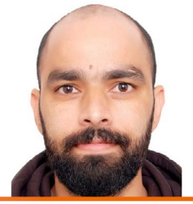
Dr Iglesias currently holds a Senior Scientist position at the Institute of Telecommunications, TU Wien. He has worked on AI and machine learning for more than 20 years, including R&D for companies in Spain and Austria, and facing challenges in diverse fields: smart grids, cyberphysical systems, industrial processes, behavioral modeling, network security, medicine, earth sciences, etc. For the academia, he has designed and lectured classes and laboratories in Spain, Austria and Ireland in electronics, physics, building automation, network security, machine learning and data analysis; also supervising projects and theses of students and junior scientists. He has published more than 50 papers in reputed scientific conferences and journals and reviewed for main venues related to machine learning and network security.

RESEARCH QUESTION

Development of digital twin software prototypes and validation of communication protocols

The JUNON programme aims to develop digital tools to improve the monitoring and understanding of the environment, with a better management of natural resources in the Centre-Val-de-Loire region.
Dr Iglesias is involved in the conceptualization and development of a digital twin that operates on the natural resources of the Centre-Val-de-Loire region in order to model such resources in a harmonious and effective way. This implies a first phase of design of the data integration technologies. The goal is to reach the architectures that best meet the technical requirements and best fit the available data resources. The part concerning the “digital twin” is placed at the logical and physical core of the JUNON programme and is articulated as a fundamental tool for the cohesion of the various parties and partners involved. At a later stage, from a global and integral perspective, Dr Iglesias will also participate in the design of AI algorithms and use cases that should govern the functioning of the digital twin as a whole.

Amit Sharma



Period: October, 2024 - October, 2025
Programme: ARD CVL JUNON PROGRAMME
Award: LE STUDIUM Research Fellowship
Speciality: Data Integration and Predictive Analysis
Previously: Chitkara University - IN
Research institute: Laboratoire Pluridisciplinaire de Recherche en Ingénierie des Systèmes, Mécanique et Energétique (PRISME) Laboratory / University of Orléans, INSA CVL,Orléans
Host scientist: Frédéric Ros

BIOGRAPHY

Dr. Amit Sharma is a Senior Researcher at the PRISME Laboratory, University of Orléans, France, with expertise in AI/ML, IoT, graph neural networks, and smart cities. Currently, Dr. Amit is developing advanced digital twin systems for environmental monitoring and decision support. With 48 research papers (SCI-9, Scopus-35) and postdoctoral work on applying neural networks in agriculture, he has advanced fields like precision agriculture and disease prediction. Dr. Sharma’s Ph.D. focused on forest fire detection systems using IoT and reinforcement learning. A skilled Python and MATLAB programmer, he actively contributes to cutting-edge research in sustainable development and computer vision. Dr. Sharma has also chaired multiple international conferences and fosters innovation in computational solutions.

RESEARCH QUESTION

Enhancing Environmental Digital Twin Architectures: Integration of Machine Learning and Interoperable Data Standards for Groundwater and Meteorological Analysis.

This research project focuses on advancing the capabilities of modular and scalable Digital Twin architectures for environmental monitoring and prediction. It investigates the integration of open standards, enabling seamless interoperability across diverse data sources like groundwater and meteorological datasets. The study aims to explore the effectiveness of Machine Learning models, in improving time-series predictions and forecasting by utilizing both endogenous and exogenous variables such as groundwater level, rainfall, and temperature. By addressing these challenges, the research seeks to contribute to the development of robust, production-ready Digital Twin systems that are adaptive, user-centered, and capable of supporting sustainable environmental decision-making.

Wen Chen

Period: May, 2024 - July, 2024
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Visiting Researcher
Speciality: Control systems
Previously: Wayne State University - USA
Research institute: Laboratoire Pluridisciplinaire de Recherche en Ingénierie des Systèmes, Mécanique et Energétique (PRISME) Laboratory / University of Orléans, INSA CVL, Orléans
Host scientist: Driss Boutat & Dayan Liu

BIOGRAPHY

Dr. Wen Chen received his Ph.D degree from Simon Fraser University, Burnaby, BC, Canada in 2004. From 2005 through 2007, he pursued his postdoctoral research at University of Louisiana at Lafayette, USA. His research interest was in the areas of Control and Fault Diagnosis. From Aug. 2007 to Dec. 2008, he was a Control Systems Engineer at Paton Controls and Triconex, Houston, Texas, working on design of control and fault-diagnostic systems. In 2009, he joined the Division of Engineering Technology at Wayne State University as an assistant professor. Currently, he is a professor and his research is focused on monitoring and diagnostics of industrial Systems.

RESEARCH QUESTION

Fault Diagnosis of Networked Battery Systems for Industrial Risk Control and Management

Dr. Chen has proposed a fractional-order learning observer for fault detection and estimation in a string of battery cells without individual voltage measurements. It is the first of its kind to propose such an observer for fault diagnosis purpose. Because there are no individual voltage measurements for each battery cell, we combine all cells on the same string into one fractional-order system model with the same input current, and the system output is the sum of all cells’ terminal voltage. To accurately model a battery cell, we used a CPE into the electric circuit model such that a fractional-order model is established. Based on the fractional-order model of the battery string, a fractional-order learning observer has been constructed for diagnosing battery faults. The simulation studies have clearly verified the effectiveness of the proposed fractional-order learning observer.

LE STUDIUM RESEARCH CONSORTIUM

EXPLORATION OF DUALITY, GEOMETRY, AND ENTANGLEMENT

Sergey Solodukhin

LE STUDIUM Research Consortium Coordinator

BIOGRAPHY

Sergey Solodukhin has studied theoretical physics at Moscow State University that he finished in 1987 and the PhD studies in 1990. Since then he had a number of temporary positions in Canada, the Netherlands and Germany. He was a part of the group of Prof. Gerard't Hooft in Utrecht for the period 1998-2000. Since 2007 he became a full professor at the Laboratory of Theoretical and Mathematical Physics (LTMP) at University of Tours. Later LTMP was transformed to Institut Denis Poisson (IDP). Prof. Solodukhin has made a number of important contributions in the holographic AdS/CFT correspondence, entanglement entropy of black holes and entropy in conformal field theories and quantum gravity. In the recent years he has been working on the conformal anomaly in theories with boundaries and on the two-dimensional models of quantum black holes.

RESEARCH QUESTION

The black holes raise the important fundamental questions regarding the consistency of our understanding of basic rules of the Universe around us. Initially obtained as a rather simple mathematical solution of the equations of gravity proposed by A. Einstein the black holes later became the most surprising object of study in physics. Indeed, it was indicated by the works of S. Hawking and J. Bekenstein that, semiclassically, black holes radiate at a certain temperature that depends on the mass and as any other thermal objects they have entropy that occurs to be proportional to the area of the black hole horizon. Since this fundamental theoretical discovery it became an important question what degrees of freedom are counted by this entropy. Despite the remarkable progress during the recent years in answering this question the universal answer that explains the entropy not relying on addition symmetries is still absent. A related issue is the problem of the quantum information that appears to be lost if the black holes evaporate down to .. nothing. These issues may be not only purely theoretical but also may have certain observational consequences that potentially can be experimentally tested using the gravitational waves experiments.

Partners

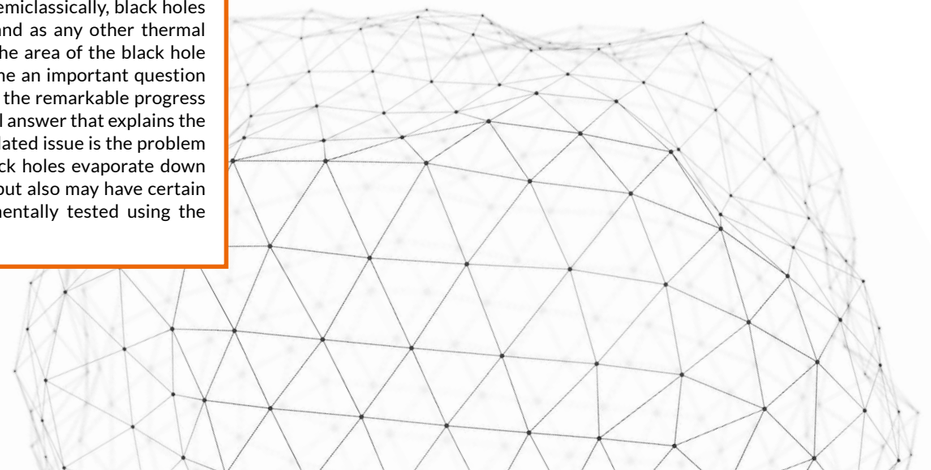
Gary Gibbons
is an expert in gravitational physics, black holes, string theory
> University of Cambridge - United Kingdom

Christopher Herzog
is an expert in holographic duality, applications to condensed matter, defects and anomaoies in conformal field theories
> King's College - United Kingdom

Erik Tonni
is an expert in conformal field theory, geometric aspects of holography, entanglement entropy
> International School for Advanced Studies (SISSA) - Italy

Jan de Boer
is an expert in string theory, AdS/CFT holography
> University of Amsterdam - The Netherlands

Manuela Kulaxizi
is an expert in AdS/CFT holography, conformal field theory, black holes
> Trinity College Dublin - Ireland



5 HUMAN & SOCIAL SCIENCES

Erminia Ardissino

Period: September 2023 - July 2024
Programme: French Institutes for Advanced Study (FIAS)
Award: LE STUDIUM Visiting Researcher
Speciality: Renaissance Studies
Previously: University of Torino - IT
Research institute: Centre for Advanced Studies in the Renaissance (CESR) / CNRS, University of Tours, Tours
Host scientist: Elise Boillet

BIOGRAPHY

Erminia Ardissino (Ph.D., Yale University; Dottorato di Ricerca, Università Cattolica, Milan) has been Associate Professor at the University of Turin. Her research deals mainly with Italian literature, with a specialization in the relationship between the history of ideas and religious experience in early modern time. She has published several books on Dante, and Renaissance and Baroque Italian literature, and numerous articles in the leading journals of philology and literary studies. Among her most recent books are *Donne interpreti della Bibbia nell'Italia della prima età moderna. Riscritture e comunità ermeneutiche* (2020), *Poesia in forma di preghiera. Svelamenti dell'essere da Francesco d'Assisi ad Alda Merini* (2023), and with Elise Boillet *Lay Readings of the Bible in Early Modern Europe* (2020).

RESEARCH QUESTION

Praying in Renaissance: a multiplicity of texts, theories, and practices in a changing Europe

The European Renaissance saw a deep renewal of the form and content of prayer. Even before the Reformation (whether Protestant or Catholic), the growing role played by lay people, women and men, in the religious sphere created new forms of worship, developing new practices and new texts. The renewal became even more intense during the 16th and 17th centuries, two centuries defined and devastated by changing confessional identities, but also vitalized by the printing press and confraternal activities. The project intended to study, from a multidisciplinary perspective, the changes which took place in this everyday and universal practice in the early modern period. The results offer an important contribution to knowledge on the topic for two reasons: first, it goes beyond existing studies on prayer, which do not go later than the 15th century; second, because it took into account under-studied aspects, such as domestic practices, the contributions of women, devotional images, catechisms, offering a truly new picture that may suggest much further research.

Carlo Bosi

Period: October, 2024 - July, 2025
Programme: French Institutes for Advanced Study (FIAS)
Award: LE STUDIUM / FIAS Research Fellowship
Speciality: Musicology
Previously: Mozarteum University & Paris Lodron University of Salzburg - AT
Research institute: Centre for Advanced Studies in the Renaissance (CESR) / CNRS, University of Tours, Tours
Host scientist: Philippe Vendrix

BIOGRAPHY

D.Phil. at the University of Oxford (2004). In 2004–2005 DAAD scholar at the Friedrich-Schiller-Universität Jena-Weimar and in 2006–2007 scholarship of the Norges Forskningsråd at the NTNU Trondheim. 2007-2009: Research Fellow at City University, London. From 2010 until 2017 postdoc and senior postdoc on two FWF (Austrian Science Fund) chanson projects (https://chansonmelodies-sbg-ac.eu). Since 2019 senior postdoc at Salzburg University – and since November 2023 at Mozarteum University – in a research project on the relationships between literature of the Venetian "Accademici Incogniti" and libretti of early Venetian operas (https://operaincogniti.org/). Forthcoming project on operas by the Venetian Antonio Caldara for Salzburg's Prince-Archbishop Franz Anton von Harrach (1717-27).

RESEARCH QUESTION

The Chansonnier de Bayeux : An Early 16th-Century Monophonic Source and its Polyphonic Relatives

The main aim of this research stay is a monograph on the chansonnier de Bayeux (BnF, fr. 9346), one of only two anthologies from around 1500 exclusively transmitting a monophonic song repertoire. This monograph shall include a historical introduction, a codicological analysis of the source, a transcription of texts and melodies, with a parallel English translation of the texts, and a complete list of monophonic concordances and polyphonic arrangements, with detailed analyses of songs shared with the other monophonic chansonnier (BnF, fr. 12744) and their existing polyphonic transmissions. It is also planned to devote some attention, in a final chapter, to the modern revival of some of these songs. Finally, it is envisaged to feed data thus obtained into the Ricercar Data Lab and include work on the manuscript in the digital infrastructure Cluster 6 Biblissima+. This will help spread knowledge and awareness on the relevance of monophonic song in the Renaissance and of this underrepresented repertoire, enhancing at the same time the digital visibility of this important manuscript.

John Cooper

Period: October, 2024 - January, 2025
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Visiting Researcher
Speciality: Renaissance History
Previously: University of York - UK
Research institute: Centre for Advanced Studies in the Renaissance (CESR) / CNRS, University of Tours, Tours
Host scientist: Philippe Vendrix

BIOGRAPHY

Educated at the University of Oxford and the University of Pennsylvania, John Cooper is now Professor of Early Modern History at the University of York. His research focuses on the political, religious and architectural history of Britain and Ireland during the long sixteenth century. Between 2013 and 2019 he led a series of AHRC funded projects focusing on the Palace of Westminster, combining academic research with impact in the UK Parliament. He is currently Co-Investigator of the AHRC project 'Henry VIII on Tour', exploring royal progresses in Tudor England. His most recent book, *The Lost Chapel of Westminster: How a Royal Chapel Became the House of Commons*, was published in 2024. John is a Fellow of the Royal Historical Society and Director of the Society of Antiquaries of London.

RESEARCH QUESTION

Royal journeys, palaces and pageantry in England and France 1460-1589: establishing a comparative and multidisciplinary methodology

Why did the rulers of sixteenth-century England and France spend so much time on the road? Building on the 'Henry on Tour' UK research project (Historic Royal Palaces, University of York, Newcastle University) and equivalent interdisciplinary work conducted at the Centre d'Études Supérieures de la Renaissance and elsewhere in France, I compare the mobility of Renaissance monarchy in terms of purpose, extent, impact and meaning. Henry VIII of England (r. 1509-47) and François 1er of France (r. 1515-47) were intensely aware of one another as rulers, competing for dominance and prestige in Europe. Their extensive journeys and progresses have been described in similar terms, but what were the factors specific to England and France? My project draws out the contrasts between monarchy, government and display in two Renaissance kingdoms engaged in a complex mutual relationship.

Eduardo Garcia Ribeiro Lopes Domingues

Period: January, 2024 - December, 2024
Programme: French Institutes for Advanced Study (FIAS) / MSH Visiting Researcher
Award: LE STUDIUM / FIAS Research Fellowship
Speciality: Urban law & Urban planning
Previously: Federal University of the State of Rio de Janeiro (UNIRIO) - BR
Research institute: Maison des Sciences de l'Homme Val-de-Loire (MSH VdL) & CITERES / CNRS / University of Tours, Tours
Host scientist: Romeo Carabelli

BIOGRAPHY

Urban Law Professor at the Federal University of the State of Rio de Janeiro (UNIRIO), holding a PhD in City Law from the University of the State of Rio de Janeiro (UERJ). He also serves as a consultant in Urban Policy and Land Law for the Brazilian Institute of Municipal Administration (IBAM), where he assists a multidisciplinary team in the urban plan elaboration process and drafts legislative bills for various Brazilian cities.

His research focuses on urban planning through the Power and Territory research group, examining the effectiveness of urban planning instruments and democratic participation. Recently, his work has concentrated on distinguishing urban, rural, and periurban land, approached from both juridical and geographical perspectives.

RESEARCH QUESTION

The Pursuit of Society's Ecological Transition: Integrating Rural Development into Urban Planning and Environmental Protection

Despite scientific knowledge and international commitments to protect the environment, respect people, and empower local governments, our industrial society's ways of life are responsible for climate change and climate disasters, while failing to ensure affordable and adequate housing for people worldwide.

Thinking and planning beyond city limits is crucial in upholding the Right to the City for everyone, whether they live in urban or rural areas. All people are entitled to adequate housing, nutrition, education, health, leisure, work, internet access, mobility...

By working with the Sustainable Development Goals of Agenda 2030 and the principles of the New Urban Agenda (UN Habitat III, 2016), we explore the concepts of urban and rural areas in Brazil and France and analyze the foundations for recognizing the legal personality of the Loire River through the Loire Parliament movement, addressing questions about democratic participation in territorial planning.

Sébastien Drouin

Period: January, 2024 - December, 2024
Programme: French Institutes for Advanced Study (FIAS) & SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM / FIAS Research Fellowship
Speciality: Early Modern History
Previously: University of Toronto - CA
Research institute: POuvoirs, LEttres, Normes (POLEN) / University of Orléans, Orléans
Host scientist: Marion Brétéché

BIOGRAPHY

After is Ph.D. in French literature and Early Modern history from the Université Laval and the Université de Versailles/Saint-Quentin-en-Yvelines, Sébastien Drouin has a been Postdoctoral Fellow of the Fonds Québécois de la Recherche, the Social Science Research Council of Canada, and of the Gotha Research Center, leading him to do research stays in Brussels, Paris and Erfurt. He is Associate Professor at the University of Toronto Scarborough. His research interests are interdisciplinary and bridge literature and philosophy, literature and religion, and literature and the visual arts. For many years, he has been conducting research dedicated to Early Modern journalism, heterodoxies and intellectual networks. His project at LE STUDIUM was dedicated to early 18th-century correspondences and book trade between Holland, France, and England.

RESEARCH QUESTION

The circulation of Literary News and Forbidden Books Between Paris and The Hague (1710-1725)

This project is dedicated to the circulation of books between Holland and France in early 18th-century. More precisely it is dedicated to book trade between Paris and The Hague between 1715 and 1725. The circulation of printed documents between France and Holland evolves according to the time's complex political and religious affairs. Trade between France and Holland was very difficult in the last third of the 17th century, with the War of the League of Augsburg (1688-1697) and the War of the Spanish Succession (1701-1713) greatly affecting commerce. Several important booksellers and printers were based in The Hague, as evidenced by the sales catalogs. This project intends to study the networks pf printers, writers and other professionals printing books in The Hague and then sending them, often illegally, to Paris. This approach, which is essentially multidisciplinary, is rooted in at we might call micro-history, which aims, when sources allow, to analyze the intellectual practices of a given group, often brought together by professional circumstances.

Ionuț Epurescu-Pascovici

Period: September, 2024 - December, 2024
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Visiting Researcher
Speciality: Medieval History
Previously: University of Bucharest - RO
Research institute: Institute for Research and History of Texts (IRHT) / CNRS, Tours
Host scientist: Sébastien Barret

BIOGRAPHY

Ionu Epurescu-Pascovici (PhD in medieval studies, Cornell University) is senior researcher at the University of Bucharest. He is the author of Human Agency in Medieval Society, 1100–1450 (Boydell Press, 2021) and the editor of Accountability in Late Medieval Europe: Households, Communities, and Institutions (Brepols, 2025) and Accounts and Accountability in Late Medieval Europe: Records, Procedures, and Socio-Political Impact (Brepols, 2020). In addition, he has published in peer-reviewed journals such as French Historical Studies, The Journal of Medieval History, and Viator. Between 2015 and 2020 he was the Principal Investigator of the ERC Starting Grant CASTELLANY ACCOUNTS. He is currently preparing a monograph on institutional accountability in late-medieval Savoy.

RESEARCH QUESTION

Registering Social Change: How Historical Transformations Are Reflected in the "Livres de Raison" (c. 1400–1600)

This exploratory project has highlighted the potential of the livres de raison as sources for understanding the impact of the macro-historical transformations c. 1400–1600. Sixteenth-century livres are more concerned with family events and less concerned with lists of revenues and expenses. This amounts to a repurposing of the traditional register defined by its mix of notes on household business and family into a record resembling a family chronicle. The change was in response to the sociocultural pressures of a transformed society. First, the progress of pragmatic literacy and growing access to notaries led to the diversification of accounting records, rendering obsolete the single register in which the pater familias kept track of the patrimony. Second, facing mounting socioeconomic pressures, town notables began to use the livre de raison as a repository of family history, in order to shift the competition against upstarts on the terrain of cultural capital. Knowledge of the illustrious family line could thus be preserved with a view to informing participation to public life.

Alina Gonchorova

Period: March, 2022 - December, 2025
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Guest Researcher
Speciality: Civil Law, Digital Law
Previously: Sumy State University - UA
Research institute: Institute of Interdisciplinary Law Research (IRJI) / University of Tours, Tours
Host scientist: Fabienne Labelle

BIOGRAPHY

Alina Goncharova is a professor at the Educational and Scientific Institute of Law of Sumy State University. Her research focuses on the inheritance of virtual assets, the creation of electronic wills, and the protection of personal data.

Alina Goncharova was born in Ukraine. In 2012, she received her PhD from Taras Shevchenko National University of Kyiv in Civil Law and Civil Procedure, Family Law, and Private International Law.

With over 17 years of research experience, she is the author of numerous monographs, over 100 publications in internationally ranked journals, and holds several intellectual property certificates. Her work focuses on the development of a modern legal framework in the areas of digital technologies and inheritance law.

RESEARCH QUESTION

The development of digital wills for managing virtual assets as a means to automate the inheritance process in the digital realm.

The research focuses on civil and digital law, particularly on a specific type of will: the digital will, which addresses the management of a person's digital legacy.

Technological advances have created an entirely new class of assets—digital assets, which have become a significant segment of the global economy, with billions of dollars invested in cryptocurrencies, digital art, collectibles, and virtual real estate. These new forms of wealth not only reflect changes in how value is created and exchanged but also introduce complex legal and regulatory challenges that existing systems struggle to address.

The introduction of legislation on digital wills and the development of new platforms will establish clear procedures for the transfer of digital assets. This represents an important step towards adapting legal systems to modern realities and protecting citizens' rights in the digital sphere.

Stefan Heßbrüggen-Walter

Period: September, 2023 - July, 2024
Programme: French Institutes for Advanced Study (FIAS)
Award: LE STUDIUM / FIAS Research Fellowship
Speciality: History of philosophy
Previously: Free University of Berlin - DE
Research institute: Centre for Advanced Studies in the Renaissance (CESR) / CNRS, University of Tours, Tours
Host scientist: Elena Pierrazo

BIOGRAPHY

Stefan Heßbrüggen-Walter graduated from the university of Münster in 2001 with a dissertation on the notion of a mental faculty in Kant's Critique of Pure Reason. Between 2004 and 2012 he taught at Germany's only state distance teaching university, the Fernuniversität in Hagen. After that he joined a Russian university for eight years. As associate professor of philosophy with tenure in a department for philosophy and cultural studies, working mainly on the history of German philosophy between Melanchthon and Kant, and pursued interests in the application of methods from the digital humanities to philosophical research questions – his main area of research after leaving Russia in 2022. He now pursues a project in the digital history of philosophy at the University of Münster, Germany.

RESEARCH QUESTION

The Afterlife of a Renaissance Genre: A Census of Dissertations in French Libraries 1500-1800

The dissertation is a genre that has its roots in academic practices of the later Renaissance. Academic manuscript dissertations can be traced back to its first half, print dissertations evolved during its second half, not only in Germany and France, but also in the Netherlands, and Scandinavia. "School philosophy" as an institutional practice continued to flourish in spite of the anti-scholastic polemics of the humanists. This project therefore investigates the holdings of French libraries with regard to this genre of academic text production. It aims to assemble a data set of consolidated metadata that will comprise at least 5000 titles, probably significantly more. The results of the project will provide a longitudinal view of academic knowledge production and teaching practices as well as insights into the paths of knowledge exchange in Europe. The project is interdisciplinary with regard to its subject matter – academic texts from philosophy, including mathematics and natural science, medicine, law, and theology – as well as its methodology, pursuing research questions at the intersection of book history and the history of knowledge.

Sungyup Lee

Period: December, 2023 - February, 2024
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Visiting Researcher
Speciality: Translation Studies & Picture Books
Previously: Ewha Womans University - KR
Research institute: InTRu (Interactions, Transferts, Ruptures artistiques et culturelles), University of Tours, Tours
Host scientist: Cécile Boulaire

BIOGRAPHY

After defending her Ph.D thesis in 2010, Sungyup Lee worked as a lecturer at Ewha Woman's University in Seoul, South Korea. From September 2011 to August 2012, she was a postdoctoral fellow with Government of Canada Awards at Brock University in Canada. She is currently a lecturer and researcher at Ewha Woman's University. Her research focuses on the crossover picture books and the translation of picture books. Since 2000, she has carried out especially French crossover picture books published in the 1970s and 1980s with a five-year fellowship from the National Research Foundation of Korea. In addition to her research, she translates picture books between French and Korean and is as a president of KBBY, the Korean branch of IBBY (International Board on Books for Young People).

RESEARCH QUESTION

A Study on the Translation Strategies of Korean Picture Books published in France

This research aims to compare the trend of Korean picture books translated and published in France until 2023 with general Korean literature translated in the same way, observing translation strategies, and inferring the reasons for their choice. In general, the translation of children's literature, including picture books, is thought to emphasize the norms of the target language culture. We want to see if this is the case in the French translation of Korean picture books, and at what points it shows an emphasis on the host culture. This study therefore aims to identify major trends in the French translation strategies of Korean picture books by examining the ways in which French publishers cross linguistic and cultural boundaries when adapting Korean picture books.

Deborah McGrady

Period: May, 2024 - August, 2024
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Visiting Researcher
Speciality: Medieval Studies
Previously: University of Virginia - USA
Research institute: POuvoirs, LEttres, Normes (POLEN) / University of Orléans, Orléans
Host scientist: Philippe Haugeard

BIOGRAPHY

Deborah McGrady is Professor of French and Director of Medieval Studies at the University of Virginia. She is the author of several monographs and articles, in particular, Joan of Arc: The Life of a French Cultural Icon (Forthcoming: Boydell & Brewer, May 2025).

RESEARCH QUESTION

The Return of Joan of Arc: The Maiden's Adventures in BDs, Mangas and Graphic Novels

Despite her status as arguably the most represented historical French female figure in French bandes dessinées, Joan of Arc and her depiction in 9th-art works has never been the subject of a full-length critical analysis. The research conducted during my Studium fellowship at the Maison de Jeanne d'Arc in Orléans, which holds the most complete collection of BD concerning the medieval heroine, allowed me to pursue the driving question of my research: In what ways and to what degree does this corpus present Joan through text and image not simply as an iconic heroine but as an iconoclastic figure who challenges enduring culturally gendered limitations placed on women, who serves to push against nationalist mythology as well as the restrictive, and who might provide an avenue for challenging the conventions of 9th-art artistic forms related to gender, history, and storytelling?

Alexander Robinson

Period: October, 2022 - September, 2024
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Guest Research Fellow / MSCA PostDoctoral Fellowship
Speciality: Musicology
Previously: University of Cambridge - UK
Research institute: Centre for Advanced Studies in the Renaissance (CESR) / CNRS, University of Tours, Tours
Host scientist: Philippe Vendrix

BIOGRAPHY

Alexander Robinson is a graduate of Oxford University, King's College London, and the Paris-Sorbonne University, where he completed his doctorate in 2015 on music at Henri IV's court (1589–1610). From 2022 to 2024, he was a Marie-Skłodowska-Curie postdoctoral fellow at the CESR in Tours, and he is currently a Research Associate at Basel University in Switzerland (until 2028). His publications include articles in Musica Disciplina, French History, JRMA, and The Musical Quarterly (forthcoming). He is also co-editor of History as Fantasy in Music, Sound, Image, and Media (Routledge, 2024, with James Cook, Alexander Kolassa, and Adam Whittaker) and Marginalised Voices and Figures in French Festival Culture, 1500-1800 (Brepols, scheduled for 2025, with Marc W. S. Jaffré and Bram van Leuveren).

RESEARCH QUESTION

Music, Religion and Civic Identity in Renaissance Avignon (c.1500–1630)

The EU-funded interdisciplinary project AVIGNONMUSIC (2022–24) sought to reveal how musical life in Renaissance Avignon was interlinked with events happening on a broader religious, social and political level. Alongside being the first in-depth study of Avignon's musical life during this period, it represented a significant and much-needed departure from the Parisian/royal court focus that has typified most previous scholarship on French Renaissance music. Two fundamental issues provided the basis for this investigation: a) the question as to whether Avignon's musical life can be said to reflect localised and/or nationalised trends; and b) the effect that Avignon's unique status as a Papal enclave had on its institutions and musical practices. These broader issues served as a backdrop for exploring the full spectrum of musicians' professional activities, as well as the various contexts within which they made the city resound – i.e. from its ecclesiastical establishments (such as Notre-Dame des Doms and the Collégiale Saint-Agricol), to the instrumentalists attached to the city's guilds, to the various civic spectacles within which musicians participated (like entries).

Aneta Slowik

Period: September, 2023 - June, 2024
Programme: French Institutes for Advanced Study (FIAS)
Award: LE STUDIUM / FIAS Research Fellowship
Speciality: Migration / Education
Previously: University of Lower Silesia - PL
Research institute: Research Team on Contexts and Education Actors (ÉRCAÉ), University of Orléans, Orléans
Host scientist: Philippe Bourdier

BIOGRAPHY

Dr Aneta Slowik defended her PhD thesis in 2011 and was appointed as associated professor at the University of Lower Silesia DSW in Wroclaw, Poland. She works in the field of migration and counceling studies. She is a member of the Scientific Board of «Harmattan» in the I`Histoire de vie network, and the Scientific Council of the Association of biography research and life history in educational sciences (ASHIVIF). Dr. Slowik has published two monographies focused on Polish immigrants in the UK and their transnational councelling networks. She received academic grants by DAAD and KAAD (Germany) and BGF (France).

RESEARCH QUESTION

Educational and cultural needs of Ukrainian refugee children in the Loiret department

This project was carried out at ÉRCAÉ EA 7493 at University of Orléans under the supervision of Prof. Philippe Bourdier and in collaboration with Dr. Véronique Francis. The project analyzed the educational needs, challenges, and lived experience of Ukrainian refugee children that moved to the Loiret department in France after the Russian invasion of Ukraine. The methods of biographical narrative analysis and participant observation were employed. Narrative interviews with Ukrainian children aged 6-12, teachers, school heads, and parents were conducted. An international conference focused on immigrants in the Loiret was organized. Dr Slowik's research project produced recommendations for practitioners, researchers, teachers, and school from the Loiret department working with Ukrainian refugee children. The joint project with Dr. Véronique Francis will be a springboard for planning subsequent collaborative research projects and continuing our fruitful and long-standing research collaboration.

Ali Soltani

Period: October, 2024 - June, 2025
Programme: French Institutes for Advanced Study (FIAS)
Award: LE STUDIUM / FIAS Research Fellowship
Speciality: Computational Urban Planning and Policy
Previously: Flinders University - AU
Research institute: Centre d'Etudes pour le Développement des Territoires et l'Environnement (CEDETE) / University of Orléans, Orléans
Host scientist: Geneviève Pierre

BIOGRAPHY

Ali Soltani is a mid-career researcher in computational urban planning, specializing in the intersection of land use and transportation. Formerly a professor at Shiraz University in Iran, he has held research fellowships in diverse locations including Turkey, Australia, Japan, and Italy. His research encompasses urban analytics, applications of Big Data in road safety, and the promotion of active transport. Dr. Soltani is a recipient of several research awards, including the Australian Endeavour Award, and is recognized among the Top 2% of World Scientists. He serves as an editor for Springer journals and contributes to nationally and globally funded research projects investigating the effects of planning policies on migration patterns, road safety, and the built environment.

RESEARCH QUESTION

Investigating the Spatio-temporal Heterogeneous Changes in Internal Migration Patterns, the Case Study of Melbourne

This research investigates shifting domestic migration patterns in France and Australia, with a specific focus on the Greater Melbourne Area (GMA). Drawing upon advanced techniques such as structural equation modeling (SEM) and geographically weighted regression (GWR), the study aims to address several key research questions. Firstly, it seeks to identify the primary drivers of internal migration within the GMA, examining the influence of socioeconomic factors, including income levels, education, and occupation, on migration decisions. Secondly, the research investigates how built amenities, such as parks, schools, and transportation infrastructure, impact internal migration patterns within the GMA. Thirdly, the study delves into the extent to which factors like commuting time, distance to the CBD, and town size influence internal migration decisions, and how these factors interact with socioeconomic and amenity-related variables. Finally, the research aims to provide evidence-based recommendations for policymakers to enhance amenity supply, create more attractive environments for skilled workers, and foster balanced regional growth within the GMA by understanding the implications of these findings for regional development policies.

Anna Steward

Period: November, 2024 - September, 2025
Programme: ARTS-SCIENCES RESIDENCY
Award: LE STUDIUM Arts-Sciences Visiting Artist
Speciality: Sci-Art
Previously: Academy of Fine Arts Nuremberg - DE
Research institute: College Art And Design d'Orléans (ESAD Orléans) & Centre for Molecular Biophysics (CBM) /CNRS, Orléans
Host scientist: Caroline Zahnd & Matthieu Réfrégiers

BIOGRAPHY

Anna Steward is a transdisciplinary multimedia artist blending performance, installation, and scientific collaboration. After training at Arts Educational Schools London in 2000, she worked as an actor and has focused on Live Art since 2007. Her 2014 performance *GELD-Pilgerreise* inspired the Swiss film *Church of Money*, featured in the German Federal Agency for Civic Education's media library. Anna graduated with honours from the Academy of Fine Art Nuremberg in 2023, where she currently lectures. She has received numerous residencies and scholarships, including from Künstlerhaus Lukas Ahrenshoop and the Bavarian State Ministry of Science and the Arts, and is a visiting artist at the German Archaea Centre at the University of Regensburg.

RESEARCH QUESTION

BioQuantum Record - Communicating with the Other

BioQuantum Record is a speculative arts-science project that reimagines communication outside human perspectives. Conducted at CNRS-CBM (Centre Biophysique Moléculaire) Orléans and ESAD Orléans (École Supérieure d'Art et de Design), the project explores how scientific research and artistic exploration intersect, addressing questions about life beyond Earth. Unlike the Golden Record sent aboard Voyager to communicate with extraterrestrial intelligence, the project proposes a biological connection based on chirality, the 'handedness' of molecules. While life on Earth uses left-handed amino acids and right-handed sugars, extraterrestrial organisms might use molecules with reversed chirality. The sci-fi narrative proposes sending an artistic prototype hosting biochemical materials and 'a crew' of prokaryotes into space to initiate a chiral handshake with extraterrestrial siblings. By blending artistic storytelling and scientific research, the project aims to provoke new ways of thinking about life in the universe and invite discussions on planetary ecosystems and interstellar encounters.

Sara Taglialatela

Period: October, 2024 - July, 2025
Programme: French Institutes for Advanced Study (FIAS)
Award: LE STUDIUM / FIAS Research Fellowship
Speciality: History of Philosophy
Previously: Independant Researcher
Research institute: Centre for Advanced Studies in the Renaissance (CESR) / CNRS, University of Tours, Tours
Host scientist: Fosca Mariani Zini

BIOGRAPHY

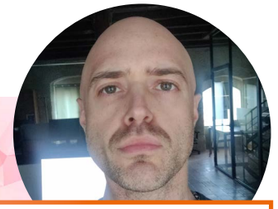
Sara Taglialatela holds one PhD in Philosophy (Theoretical Philosophy) from the Ca' Foscari University in Venice (2009) and one joint PhD in Philosophy (History of Philosophy) from the Freie Universität Berlin and the Scuola Normale Superiore, Pisa (2018). After having studied Giordano Bruno's ars memoriae and the relation between his works on mnemonics and philosophy in the first phase of his reflection (1582–1585), she has researched Bruno's stay at Wittenberg (1586–1588) to identify possible interweavings of the discussions on the artes liberales among the Lutherans at the Leucorea University (September 2021-August 2024, Marie Skłodowska-Curie Fellowship at the Faculty of Theology, Church History Section, University of Copenhagen).

RESEARCH QUESTION

Philipp Melanchthon, Giordano Bruno, and Michel de Montaigne on memory and oblivion: Three case studies on philosophy of memory in the sixteenth century

Through textual analysis MEMO16 will investigate how Philipp Melanchthon, Giordano Bruno, and Michel de Montaigne conceived of, reflected on, and wrote about memory and oblivion at the intersection of some of the most important disciplines of the sixteenth century (i.e., philosophy, theology, and medicine; philosophy, rhetoric, and mnemonics; philosophy and literature) to show how they contributed to the formulation of modern topics such as the soul-body problem and concepts of time, space, and self- consciousness. This project, informed by analytical (philosophy of memory) and phenomenological (metaphorology) approaches, will also profit from engaging with the study of the inner writing and book of nature metaphors in the works of the three authors.

Alessandro Turbil



Period: September, 2023 - August, 2024
Programme: SMART LOIRE VALLEY PROGRAMME
Award: LE STUDIUM Integration Fellowship
Speciality: French Studies - Digital Humanities
Previously: Freie Universität Berlin - DE
Research institute: Centre for Advanced Studies in the Renaissance (CESR) / CNRS, University of Tours, Tours
Host scientist: Silvère Menegaldo & Elena Pierazzo

BIOGRAPHY

After defending his joint Ph.D. thesis in Literature and Linguistics at the Universities of Turin and Sorbonne Nouvelle Paris 3 in 2018, Alessandro Turbil has worked as a temporary lecturer and researcher at various European universities (University of Tours, University of Turin, Freie Universität Berlin). He has recently been awarded a competitive fellowship from the Swiss National Science Foundation, starting in September 2024. His research interests include medieval and Renaissance French literature, lexicology, material bibliography and network analysis applied to early modern editorial and publishing practices.

RESEARCH QUESTION

Medieval lyric heritage in the French printing and bookselling network (1470-1600): a bibliographical and ontological preliminary study

Since the Renaissance, Western societies have been deeply fascinated by the Middle Ages. While recent critical advances have demonstrated the enduring presence of medieval literature in the book market of the sixteenth, seventeenth and eighteenth centuries, the publishing and reading practices that shaped the transmission and reception of this cultural heritage remain largely unexamined. Drawing on accessible catalogues, databases and corpora of medieval French literature, as well as the growing use of computational models in cultural studies, the research project Medieval Lyric Heritage in the French Printing and Bookselling Network (1470-1600): A Bibliographical and Ontological Preliminary Study, supported by the Institute for Advanced Studies LeStudium at the Centre d'Études Supérieures de la Renaissance (University of Tours), tackled major methodological challenges and sought to develop an ontology focusing on the circulation of written cultural artefacts in print, with particular emphasis on the reuse of textual, iconographic and material elements within the printing ecosystem.

LE STUDIUM RESEARCH CONSORTIUM

EARLY MEDIEVAL GLASS PRODUCTION, MULTI-ANALYTICAL TECHNIQUES, TO UNDERSTAND THE DAWN OF A TECHNICAL REVOLUTION

Bernard Gratuze

LE STUDIUM Research Consortium Coordinator

BIOGRAPHY

Bernard Gratuze is director of research at the Institut de Recherche sur les Archéomatériaux (IRAMAT-CEB), CNRS/Université d'Orléans. He received his PhD and the HDR, at the Analytical Sciences Department of Orléans University. His current research interests include the development of analytical protocols using LA-ICP-MS for glass and lithic materials to study their production and trade from Protohistory to the Modern Period. He studies glass making processes and recipes since the beginning of the second millennium B.C. with particular interest for transition periods. He identified Indian's glass beads import in Western Europe during Merovingian period (5th-6th c.) and specific glass production from lead slag in Melle at the beginning of the 8th c. He is a member of French and International glass associations (AFAV & AIHV).

RESEARCH QUESTION

The aim of the project is to highlight the mutations that affected the North European glass craft following the changes in fluxes and to place these mutations in the broader context of the transitions that affected all fi re-related crafts at the end of the Middle Ages in North-West Europe. By using wood and sand available in north-western Europe, glassmakers put an end to their dependency on primary glass imported from the Near East, and reorganized the whole craft by locating primary and secondary productions in the same place. However, the mechanisms leading to this transformation are not yet clear. In order to enlighten this change, written documents are scarce and the archaeological sources are the main source of information. Thanks to archaeometry and to the analytical techniques that were recently developed, glass artefacts can now deliver many crucial data to retrace the socio-economic history and to understand the evolution of techniques and knowledge. The Studium Consortium help us to link several small projects in order to produce uniform and more sustainable results.

Partners

Nadine Schibille
is an expert in glass history, art history, analyses
> CNRS, IRAMAT-CEB - France

Line Van Wersh
is an expert in glass analysis, glass history
> University of Liege, European Centre of Archaeometry - Belgium

Grégoire Chêne
is an expert in ion beam methods for ancient material analyses
> University of Liege, European Centre of Archaeometry - Belgium

David Strivay
is an expert in ion beam methods for ancient material analyses
> University of Liege, European Centre of Archaeometry - Belgium

Olivier Vrielynck
is an expert in glass archaeology
> Walloon Heritage Agency, Public Service of Wallonia - Belgium

Mette Langbroek
is an expert in Merovingian glass and bead studies
> Leiden University - Belgium

Patrick Degryse
is an expert in isotopic analyses
> Leuven University - Belgium

Alicia Van Ham-Meert
is an expert in isotopic analyses
> Leuven University - Belgium

Inès Pactat
is an expert in early European mediaeval glasses
> CNRS, Laboratoire TRACES – France

2024 EVENTS PANORAMA

THEMES IN COLOR
- CONFERENCE
- PUBLIC LECTURE
- THURSDAY
- SUMMER SCHOOL
- CONSORTIUM
- WORKSHOP

JANUARY

Exploration of duality, geometry and entanglement
Sergey Solodukhin
Université de Tours Faculté des Sciences et Techniques
08-12 January >

Early Modern Dissertations in French Libraries: a Digital Approach
Stefan Heßbrüggen
CESR, Tours
11 January >

> 11 January
Discovering Korea through its Picture Books
Sungyup Lee
CESR, Tours

FEBRUARY

Autologous transplantation of myeloid cells reprogrammed ex-vivo by STING-Dependent Adjuvants (STAVs) as an alternative cell therapy for the treatment of Idiopathic Pulmonary Fibrosis.
Remo Russo
Hôtel Dupanloup, Orléans
> 01 February

> 01 February
Macromolecules and Nanoparticles for Magnetic Resonance Imaging: The impact of sizes
Yu Kimura
Hôtel Dupanloup, Orléans

> 06 February
(Not)available counselling in the migrant and refugee environment in France and Poland
Aneta Slowik & Philippe Bourdier
Online Meeting

Musical life and civic identity in Renaissance France (c.1500-c.1650)
Alex Robinson
CESR, Tours
08 - 09 February >

> 06 - 09 February
Ammonia for valuable clean energy systems
Christine Rousselle
Hôtel Dupanloup, Orléans

MARCH

> 26 February
French - Italian worshop on Cosmetosciences
Online meeting

07 March >
Uncovering natural cosmetics ingredients: Novel approaches for the multifunctional grape biomolecules in skin care formulations
Magdalena Malinowska
Biocube, Tours

Understanding disease - related malnutrition: a translational approach for nutritional interventions
Vera Mazurak
Biocube, Tours
> 07 March

> 12 - 15 March
ICGR-V - 5th International Conference on Gonadotropins and Receptors
Livio Casarini & Eric Reiter
Hôtel Univers, Tours

APRIL

> 04 April
Biographical research in Polish and Ukrainian migrant communities
Aneta Slowik
Hôtel Dupanloup, Orléans

> 04 April
A brief Exploration into the Crystal Structures and Fabrication of Advanced Ceramics: Solid-State Electrolytes and Luminescent Materials
Alberto Fernandez Carrion
Hôtel Dupanloup, Orléans

> 15 - 16 April
International workshop on autologous production of DNA-based antibodies
Yves Bigot & Denis Mulleman
Grand Hôtel, Tours

CONNECT Considering Overlooked Networks of iNtEraCTions : seed-dispersal by non-frugivorous vectors in temperate ecosystems
Christophe Baltzinger
INRAE, Orléans
22 - 26 April >

Serotonin research with focus on 5-HT7 receptor
Séverine Morisset Lopes
Hôtel Dupanloup, Orléans
22 - 26 April >

Pharmacological Inhibition of Cathepsin C in Neutrophil-Mediated Inflammatory Diseases
Brice Korkmaz
Faculté de Médecine, Tours
17 - 19 April >

How do insects breathe?
Art Woods
IRBI, Tours
02 May >

MAY

Translocating the forest to face climatic change. Impacts on migratory Monarch butterfly in Mexico and on wood formation in France
Cuauhtémoc Saenz-Romero
IRBI, Tours
> 02 May

Ephemeral Media of Knowledge: Perspectives From Intellectual History and the Digital Humanities
Stefan Heßbrüggen-Walter, Fosca Mariani Zini & Elena Pierrazo
CESR, Tours
> 22 - 23 May

16 May >
Life stories: an educational resource regarding contemporary mobility
Aneta Slowik & Philippe Bourdier
Hôtel Dupanloup, Orléans

> 28 - 30 May
Early detection of xylophagous invaders
Marie-Anne Auger-Rozenberg
Hôtel Dupanloup, Orléans

31 May >
Editing Correspondences in Early Modern Europe: Building and Damaging Reputations
Sébastien Drouin & Marion Brétéché
Hôtel Dupanloup, Orléans

JUNE

> 10 - 11 June
Resolution of Pulmonary Fibrosis
Remo Russo & Valérie Quesniaux
Hôtel Dupanloup, Orléans

11 - 13 June >
Workshop on short-term forest adaptation
Philippe Rozenberg
Hôtel Dupanloup, Orléans

17 - 18 June >
Reconciling forest management and ungulate populations in the face of climate change
Anders Marell
Hôtel Dupanloup, Orléans

> 25 - 26 June
Remote sensing for monitoring forest dieback
Cécile Vincent
Hôtel Dupanloup, Orléans

01 July >
Skin Models in Cosmetic Science: Bridging Established Methods and Novel Technologies
Emilie Munnier, Yuri Dancik & Franck Bonnier Virtual meeting

JULY

04 July >
Expanding the Limits of Non-Invasive Therapeutic Neurostimulation by Strategic Manipulation of Cell Excitability
Francis Bambico
Hôtel Dupanloup, Orléans

> 04 July
The Circulation of Literary News and Forbidden Books Between Paris and the Hague in early 18th Century
Sébastien Drouin
Hôtel Dupanloup, Orléans

AUGUST

Controlling polymer self-assembly through polymer chain chemistry and processing towards tunable nanostructured polymer thin films
Bryan Beckingham
Hôtel Dupanloup, Orléans
03 October >

Glycosaminoglycans: cracking a new biological code using computers
Sergey Samsonov
Hôtel Dupanloup, Orléans
03 October >

OCTOBER

03 October >
Registering Social Change in the "Livres de Raison", c. 1400–1600: Preliminary Findings and Methodological Gains
Ionu Epurescu-Pascovici
Hôtel Dupanloup, Orléans

Crystallization 2024 - 13th International Symposium on Crystallization in Glasses and Liquids
Michael Pitcher & Mathieu Allix
Hôtel Dupanloup, Orléans
> 24 - 27 September

05 September >
Multidisciplinary Back-to-school Seminar
Saint Libert, Tours

SEPTEMBER

La maltraitance infantile: une violence qui se transmet de générations en générations
Catherine Belzung
Château Belmont, Tours
> 03 September

Early-Life Adversity and Resilience: Multi-Disciplinary Perspectives in a Rapidly Changing World
Francis Bambico & Catherine Belzung
Château Belmont, Tours
> 03 - 05 September

> 21 - 23 August
Workshop sur la régénération en futaie irrégulière
Isabelle Bilger-Friedrich
INRAE, Nogent-sur-Vernisson

> 10 - 12 July
The spreading of French medieval affective literature in early modern printing (16th-17th century)
Alessandro Turbil & Silvère Menegald
CESR, Tours

2024
EVENTS PANORAMA

Early medieval glass production, multi-analytical techniques, to understand the dawn of a technical revolution
Bernard Gratuze
Hôtel Dupanloup, Orléans
16 - 18 October >

Timing the transit of magma under volcanoes using crystal 'clocks'
Thomas Shea
MOBE, Orléans
> 07 November

Multi-scale observation and simulation of mineral reactions in subsurface energy systems
Lauren Beckingham
MOBE, Orléans
07 November >

Crise des forêts face au changement climatique : entre incertitudes et controverses, quel espoir de survie ?
Philippe Rozenberg
Hôtel Dupanloup, Orléans
12 November >

Ecoacoustic software workshop: ecoSound-web & beyond
Kevin Darras
INRAE, Nogent-sur-Vernisson
> 12 - 14 November

> 12 - 15 November
Threats, challenges and evolution of forest ecosystems facing climate change
Cuauhtémoc Saenz-Romero & Philippe Rozenberg
Hôtel Dupanloup, Orléans

Volcanic halogens across the earth system: from magma to atmosphere
Tjarda Roberts
Hôtel Dupanloup, Orléans
> 27 - 28 November

> 03 - 04 December
CONNECT Considering Overlooked Networks of iNtEraCTions : seed-dispersal by non-frugivorous vectors in temperate ecosystems
Christophe Baltzinger
Hôtel Dupanloup, Orléans

05 December >
Insects as Superheroes in Sustainable Agrifood Systems: A Multidisciplinary Perspective
Karol Barragán & Umberto Diecinove
IRBI, Tours

> 05 December
How do soil microbes influence plant attraction of insect herbivores and/or parasitoids of herbivores?
Alison Bennett
IRBI, Tours

Integrating rural development into urban planning: the Right to the City as a tool for discussing and implementing Ecological Transition
Eduardo Domingues
IRBI, Tours
05 December >

> 05 - 06 December
Gestion et transmission de patrimoine dans un contexte franco-portugais
Alina Goncharova, Fabienne Labelle & Audrey Damiens
Faculté de Droit Economie et Sciences sociales, Tours

Digital twins: from creation to communication
Faten El Outa & Yann Dantal
Hôtel Dupanloup, Orléans
11 - 12 December >

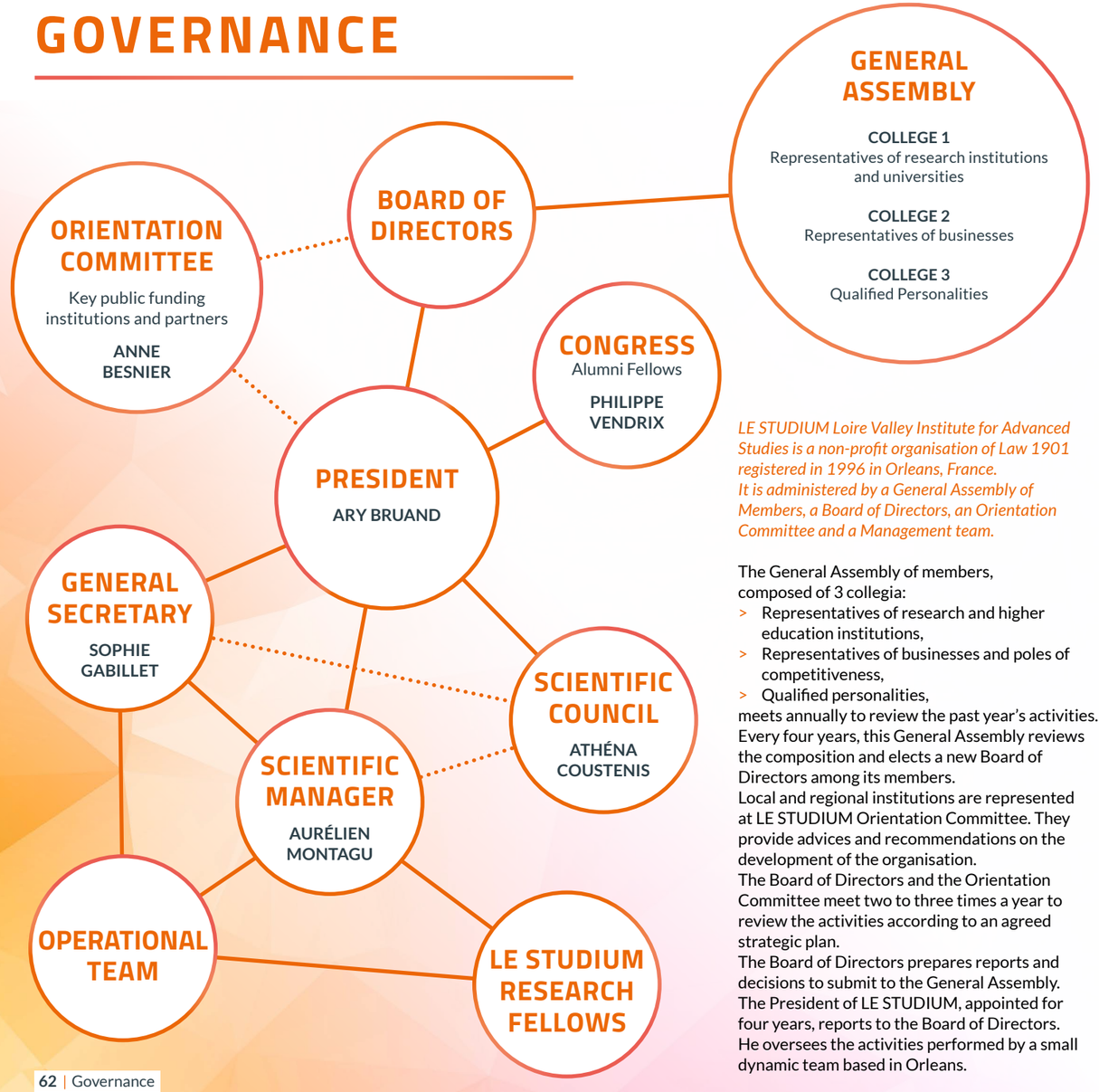
NOVEMBER

DECEMBER

THEMES IN COLOR

- CONFERENCE
- PUBLIC LECTURE
- THURSDAY
- SUMMER SCHOOL
- CONSORTIUM
- WORKSHOP

GOVERNANCE



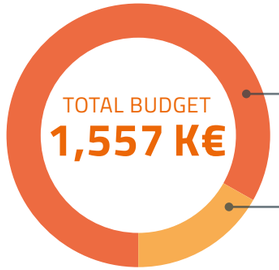
LE STUDIUM Loire Valley Institute for Advanced Studies is a non-profit organisation of Law 1901 registered in 1996 in Orleans, France.
It is administered by a General Assembly of Members, a Board of Directors, an Orientation Committee and a Management team.

The General Assembly of members, composed of 3 collegia:

- Representatives of research and higher education institutions,
- Representatives of businesses and poles of competitiveness,
- Qualified personalities,

meets annually to review the past year's activities. Every four years, this General Assembly reviews the composition and elects a new Board of Directors among its members.
Local and regional institutions are represented at LE STUDIUM Orientation Committee. They provide advices and recommendations on the development of the organisation.
The Board of Directors and the Orientation Committee meet two to three times a year to review the activities according to an agreed strategic plan.
The Board of Directors prepares reports and decisions to submit to the General Assembly.
The President of LE STUDIUM, appointed for four years, reports to the Board of Directors. He oversees the activities performed by a small dynamic team based in Orleans.

2024 BUDGET & KEY FIGURES

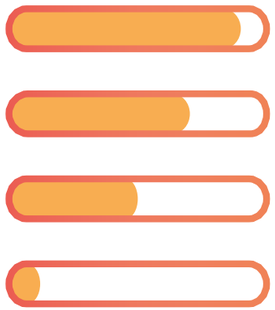


PROGRAMMES COSTS
1,339 K€

GENERAL & ADMINISTRATIVE COSTS
0,218 K€

45 FELLOWS IN TOTAL
18 WOMEN AND **27** MALES
20 NATIONALITIES
REPRESENTING **186** MONTHS OF RESEARCH IN RESIDENCE IN **27** RESEARCH LABORATORIES
31 SMART LOIRE VALLEY FELLOWS
2 VISITING ARTISTS
8 FIAS FELLOWS
4 ARD CVL FELLOWS
1 MSH VDL FELLOW
1 GREENCOSMIN FELLOW

2024 PROGRAMMES REPARTITION



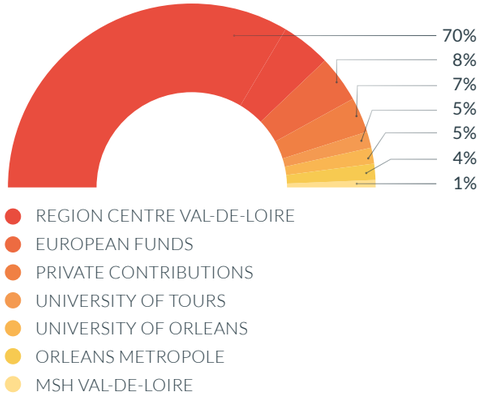
47%
SMART LOIRE VALLEY PROGRAMME

30%
ARD CVL PROGRAMMES

22%
FIAS PROGRAMME

1%
MSH-VAL-DE-LOIRE VISITING RESEARCHERS PROGRAMME

2024 FINANCIAL RESOURCES



SCIENTIFIC COUNCIL 2024

LE STUDIUM Scientific Council evaluates candidacies, establishes the final ranking of applications, and recommends Fellowship, Professorship, Visiting Artist, Visiting Researcher and Consortium awards. It is composed of independent external senior scientists who gather twice a year to analyse applications and the scientific reviews provided by a pool of a thousand experts. They finalise the selections of the Smart Loire Valley Programme and the French, the Institutes for Advanced Study (FIAS) Programme, and the MSH-Val-de-Loire Programme. The Scientific Council members are also regularly consulted for their expertise to perform independent evaluations in the course of required recruitments occurring across the Ambition Research Development CVL programmes and other invitation programmes.
For the call for applications 2024, LE STUDIUM Scientific Council members were:

Athéna Coustenis

Chair

ATHÉNA COUSTENIS
Chair, Astrophysicist, Director of Research, CNRS, at LIRA, Paris Observatory, Univ. PSL, S orbonne Univ., Université Paris Cité, CY Cergy Paris Univ., CNRS, Meudon, FR

Vice-Chairs

GORDON CAMPBELL
Fellow of the British Academy, Professor in Renaissance and seventeenth century studies, University of Leicester, UK

MARK GOERBIG
Professor Theoretical Physics, CNRS Research Director, Laboratory of Solid State Physics at the University of Paris-Saclay, FR

Members

DOMINIQUE ALLART
Professor, Director of Service d'Histoire et Technologie des Arts plastiques (Temps modernes), Université de Liège, BE

JOSEP-MARIA ARAUZO-CAROD
Professor, Director of the Center for Research in Economics and Sustainability, University of Rovira i Virgili, SP

LAURA BACIOU
Professor, Biophysics, Research Director-CNRS, at Laboratory of Physical Chemistry at the University of Paris-Saclay, FR

DAMIAN BAILEY
Professor of Physiology and Biochemistry, Director of the Neurovascular Research Laboratory, University of South Wales, UK

BRUNO CHAUDRET
CNRS Research Director in organometallic chemistry, LPCNO University of Toulouse INSA-CNRS-UPS, FR

BRUNO DELVAUX
Agronomist, Soil sciences, Catholic University of Louvain, BE

WIESLAW GRUSZECKI
Professor in Biophysics, Maria Curie-Sklodowska University in Lublin, PL

OLGA GUERRERO-PEREZ
Professor, Environmental chemistry & Chemical Engineering, Higher Technical School of Industrial Engineering, University of Malaga, SP

VALÉRIE HAYAERT
Doctor in Studies Early Modern Legal History, Law and Literature, Emblems Studies, Research Fellow, School of Law, University of Warwick, UK

AYLIN CARLA HANYALOGLU
Professor in Molecular Biology, Imperial College London, Faculty of Medicine, UK

ROSANA LÓPEZ RODRÍGUEZ
Associate Professor in Plant Physiology, Universidad Politécnica de Madrid, SP

JEAN-CLAUDE LECRON
Professor, Biochemistry & Immunology, University of Poitiers, Hospital practitioner at the University Hospital of Poitiers, FR

ALBERTO MARZO
Associate Professor in Cardiovascular Biomechanics, University of Sheffield, UK

MIRELA MOLDOVAN
Professor in Dermatology & Cosmetology at University of Medicine and Pharmacy, Cluj Napoca, RO

AGNIESZKA PARTYKA
Professor in Reproduction and Clinic of Farm Animals, Wroclaw University of Environmental and Life Sciences, PL

LAURENT TISSOT
Professor, Contemporary History, University of Neuchâtel, CH

ANA RIVERO
CNRS Research Director in Evolutionary Biology of Infectious Diseases, MIVEGEC, University of Montpellier, FR

EMMANUEL TRELAT
Professor, Mathematics, Sorbonne University, Director of the Jacques-Louis Lions laboratory, FR

LAURENT WARLOUZET
Professor, History of European cooperation and European Union, Paris Sorbonne-Université, FR

RALPH WATZEL
Professor, Geology and Geophysics, President of the Federal Institute for Geosciences and Natural Resources (BGR), Hannover, DE

TATJANA WELZER DRUZOVEC
Professor, Computer science, University of Maribor, Faculty of Electrical Engineering and Computer Science, SI

LE STUDIUM TEAM

Sophie Gabillet
General Secretary

Aurélien Montagu
Scientific Manager

Marie-Frédérique Pellerin
Finance & Administration Manager

Maurine Villiers
Communication & Events Manager

Agathe Emmanuel
Junior Events & Communication Assistant

LIST OF RESEARCHERS IN RESIDENCE IN 2024

SMART LOIRE VALLEY PROGRAMME

Erminia Ardissino
Praying in Renaissance: a multiplicity of texts, theories, and practices in a changing Europe
September 2023 - July 2024
In residence at: Centre for Advanced Studies in the Renaissance (CESR) / CNRS, University of Tours
Host scientist: Elise Boillet

Francis Bambico
Non-Invasive Therapeutic Neuromodulation Strategies for Psycho-Affective Disorders in High-Risk Conditions
December 2023 - December 2024
In residence at: Imaging, Brain and Neuropsychiatry (iBraiN), University of Tours, Inserm - Tours
Host scientist: Catherine Belzung

Karol B. Barragán-Fonseca
Multidimensional assessment of the potential of insects for sustainable agri-food systems
May, 2024 - March, 2025
In residence at: Insect Biology Research Institute (IRBI), University of Tours / CNRS
Host scientist: David Giron

Bryan Beckingham
Leveraging tunability of copolymer gradients during polymer synthesis to advance understanding of polymer self-assembly in confined geometries
September, 2024 - July, 2025
In residence at: Interfaces, Confinement, Materials and Nanostructures (ICMN) - CNRS / University of Orléans
Host scientist: Christophe Sinturel

Lauren Beckingham
Multi-scale observation and simulation of mineral reactions in subsurface energy systems
September, 2024 - July, 2025
In residence at: Earth sciences institute of Orleans (ISTO) - CNRS, BRGM, OSUC / University of Orléans
Host scientist: Cyprien Soulaine

Alison Bennett
How do soil microbes influence plant attraction of insect herbivores and/or parasitoids of herbivores?
August, 2024 - January, 2025
In residence at: Insect Biology Research Institute (IRBI), University of Tours / CNRS
Host scientist: David Giron

Wen Chen
Fault Diagnosis of Networked Battery Systems for Industrial Risk Control and Management
May, 2024 - July, 2024
In residence at : PRISME / INSA Centre Val-de-Loire, University of Orléans
Host scientist: Driss Boutat

John Cooper
Royal Journeys, Palaces and Pageantry in England and France 1460-1589: Establishing a Comparative and Multidisciplinary Methodology.
October, 2024 - January, 2025
In residence at: Centre for Advanced Studies in the Renaissance (CESR) / CNRS, University of Tours
Host scientist: Philippe Vendrix

Giulia Cozzani
Unraveling energy conversion in space plasmas
November, 2024 - November, 2025
In residence at: Laboratory of Physics and Chemistry of Environment and Space (LPC2E) / CNRS, University of Orléans, CNES
Host scientists: Matthieu Kretzschmar

Umberto Diecinove
I N S C T S, in collaboration with the research project: Multidimensional assessment of the potential of insects for sustainable agri-food systems
August, 2024 - March, 2025
In residence at: Insect Biology Research Institute (IRBI), University of Tours / CNRS
Host scientist: David Giron

Ganesh Duraisamy
Potential of zero and low carbon fuels in high-efficiency clean combustion engines
March, 2024 - March, 2025
In residence at: PRISME / INSA Centre Val-de-Loire, University of Orléans
Host scientist: Christine Rousselle

Ionuț Epurescu-Pascovici
Registering Social Change: How Historical Transformations Are Reflected in the "Livres de Raison" (c. 1400–1600)
September, 2024 - December, 2024
In residence at: Institute for Research and History of Texts (IRHT) / CNRS
Host scientist: Sébastien Barret

Kenji Fukushima
Quantum phases of matter in gravitational spacetimes
November, 2024 - February, 2025
In residence at: Institut Denis Poisson / CNRS, University of Orléans, University of Tours
Host scientist: Maxim Chernodub

Jill Heathcock
Adding movement analysis to detect neurodevelopmental impairments in infants of obese mothers
May, 2024 - July, 2024
In residence at: Imaging and Brain laboratory (iBrain) / INSERM, University of Tours
Host scientist: Frédérique Bonnet-Brilhault & Delphine Mitanchez

Antonio Hernandez-Lopez
Characterizing hyperdiverse insect communities of tropical dry forests using high-throughput molecular approaches
March, 2024 - July, 2024
In residence at : Insect Biology Research Institute (IRBI), University of Tours / CNRS
Host scientist: Carlos Lopez-Vaamonde

Lindy Holden-Dye
Novel control strategies for arthropod pests through characterisation of their essential ion channels in a Caenorhabditis elegans expression platform
October, 2024 - March, 2025
In residence at: Infectiology and Public Health (ISP) / Centre INRAE Val-de-Loire, University of Tours
Host scientist: Fotini Koutroumpa

Johannes Kaesmacher
PeRfusiOn Post tHrombEcTomy (PROPHET) - A technical development and clinical validation project
September, 2024 - August, 2025
In residence at: Clinical Investigation Centre of Tours - Technological Innovation, Regional Hospital University in Tours
Host scientist: Grégoire Boulouis

Sungyup Lee
A Study on the Translation Strategies of Korean - Picture Books published in France
December 2023 - February 2024
In residence at: InTRu (Interactions, Transferts, Ruptures artistiques et culturelles) / University of Tours
Host scientist: Cécile Boulaire

Vera Mazurak
Promotion of Muscle Homeostasis by Essential Fatty Acids
January, 2024 - May, 2024
In residence at: Nutrition, Cancer & Oxidative metabolism (N2COX) / INSERM, University of Tours
Host scientist: Stéphane Servais

Deborah McGrady
The Return of Joan of Arc: The Maiden's Adventures in BDs, Mangas and Graphic Novels
May, 2024 - August, 2024
In residence at: POuvoirs, LEttres, Normes (POLEN) / University of Orléans
Host scientist: Philippe Haugeard

Vincent Pecoraro
Lanthanide Based Metallacrowns as Near-Infrared Emitting Biological Probes
April, 2024 - July, 2024
In residence at: Molecular Biophysics Center (CBM) / CNRS
Host scientist: Stéphane Petoud

Elidiane Rangel
Antimicrobial and Catalytic Activity of Multi-metallic Nanoparticles Synthesized by Cathodic Sputtering in Liquids
August, 2024 - October, 2024
In residence at: Research Group in the Energetics of Ionized Media (GREMI) / CNRS, University of Orléans
Host scientist: Eric Robert

Cuauhtémoc Sáenz-Romero
Plasticité de la croissance et de la formation du bois en réponse au changement climatique chez les arbres forestiers
March, 2024 - July, 2024
In residence at: BioForA, Centre INRAE Val-de-Loire / ONF
Host scientist: Philippe Rozenberg

Sergey Samsonov
Computational approaches for cathepsin-glycosaminoglycan systems
July, 2024 - December, 2024
In residence at: Centre for the Study of Respiratory Pathologies (CEPR) / Inserm, University of Tours
Host scientist: Fabien Lecaille

Thomas Shea
Timing Magma Transit in the Earth using Crystal Clocks
September, 2024 - June, 2025
In residence at: Earth sciences institute of Orleans (ISTO) - CNRS, BRGM, OSUC / University of Orléans
Host scientist : Estelle Rose-Koga

Alessandro Turbil
Medieval lyric heritage in the French printing and bookselling network (1470-1600): a bibliographical and ontological preliminary study.
September, 2023 - August, 2024
In residence at: Centre for Advanced Studies in the Renaissance (CESR) / CNRS, University of Tours
Host scientist: Silvère Menegaldo & Elena Pierazzo

Art Woods
Application to microfluidics of chemically driven gas flows in insect tracheal systems
March, 2024 - June, 2024
In residence at: Insect Biology Research Institute (IRBI), University of Tours / CNRS
Host scientist: Jérôme Casas

GUEST RESEARCHERS

Nilson C. Cruz
Non-antibiotics biocides produced by atmospheric plasmas with natural extracts
August, 2024 - October, 2024
In residence at: Research Group in the Energetics of Ionized Media (GREMI) / CNRS, University of Orléans
Host scientist: Eric Robert

Serhat Karaca
Alternative practice to artificial feeding in goat farming: consequences on behaviour, microbiota, health and milk quality
July, 2024 - June, 2025
In residence at: Physiology of Reproduction and Behaviour (PRC) / Centre INRAE Val-de-Loire, CNRS, University of Tours, IFCE
Host scientist: Raymond Nowak

Yu Kimura
Nanoparticle contrast agents: synthesis and characterization
November, 2023 - April, 2024
In residence at: Center for Molecular Biophysics (CBM) / CNRS
Host scientist: Eva Jakab Toth

Alina Goncharova
The development of digital wills for managing virtual assets as a means to automate the inheritance process in the digital realm.
March, 2022 - December, 2024
In residence at: Institute of Interdisciplinary Law Research (IRJI) / University of Tours - Tours
Host scientist: Fabienne Labelle

Alexander Robinson
Music, Religion and Civic Identity in Renaissance Avignon (c.1500–1630)
October, 2022 - September, 2024
In residence at: Centre for Advanced Studies in the Renaissance (CESR) / CNRS, University of Tours
Host scientist: Philippe Vendrix

ARD CVL BIOPHARMACEUTICALS PROGRAMME

Prof. Remo Russo
Autologous transplantation of myeloid cells reprogrammed ex-vivo by STING-Dependent Adjuvants (STAVs) as an alternative cell therapy for the treatment of Idiopathic Pulmonary Fibrosis
October 2023 - September 2024
In residence at: Immuno - Neuro Modulation (INEM) / CNRS, University of Orléans
Host scientist: Dr Valérie Quesniaux

ARD CVL JUNON PROGRAMME

Félix Iglesias Vázquez
Development of digital twin software prototypes and validation of communication protocols
September, 2024 - December, 2024
In residence at: PRISME Laboratory / University of Orléans, INSA CVL
Host scientist: Frédéric Ros

Amit Sharma
Integration of heterogeneous data and algorythms, and development of intelligent interfaces for digital twins
October, 2024 - October, 2025
In residence at: PRISME Laboratory / University of Orléans, INSA CVL
Host scientist: Frédéric Ros

FRENCH INSTITUTES FOR ADVANCED STUDY (FIAS) PROGRAMME

Carlo Bosi
The Chansonnier de Bayeux : An Early 16th-Century Monophonic Source and its Polyphonic Relatives October, 2024 - July, 2025
In residence at: Centre for Advanced Studies in the Renaissance (CESR) / CNRS, University of Tours
Host scientist: Philippe Vendrix

Sébastien Drouin
The circulation of Literary News and Forbidden Books Between Paris and The Hague (1710-1725)
April, 2024 - December, 2024
In residence at: POuvoirs, LEttres, Normes (POLEN) / University of Orléans
Host scientist: Marion Brétéché

Eduardo Garcia Ribeiro Lopes Domingues
Rural and urban development integration through democratic territorial planning and environmental concern
July, 2024 - December, 2024
In residence at: Maison des Sciences de l'Homme Val-de-Loire (MSH VdL) / University of Tours & Cities, Territories, Environment and Societies (CITERES) / CNRS, University of Tours
Host scientist: Romeo Carabelli

Stefan Heßbrüggen-Walter
The Afterlife of a Renaissance Genre: A Census of Dissertations in French Libraries 1500-1800
September 2023 – June 2024
In residence at: Centre for Advanced Studies in the Renaissance (CESR) / CNRS, University of Tours
Host scientist: Fosca Mariani Zini & Elena Pierrazo

Aneta Slowik
Educational and cultural needs of Ukrainian refugee children in the Loiret department: Their lived experiences and biographical stories
September 2023 - June 2024
In residence at: Research Team on Contexts and Education Actors (ÉRCAÉ), University of Orléans
Host scientist: Philippe Bourdier

Ali Soltani
Investigating the Spatio-temporal Heterogeneous Changes in Internal Migration Patterns, the Case Study of Melbourne
October, 2024 - March, 2025
In residence at: Centre d'Etudes pour le Développement des Territoires et l'Environnement (CEDETE) / University of Orléans
Host scientist: Geneviève Pierre

Sara Taglialatela
Philipp Melanchthon, Giordano Bruno, and Michel de Montaigne on memory and oblivion: Three case studies on philosophy of memory in the sixteenth century.
October, 2024 - July, 2025
In residence at: Centre for Advanced Studies in the Renaissance (CESR) / CNRS, University of Tours
Host scientist: Fosca Mariani Zini

ARTS-SCIENCES RESIDENCY PROGRAMME

Anna Steward
BioQuantum Record - Communicating with the Other
November, 2024 - September, 2025
In residence at: École supérieure d'art et de design d'Orléans (ESAD Orléans) & Centre for Molecular Biophysics (CBM) /CNRS
Host scientist: Caroline Zahnd & Matthieu Réfrégiers

GREENCOSMIN PROGRAMME

Anna Wawruszak
GreenCosmIn - green chemistry and biotechnology approaches for the development of nature-based cosmetics
September, 2024 - November, 2024
In residence at: Center for Molecular Biophysics (CBM), Biology and Biophysics of Receptors, Translational Applications (BioBRAT) Department / CNRS
Host scientist: Catherine Grillon

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Ary Bruand
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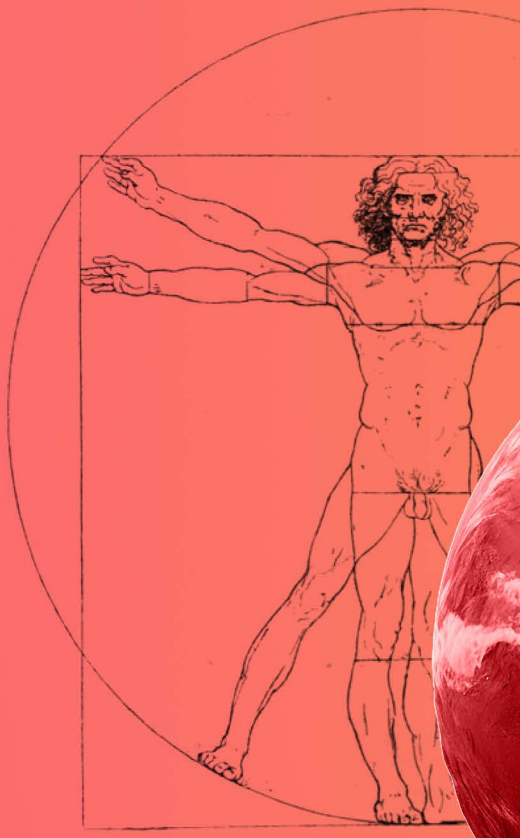

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Co-funded by the European Union
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