FROM THE DIRECTOR

Happy autumn! I hope everyone’s fall is off to a flying start. We’ve had lots of interesting new projects at the France-Stanford Center this past year. These have included creating a digital map of the French explorer, naturalist, writer and ornithologist François Le Vaillant’s journey into the interior of the Cape of Good Hope (1781-83); a study of political language in India during the transition from democracy to authoritarianism; and a conference on transnational exchange in the development of criminal law in Europe and the United States.

As part of our fellowship program, graduate students and young scholars were able to conduct research on topics ranging from mapping the potential of photovoltaic energy for groundwater pumping in Africa to developing a real-time cancer cell tracking algorithm for cancer patients. We were delighted to be able to send our undergraduate students to France this past summer! The internship program, now in its fifth year, is a great success and the Center received many applications this year. The program enables Stanford undergraduates to pursue research in France at institutions such as INSERM, the Gagosian Gallery, Sorbonne University, the University of Montpellier and the Ecole CentraleSupélec. We were pleased to send our first students to the Paris-Saclay Institute of Neuroscience, the Paris-Saclay FAST Laboratory and the Cluny Museum. We are deeply grateful to these institutions in France for hosting our students during their summer internships.

In 2022-23, we hosted visiting lecturers on topics including current nuclear risks and threats, and the foundation of a habitable earth.
We awarded our third round of student prizes, the Josephine Baker Honors Thesis Prize, the Louise Bourgeois Essay Prize for Masters-level and early Ph.D. students, and the James Baldwin Essay Prize for advanced Ph.D. students. Two fellowships were awarded as part of our newly introduced collaboration with Stanford Libraries: the Roxanne Debiusson Fellowship for Stanford graduate students to work on the Roxanne Debiusson Collection on Paris History; and the Gustave Gimon Fellowship to support a visiting researcher in the Gustave Gimon Collection on French Political Economy. For more information on the Center, including a complete list of conferences and grant and fellowship recipients, I invite you to visit our website.

Finally, I want to acknowledge and thank the members of our Executive Committee for generously providing their time, hard work, and invaluable expertise to make sure the Center’s mission is fulfilled. We are extremely grateful to our colleagues at Stanford and in France, including the French Embassy in Washington, the French Ministry for Europe and Foreign Affairs, the French Cultural Services in New York, the Office for Science & Technology in Washington, D.C., and the French Consulate in San Francisco.

Wishing you the very best for the new academic year,

Jessica Riskin

(continued from page 1)

We awarded our third round of student prizes, the Josephine Baker Honors Thesis Prize, the Louise Bourgeois Essay Prize for Masters-level and early Ph.D. students, and the James Baldwin Essay Prize for advanced Ph.D. students. Two fellowships were awarded as part of our newly introduced collaboration with Stanford Libraries: the Roxanne Debiusson Fellowship for Stanford graduate students to work on the Roxanne Debiusson Collection on Paris History; and the Gustave Gimon Fellowship to support a visiting researcher in the Gustave Gimon Collection on French Political Economy. For more information on the Center, including a complete list of conferences and grant and fellowship recipients, I invite you to visit our website.

Finally, I want to acknowledge and thank the members of our Executive Committee for generously providing their time, hard work, and invaluable expertise to make sure the Center’s mission is fulfilled. We are extremely grateful to our colleagues at Stanford and in France, including the French Embassy in Washington, the French Ministry for Europe and Foreign Affairs, the French Cultural Services in New York, the Office for Science & Technology in Washington, D.C., and the French Consulate in San Francisco.

Wishing you the very best for the new academic year,

Jessica Riskin

(continued from page 1)

The France-Stanford Center for Interdisciplinary Studies provides funding for scholarly conferences or workshops to be held at Stanford or at any French research institution. For more information, please visit our website.

CONFERENCES

Transnational Exchange in the Development of Criminal Law Thought: Western Europe and the United States, 19th and 20th Centuries

Amalia Kessler, Stanford Law School, Stanford University
Jean-Louis Halpérin, Ecole Normale Supérieure Paris

Despite the centrality of criminal law and procedure to core questions of constitutional rights and governance throughout the modern-day West (and beyond), the disciplines of comparative criminal law and procedure remain relatively underdeveloped. This workshop brought together scholars from France and Stanford, as well as from Germany, Italy, Spain, Portugal, and other U.S. institutions, to recover the neglected transnational conversations that connected criminal jurists across Western European countries with one another and with the United States during the period that spanned the nineteenth and early-to-mid twentieth centuries. We explored the interrelation between developments in criminal law, procedure, and punishment and broader social and political challenges stemming first from political liberalization and then subsequently from industrialization and the concomitant emergence of theories of social determinism.

“There are surprisingly few scholarly conferences in law that cross borders in any meaningful way. So it was especially meaningful to be in a room full of legal scholars from the U.S., France, and other European countries. Jean-Louis and I both made connections with people with whom we have not previously had the opportunity to engage. And we heard the same from many of the conference participants. I have invited one of the participants whom I did not previously know (Luigi Lacchè) to present in one of our Stanford Center for Law and History workshops this coming spring.”

— Amalia Kessler, Law School, Stanford University
LECTURES

“You Don’t Screw with the Sahara: African Dust & the Return of the French Nuclear-Imperial Repressed”

Roxanne Panchasi, Simon Fraser University
Event co-sponsored by the Center for International Security & Cooperation and The Program in History & Philosophy of Science at Stanford University.

“How We have Come to Live with Nuclear Risks & Threats”

Bernadette Bensaud-Vincent, University of Paris 1 Panthéon-Sorbonne, Soraya Boudia, University of Paris Cité and Kyoko Sato, Program in Science, Society, and Technology, Stanford University
Co-sponsored by the Center for International Security & Cooperation, The Program in History & Philosophy of Science and Stanford Existential Risks Initiative.

“Medieval Art & Music Between Heritage, Modernity & Multi-Media”

Co-sponsored by the Departments of Art & Art History, Music, History, Religious Studies, English, Theater & Performance Studies, The Europe Center, CMEMS, Stanford Global Studies Division, Stanford Arts Institute, Cultivating the Humanities Grant.

“What’s the Problem with Eurocentrism?”

Karine Chemla, SPHERE, CNRS & Paris Cité University
Co-sponsored by The Program in History & Philosophy of Science.

“You Don’t Screw with the Sahara: African Dust & the Return of the French Nuclear-Imperial Repressed”

Roxanne Panchasi, Simon Fraser University
Event co-sponsored by the Center for International Security & Cooperation and The Program in History & Philosophy of Science at Stanford University.

“How We have Come to Live with Nuclear Risks & Threats”

Bernadette Bensaud-Vincent, University of Paris 1 Panthéon-Sorbonne, Soraya Boudia, University of Paris Cité and Kyoko Sato, Program in Science, Society, and Technology, Stanford University
Co-sponsored by the Center for International Security & Cooperation, The Program in History & Philosophy of Science and Stanford Existential Risks Initiative.

“Medieval Art & Music Between Heritage, Modernity & Multi-Media”

Co-sponsored by the Departments of Art & Art History, Music, History, Religious Studies, English, Theater & Performance Studies, The Europe Center, CMEMS, Stanford Global Studies Division, Stanford Arts Institute, Cultivating the Humanities Grant.

“What’s the Problem with Eurocentrism?”

Karine Chemla, SPHERE, CNRS & Paris Cité University
Co-sponsored by The Program in History & Philosophy of Science.

“How We have Come to Live with Nuclear Risks & Threats”

Bernadette Bensaud-Vincent, University of Paris 1 Panthéon-Sorbonne, Soraya Boudia, University of Paris Cité and Kyoko Sato, Program in Science, Society, and Technology, Stanford University
Co-sponsored by the Center for International Security & Cooperation, The Program in History & Philosophy of Science and Stanford Existential Risks Initiative.

“What’s the Problem with Eurocentrism?”

Karine Chemla, SPHERE, CNRS & Paris Cité University
Co-sponsored by The Program in History & Philosophy of Science.

“Who Makes the Earth Habitable? From a Metaphysics of Production to a Metaphysics of Alliance”

Baptiste Morizot, Aix-Marseille University
Co-sponsored by the Departments of French and Italian, Philosophy, The Program in History & Philosophy of Science, The Program in Science, Technology, and Society, Stanford Global Studies Division, and the Stanford Humanities Center.

Visit our website to see upcoming conferences and events, and to find out more information.
The France-Stanford Center facilitates research between Stanford and French Institutions, across all disciplines. It provides funding to faculty, postdocs, young scholars, and students.

- **287K** in Research Funding
- **9** Disciplines
- **16** Faculty
- **21** Students
- **4** Junior Scholars

### Research Funding Breakdown

- **Collaborative Projects**: $74,000
- **Visiting Student Researcher Fellowship**: $97,500
- **Undergraduate Program**: $48,000
- **Conferences**: $37,000
- **Visiting Fellowship H&S**: $10,000
- **Visiting Junior Scholar Fellowship**: $20,000
- **Roxane Debuisson Fellowship**: $3,500
- **Gimon Fellowship**: $4,000
- **Student Prizes**: $2,500
COLLABORATIVE RESEARCH

The France-Stanford Center sponsors high-quality collaborative research projects across all academic disciplines, to foster new linkages and deepen existing connections between French scholars and students and their counterparts at Stanford University. For more information, please visit our website.

AI-based Computational Modeling Tools with Applications to Psychiatric Disorders

Vinod Menon, Department of Psychiatry and Behavioral Sciences, Stanford University
Xavier Hinaut, INRIA, Bordeaux

This grant allowed us to start a new collaboration between Vinod Menon’s lab at Stanford (including research scientists, post-doctoral scholars and students: Anthony Strock, Percy K. Mistry, Trang-Anh E. Nghiem, Aarushi V. Patil) and Xavier Hinaut’s lab at Inria, Bordeaux (including his Ph.D. student Nathan Trouvain). The collaboration explored novel modeling approaches to investigate whether neural E/I (excitability/inhibitory) imbalances can cause atypical sensory processing observed in psychiatric disorders, and investigate the underlying mechanisms associated with such atypical processing. The two teams met in person at Inria Bordeaux in June 2023. To explore the possibility of expanding our collaboration, at Inria Bordeaux we also had a discussion with other PIs from the Bordeaux lab — Frédéric Alexandre, Nicolas Rougier and Amélie Aussel, who presented their current research, followed by discussions for potential joint applications. The Stanford team then visited the institute of neurodegenerative disease at Bordeaux (the location of Xavier Hinaut’s lab), brainstorming of research ideas and potential collaborations were discussed with multiple PIs performing experimental research using recording techniques such as electrophysiology with different animal models including rodents, birds and primates, or fMRI in humans. Vinod Menon gave a presentation to members of multiple labs from the neuroscience eco-system in Bordeaux.

“This grant has allowed us to start a collaboration between Vinod Menon’s lab at Stanford (including research scientists, post-doctoral scholars and students: Anthony Strock, Percy K. Mistry, Trang-Anh E. Nghiem, Aarushi V. Patil) and Xavier Hinaut’s lab at Inria, Bordeaux (including his Ph.D. student Nathan Trouvain). The collaboration explored novel modeling approaches to investigate whether neural E/I (excitability/inhibitory) imbalances can cause atypical sensory processing observed in psychiatric disorders, and investigate the underlying mechanisms associated with such atypical processing. The two teams met in person at Inria Bordeaux in June 2023. To explore the possibility of expanding our collaboration, at Inria Bordeaux we also had a discussion with other PIs from the Bordeaux lab — Frédéric Alexandre, Nicolas Rougier and Amélie Aussel, who presented their current research, followed by discussions for potential joint applications. The Stanford team then visited the institute of neurodegenerative disease at Bordeaux (the location of Xavier Hinaut’s lab), brainstorming of research ideas and potential collaborations were discussed with multiple PIs performing experimental research using recording techniques such as electrophysiology with different animal models including rodents, birds and primates, or fMRI in humans. Vinod Menon gave a presentation to members of multiple labs from the neuroscience eco-system in Bordeaux.

“Anthony Strock has played a critical role in building this collaboration, and this will be a strong positive aspect in his future application for permanent researcher positions in France. It also gave him the opportunity to gain some mentoring experience, as he mentored Aarushi Vishal Patil, an undergraduate student at Stanford assisting on this project. This grant has also enabled Trang-Anh E. Nghiem to make new connections in the fields of computational and cognitive neuroscience, in which she wishes to pursue her academic career to become an independent researcher.”

Vinod Menon

“We would like to express our gratitude to the France-Stanford Center for allowing us to start a collaboration from scratch without any preliminary results that ended up being extremely fruitful. This gave us at Stanford the opportunity to visit the Neuroscience eco-system in Bordeaux, and gave the team at Bordeaux the opportunity to broaden the spectrum of possible applications to psychiatric disorders.”

Vinod Menon and Xavier Hinaut
Mapping the Early Cape

Grant Parker, Department of Classics, Stanford University
Olivier Loiseaux, Bibliothèque Nationale de France, Paris

This project aimed at digitally mapping Le Vaillant’s journey from the account of his journey into the interior of the Cape of Good Hope (1781-83). The Voyage de M. le Vaillant dans l'Intérieur de l'Afrique par le Cap de Bonne-Espérance (1790) stands out for its detailed ethnography of the amaXhosa and Khoe people; for its natural history; and for its cartography. The text offers unique insights into South Africa’s early colonial period, and the natural history arising from this ‘first safari’ is directly reflected in French museum collections. Furthermore, Le Vaillant created the elaborate ‘King’s Map’ in response to a commission from Louis XVI. Our new digital map is enriched by historic images, documents and newly commissioned site photographs. The resulting open-access website has a distinctive identity but also provides a template for the mapping of other European travelers in the early Cape colony: these will generate public-facing history out of historical archives.

Improving Perioperative Care for Children Receiving Solid Organ Transplantation

Mihaela Damian, Department of Pediatrics, Stanford University
Florence Lacaille, Hôpital Necker des Enfants Malades, Paris

Pediatric liver transplantation is a very challenging surgical procedure that saves lives for children that are born or develop severe liver disease. The pediatric liver transplant program at Stanford, is one of the largest programs in the United States with excellent outcomes for both graft and patient survival. Similarly, L'hospital Necker Enfants malades in Paris is one of the largest centers in Europe with great outcomes.

Multidisciplinary teams from both hospitals collaborated to further advance the care of children requiring a liver transplant due to metabolic diseases affecting the liver. Those children are at very high risk for neurologic complication due to accumulation of very toxic products as they miss different enzymes produced by the liver. We developed education materials for both medical providers and families, medical protocols to address common medical problems such as postoperative care in the intensive care unit, blood transfusion, pain management and immunosuppression, all very important aspects of the care that the new transplanted organ function depends on for a successful outcome.
UNDERGRADUATE FELLOWSHIP

The Undergraduate Fellowship Program funds Stanford undergraduate research and internships at French institutions. During the academic year 2022-23, the center awarded two fellowships. For more information on the Undergraduate Fellowship Program, please visit our website.

2 Awarded Fellowships

Paris-Saclay Institute of Neuroscience • Cluny Museum

Ilan Ladabaum, Department of Symbolic Systems, Stanford University (2024)

*Visiting Institution: Neuroscience Institute Paris-Saclay*

**NeuroInfection and Immunity Laboratory Internship**

This internship provided me with a wonderful opportunity to develop my skills in different areas, as I undertook both wet-lab neuroscience research and data analysis. Specifically, I implemented an assay of spinal cord transection and repair for the wet lab project, and I analyzed high-content behavioral data generated by the lab for my data-based project. I have a strong programming background, but I have never worked in a wet lab, so this combination of projects provided the perfect opportunity to expand my academic knowledge while offering a useful skill set to further the research of Professor Levraud’s lab.

Angie Lopez, Department of Art History, Stanford University (2023)

*Visiting Institution: Cluny Museum*

**Cluny Museum Internship**

During my time as an intern at the Cluny Museum- National Museum of the Middle Ages, I pursued my interests in the multimedia and performative character of Medieval objects. In light of ongoing research amplifying the phenomenology of Medieval objects, the Cluny is transforming the display of medieval objects in their upcoming temporary collection. Through this internship, under the direct sponsorship of their General Curator, Isabelle Bardiès, I participated in the production of the exhibition catalogue, museum labels, and other exhibition materials related to the public reception of these works.

“Working within a museum like the Cluny has allowed me to conduct object-based research within a world-renowned collection of objects directly related to my research interests.” — Angie Lopez
UNDERGRADUATE INTERNSHIP PROGRAM

The France-Stanford Center for Interdisciplinary Studies sponsors undergraduate internships with leading French-based institutions during the summer through the Global Studies Internship Program. For more information, please visit our website.

5 Awarded Internship

Ecole CentraleSupélec • Paris-Saclay University FAST Laboratory • Sorbonne University • University of Montpellier (LIRMM)

Hunter Hollenbeck, Department of Physics and Electrical Engineering, Stanford University (2024)

Visiting Institution: Ecole CentraleSupélec, Non-Equilibrium Plasma Laboratory, Gif-sur-Yvette

CentraleSupélec Internship

During my internship, I was tasked with getting and improving metrics from a thermal camera that was being used to model reentry of satellites and the plasma that forms during this. My work involved coding and image processing of the thermal images, learning the physics of thermal imaging, the electrical engineering of wiring up a measurement probe, and we also performed some experiments in the lab which was great. I learned a lot about how I respond to living in a big city and abroad, and what it’s like to work in academia in an institution that isn’t Stanford. The grant has certainly shaped my academic and professional career. Before embarking on this journey, I thought that I had a good chance of ending up abroad because of different opportunities and ways of life. Now though, I have understood that there is so much to appreciate being in the United States and I could not imagine being able to live the life I want abroad. A lot of that comes out of the things that make up my life currently: being a student-athlete, enjoying working at fast paced startups and being close to my parents as they get older. All of these things are unique to the United States and are non-negotiables for me.

“I also learned how different a language is when spoken compared to reading and writing. I read books in French and understand completely, yet there is so much slang in spoken French that I felt lost for the first few weeks in Paris.” — Hunter Hollenbeck
Melanie Quan, Department of Mechanical Engineering, Stanford University (2025)

**Visiting Institution:** Paris-Saclay University FAST Laboratory, Orsay, France

**FAST Laboratory Internship**

In the coming years, finding alternative, sustainable, robust, and economic solutions will be a necessary and favorable transition for many industries. Algae, specifically microalgae, hold high value in biotechnology, as they can grow densely and rapidly with little infringement on land space and other resources necessary for the global population. These photosynthetic organisms offer an array of benefits ranging from biofuel production, carbon capture, wastewater treatment, and the manufacturing of high-value bioactive compounds. To fully harness this potential, it is critical to understand and manipulate their behavior. I focused on understanding the phototaxic movement of Chlamydomonas reinhardtii, a well-studied species of motile microalgae that would be a candidate for growing in industrial photobioreactors for biotechnology applications. One of the crucial phenomena in Chlamydomonas is its phototaxis, or movement in direct response to light stimuli. Studies on the biomixing of Chlamydomonas help to assert its promise as a species for use in industrial, self-stirring bioreactors through observations at the microscopic and macroscopic scale. These studies note coordination between Chlamydomonas’ eyespot and flagella, which direct Chlamydomonas in the direction of light. They also provide evidence of stirring through observation of currents or flows.

Maya Czeneszew, Department of Electrical Engineering (2023)

**Visiting Institution:** Sorbonne University — Computational & Quantitative Biology, Paris

**Evaluating the Performance of ESM, protBERT, and T5 LLM Models on Predicting Soft-Disordered Regions in Proteins**

The transformer architecture was first introduced in 2017 in the paper “Attention is All You Need,” by Vaswani et al. Since this architecture has been introduced, this architecture has been greatly influential in the fields of Natural Language Processing (NLP), with several applications to domains such as Computer Vision, Signal Processing, and Audio and Speech processing (Islam et al., 2023). The architecture consists of an encoder-decoder model which improves upon limitations present in models such as Recurrent Neural Networks (RNNs) and Long Short-Term Memory (LSTM) neural networks which do not capture long-range dependencies as well, which is crucial to achieving success with NLP applications such as translation. At the beginning of the internship, I prepared scripts to split the data up based on training, test, and validation sequences in order to be tokenized and to be combined into Dataloader objects as input to the HuggingFace models that were being used, along with labels. Additionally, I performed data analysis on both the intrinsic disordered and soft disordered datasets to understand various metrics about the datasets that could inform the training of the model. I also wrote a Python script that combined all of the steps of the training process, from splitting up the datasets into training, test, and validation sequences, tokenization, loading the model and freezing certain layers if necessary, to instantiating the HuggingFace Trainer and custom TrainerWithWeightedLoss Class.
**Mia Dittrich**, Department of Biomedical Computation (2025)

*Visiting Institution: Sorbonne University — Computational & Quantitative Biology, Paris*

**Protein Variation**

This past summer, I had the pleasure of working as a research intern at the Laboratory of Computational and Quantitative Biology at Sorbonne Université in Paris. I was mentored by Dr. Alessandra Carbone and worked closely with Mustafa Tekpinar, a postdoctoral researcher in the lab. In my project, I modified and tested a program predicting the effects of single amino acid deletions across the length of a protein. Protein variation strongly underlies evolutionary change and biological diversity. While the majority of research on protein variation has focused on substitutions of amino acids, their deletions may abruptly alter protein structure, function, and dynamics. As a result, they have the potential to cause deleterious effects on proteins (Savino, Desmet, & Franceus, 2022). In addition, deletions in human proteins may be pathogenic and have been implicated in diseases and disorders such as cystic fibrosis (Stanke et al., 2006), Stormorken syndrome (Gamage et al., 2023), and PSEN1-associated Alzheimer’s disease (Voglein et al., 2019). Thus, predicting the effects of deletions on proteins is vital for understanding—and engineering treatments for—various diseases and disorders.

---

**Diego Valdez Duran**, Department of Computer Science, Stanford University (2024)

*Visiting Institution: University of Montpellier, LIRMM, Montpellier*

**LIRMM Internship**

During my internship at LIRMM, I investigated efficient data management across the CPU and memory levels in the von Neumann architecture for SoC performance optimization. There have been many processor microarchitecture techniques developed for this optimization in previous research such as cache replacement policies, branch prediction, value prediction, and prefetching mechanisms. While techniques have advanced the state-of-the-art for singular mechanisms, it is worth noting that the aforementioned microarchitecture techniques are usually independently researched which may affect current performance and efficiency. We know that memory management techniques often focus on optimizing performance at a single-level of the memory hierarchy, leaving potential optimizations unexplored.

“Our findings suggest one possible way where our approach is successful, but we hope that our insights and techniques shown can inspire future models or design of microarchitectural problems, investigating further relationships between mechanisms in combinations.” — Diego Valdez Duran
VISITING STUDENT RESEARCHER FELLOWSHIP

The Visiting Student Researcher Fellowship is available to graduate students affiliated with a French institution who are interested in pursuing a course of research at Stanford, and to Stanford graduate students interested in undertaking research or pursuing an internship at a French institution. For more information, please visit our website.

10 Awarded Visiting Student Researcher Fellowships

Applied Sciences • Engineering • Humanities & Arts • Medicine • Neurosciences • Physics • Mathematics • Computer Science

Cyril Markovitch, CentraleSupélec, Gif-sur-Yvette

Visiting Department: Department of Mechanical Engineering, Stanford University

Construction of an Optical Computer Using Plasma Metamaterial Devices

I have been working with Professor Mark Cappelli and his team in the Stanford Plasma Physics Laboratory. I had the opportunity to work on various subjects with various Ph.D. students and postdocs, before focusing on the study of surface waves propagating at the plasma/dielectric interface. It has a great interest in linear optical components for quantum computing, where the information can be controlled by magnetic fields and plasma dielectric constant. The goal was to observe and quantify experimentally how surface waves behave with a magnetic field and the plasma dielectric constant. Then we compared our experimental results with a basic model. I have faced many issues with the experimental part and it was really interesting to discuss and work with postdoc to find a solution.

“I have learned to be independent in my research and to be creative. It was really different from French research management. I tried many experiments with any good results at the end, which taught me to be patient. I took some astrophysics classes and it made me want to work on this in the future! Therefore, I advise visiting student researchers to take some classes in addition to their research work.” — Cyril Markovitch

“I have met friends from various nationalities and we organized many activities.” — Cyril Markovitch
Guillaume Zuffinetti, CentraleSupélec, Gif-sur-Yvette

**Visiting Department: Department of Civil and Environmental Engineering, Stanford University**

**Mapping the Potential of Photovoltaic Energy for Groundwater Pumping in Africa**

With Sustainable Development Goal 6, “Clean Water and Sanitation”, the United Nations aims for a universal access to safe and affordable drinking water. However, in 2017, 800 million people still lacked access to basic drinking water services, especially in rural areas. Photovoltaic water pumping systems (PVWPSs) are an interesting solution to improve water access, as they are economically competitive in isolated areas and have low maintenance requirements. We tried to evaluate the consequences of different policies regarding the large-scale deployment of solar water pumping systems in developing countries but more specifically in Southeast Asia.

“My work team was an international team with members from my native country and I would really like to continue to work with this team and on this subject on a Ph.D., but in my native country.”

— Guillaume Zuffinetti
Théo Saulus, CentraleSupélec, Gif-sur-Yvette

Visiting Department: Department of Medicine & Biomedical Data Science, Stanford University

Multi-Scale Machine Learning Approach for Alzheimer Disease Progress Profiling

I am particularly happy to have been able to conduct this fellowship, which has enabled me to learn both from a technical point of view, but also to get to know better the subjects I like, and in which environment I’d like to pursue my career. I have been able to take the time to delve into several subjects, in the framework of degenerative diseases. I began by working on Bayesian networks, and their application to learning causal interaction relationships between proteins. I then carried out a large number of analyses on single-cell RNA sequencing data, from data clustering to training the CIBERSORTx algorithm developed at Gentles Lab. This analysis enabled me to have a better overview of the project, given that the biological markers chosen to track proteins are directly linked to the clusters identified. Finally, I worked on using graph neural networks to identify significant patterns around degenerated regions, an idea to which I was able to contribute to through exchanges and meetings with Andrew and collaborators I met along the way.

“The France-Stanford fellowship was a crucial help in enabling me to come to California: the cost of living is very high, and I clearly wouldn’t have been able to live here without financial assistance. I am sincerely grateful for this help and for the trust placed in me. If you are reading this and wish to do research abroad in California, my greatest advice would be: apply!” — Théo Saulus

Julie Zhu, Department of Music, Stanford University

Visiting Institution: GMEM, Centre de la Création Musicale, Marseille

Sum and Difference

The musical project Sum and Difference combines acoustic research from the French national Institute for Research and Coordination in Acoustics/Music (IRCAM) for recording and understanding a synthetic physical model of the ancient Chinese instrument, the sheng, with Stanford research in audio spatialization and ethically composing for traditional instruments and electronics. The title is in reference to the psychoacoustic phenomena of sum and difference tones that are artificially perceived in addition to the two real tones that are sounded at the same time. The intent of the project is to make live and understandable these ghost tones as if the listener’s ears occupied the prime position of the sheng player herself through electronic synthesis. The project culminated in a presentation at GMEM - Centre National de Création Musicale (Groupe de Musique Expérimental de Marseille) and a Radio France - France Musique broadcast « Création Mondiale » by Anne Montaron.
Valentine Chirokoff, Ecole Pratique des Hautes Etudes, Paris

Visiting Department: Department of Psychiatry & Behavioral Sciences, Stanford University

Linking the Brain to Daily Life Symptoms of Addiction

I conducted my third thesis research with Adolf Pfefferbaum and Edith Sullivan at the psychiatry department of Stanford University. This research aimed at identifying the white matter fibers in which integrity could underlie crucial relapse factors in addiction. We preprocessed, analyzed and interpreted white matter fibers’ involvement in interaction with cognitive components and use. We demonstrated that the anatomical white fibers health was crucial in sustaining efficient inhibition functioning and resting state (functional) connectivity in patients with addiction. Impairments in frontal related white matter fibers were thus highlighted as a core component in addiction maintenance, in which impairments result in multi-level cerebral and behavioral deficits, leading to use.

“The grant gave me the amazing opportunity of getting to know, and to work with experts in my field who pushed my academic training and my career further. Working at Stanford University really motivated me in seeking such an inspiring and stimulating work environment for the rest of my career.”
— Valentine Chirokoff

Abdallah Lamane, CentraleSupélec, Gif-sur-Yvette

Visiting Organization: Department of Radiation Oncology, Stanford University

Developing a Real-Time Cancer Cell Tracking Algorithm for Cancer Patients

A major health challenge our societies are about to face in the long-term is cancer, as it is already the primary cause of death in France and the second one in the US. As a way to tackle it, one of the most used techniques nowadays is radiotherapy. It uses high-dose radiation to kill cancer cells detected with medical imaging. Despite scientific progress in imaging, today’s medical imaging techniques fail to give sufficient precision to reach that goal. A brand-new technique has been built to raise imaging precision, using a biological tracer in cancer patients to highlight individual cancer cells. Such precise information is key to send direct radiation, avoiding surrounding healthy cell damages, as well as raising dosage in radiation to reduce the number of needed shots. During my stay, I worked on image processing, more specifically on building an algorithm that will be able to restructure the cancer’s image in 3D from the scanner, to provide the right directional instruction to radiation. I worked on modeling the tumor response to an algae-based treatment and investigated its therapeutic benefit.

“My stay at Stanford definitely opened up my mind to research, which is not really highlighted in Centrale cursus (mostly heading to industry). I pursued another research internship afterwards, and I will apply for a Ph.D. later. That would have been unbelievable to me a year ago.”
— Abdallah Lamane
**FELLOWSHIPS & INTERNSHIPS**

**Adnan Mansour**, Department of Drama, Stanford University

*Visiting Organization: Ecole Polytechnique, Palaiseau*

**Towards Predictive Fluid Modeling of Plasma Processing Applications**

Low-temperature plasmas have multiple vital scientific and industrial applications, including plasma processing, electric propulsion, arc discharges, and many more. Plasmas exhibit complex phenomena in a wide range of both spatial and temporal scales, spanning frequencies from gigahertz to kilohertz and length scales from microns to meters. In this collaboration, we expanded the capabilities of fluid models by incorporating closure models and plasma chemistry modules by benchmarking the models developed both at PDML and LPP. The project developed advanced simulation setups, including multi-dimensional simulations, advanced plasma chemistry, and more sophisticated collision and source models for relevant plasma applications, such as Hall-effect thruster and industrial plasma simulations. The advancement of predictive plasma models is vital for the understanding of the underlying processes that govern plasma dynamics and reactions.

“I greatly improved my knowledge on closure models, which helped broaden my understanding of plasma modeling techniques. I really enjoyed working with my mentor, Alejandro, who is very personable. I will be presenting the work in the Gaseous Electronics Conference in Michigan next month. We are also planning on writing a journal paper.” — Adnan Mansour

**Maxime Popoff**, INSA, Lyon

*Visiting Department: Department of Music, CCRMA, Stanford University*

**Pushing the Limits of Audio Spatialization with Emerging Architectures**

Spatial audio refers to various systems and techniques used to diffuse sound sources or sound fields in space. While “surround sound” systems which are present in many homes typically involve 5 to 7 speakers, more advanced techniques such as Ambisonics and Wave Field Synthesis (WFS) imply the use of a much greater number of speakers. Those techniques are very efficient to recreate sound spatialization and are of high interest in fields like virtual and augmented reality, concert room acoustics, archaeoaoustics, etc. However, the number of involved speakers (limited by the computational power of the system) rarely exceeds 64, which is a critical factor for implementing more efficient spatial audio techniques limiting the quality of the simulation. The use of very powerful embedded platforms called Field Programmable Gate Arrays (FPGA) will allow us to target systems with hundreds of speakers, while providing better audio latency performances and synchronization. This work relied on platforms and technologies currently developed as part of my thesis at INSA-Lyon and Inria (France).
Louis Reboul, Ecole Polytechnique, Palaiseau

**Visiting Department: Department of Aeronautics and Astronautics, Stanford University**

**Accurate and Efficient New Numerical Methods for Fluid Models in Plasma Physics**

Electric propulsion for satellites is a technology that largely reduces the launch costs and provides reliable orbit control capabilities. Nevertheless, the design and development of plasmas thrusters is still semi-empirical and involves long and expensive life tests due to the complex, nonlinear physics of low-temperature plasmas, making its study an active field of research. In this project I collaborated with Prof. Ken Hara to develop innovative models and numerical methods to study the onset of plasma instabilities in magnetized configurations. Such instabilities induce plasma turbulence that reduces electron confinement in plasma thrusters, affecting their performances and making it difficult to predictively model the plasma dynamics. One of the challenges of simulating this type of plasmas is the wide disparity of time and spatial scales present in the problem. We aimed at developing the so-called asymptotic-preserving methods applied to fluid moment models to simulate these plasma discharges accurately and efficiently.

VISITING JUNIOR SCHOLAR FELLOWSHIP

The Visiting Junior Scholar Fellowship is available to junior scholars from Stanford and from France seeking a research visit either in a French Institution or at Stanford. For more information, please visit our website.

3 Awarded Visiting Junior Scholar Fellowships

Medicine • Social Sciences

Jean-Thomas Martelli, Centre de Sciences Humaines, New Delhi, India

**Visiting Institution: Department of Anthropology, Stanford University**

**The Languages of Democratic Decline in India**

This interdisciplinary project explores the effects of political language on democracy when it transitions to authoritarianism. Speeches by politicians, media houses and opinion-makers are often believed to be innocuous. Yet they shape citizens’ behaviors, manifest power relations and construct realities we live in. By using digital humanities and machine learning tools on a newly constituted archive of political speeches since the late 19th century, we examined how public discourses encode India’s gradual renunciation of its liberal democratic commitments to equal individual rights. We parallely explored speech-making ethnographically from the standpoint of political leaders and political advisory. We will examine how authoritarian and populist discourse helps construct a positive system of values around anti-democratic politics by investigating discursive themes of democratic decline. We will probe whether authoritarianism speaks the unlikely rhetoric of peace, populism of sainthood and Islamophobia of unity. We aim at showing that languages of leadership retain core components of populism and authoritarianism worldwide.

“While at Stanford, I had the opportunity to engage the scholarly community working on South Asian politics across three disciplines: Anthropology, Political Science and Sociology.” — Jean-Thomas Martelli
**Thomas Barba**, Hôpital Edouard Herriot, Lyon

*Visiting Institution: Stanford Center for Biomedical Informatics Research, Stanford University*

**META-LUNE: Meta-learning in The Management of Lupus Nephritis**

My work focused on developing deep learning algorithms that can help in the management of brain cancer (glioma). In short, I developed a pipeline capable of producing robust small-scale representations of the data contained in full 3D brain MRIs. Large datasets of morphologically normal and abnormal brain MRIs were used to develop the pipeline, which consists of a pre-processing step and a modeling step that produces the small-scale MR embedding. The model itself is an autoencoder based on the UNet architecture, which has been successfully used in previous studies to process medical images. The robustness of the generated embeddings was demonstrated by measuring how well they correlated with clinical parameters across multiple datasets. These low-dimensional representations can greatly facilitate the training of machine learning models that process brain MR images, which are notoriously difficult to work with. We intend to publish the results I obtained this year in a medical journal. The first draft of the manuscript was completed in August and is currently being reviewed by all the co-authors. We plan to propose it to the Nature Neuroscience medical journal. The results will also be presented at the NIBIB Workshop for Biomedical Imaging and Biomedical Approaches to Alzheimer’s Disease.

“This fellowship has definitely advanced my academic career by rounding out my skills in medical applications of machine learning and by forging links between the Stanford group and my home institution. It gave me the opportunity to apply for my new position as Assistant Professor of Internal Medicine at the University of Lyon, and will set the stage for future collaborative projects focused on biomedical applications of deep learning between Lyon and Stanford.” — Thomas Barba

---

**Cédric Rossi**, Université Dijon-Bourgogne, Dijon

*Visiting Institution: Cancer Institute, Stanford University*

**Circulating Genomic Determinants of Treatment Failure in Hodgkin-Lymphoma**

Hodgkin lymphoma (HL) is one of the most curable malignancies with the current treatments. However, in 2022 two major issues are still present: roughly 15%-20% of cases experience treatment failure and long-term toxicities of chemotherapy are frequent (namely fertility, cardiac and respiratory disorders). As the prediction of these failures and these toxicities remain strongly elusive, we therefore need to develop innovative strategies to personalize HL therapies in order to predict treatment failure and to minimize long-term toxicities of chemotherapy. Our aim is to figure out a noninvasive plasma genotyping of HL using ultrasensitive assays developed by Professor Alizadeh’s lab at the University of Stanford and to refine outcome prediction of HL which could ultimately help guide therapy. This project established a solid collaboration between the Cancer Institute at the Stanford university and the University of Dijon-Bourgogne in France.

“During this grant, I generated and analyzed a lot of data (over 1, 500 samples analyzed), allowing me and my lab to propose new insights to use ctDNA in the personalized approach for Hodgkin lymphoma.” — Cédric Rossi
**VISITING FELLOWSHIP IN THE HUMANITIES/SOCIAL SCIENCES**

The Visiting Fellowship in the Humanities and/or Social Sciences is open to scholars from Stanford and from France who have completed a Ph.D. no more than three years from the date of applying for the fellowship and who hold a tenure-track/permanent position, postdoctoral scholars and lecturers. For more information, please visit our [website](#).

1 Awarded Visiting Fellowship in the Humanities and/or Social Sciences

**Nathanaëlle Soler**, Ecole des Hautes Etudes en Sciences Sociales, Paris

*Visiting Department: Department of Anthropology, Stanford University*

**The Subjective Experience of Psychosis in New Caledonia**

My time at the Department of Anthropology has been key in achieving my postdoctoral research objectives. Firstly, it allowed me to thoroughly analyze my ethnographic materials related to psychotic disorders in New Caledonia. I had valuable discussions with my advisor, Professor Tanya Luhrmann, a leading global expert in the anthropology of psychotic disorders. These conversations significantly shaped my analysis, particularly in understanding which aspects of the colonial context can negatively impact Kanak youth in New Caledonia. I also had the opportunity to advance my new research, which examines the impact of climate change on mental health and well-being. The stimulating and inspiring research environment at the Stanford Doerr School of Sustainability greatly contributed to my deeper understanding of the challenges posed by climate change on health.

“This has been really helpful in improving my methodological skills both in terms of writing articles and in terms of the tools and methodologies that can be used in mental health research. It also helped to clarify the research project I will propose when applying for a tenured-track research position. I will soon submit an article based on the research I conducted during my stay at Stanford to the international journal *Culture, Medicine and Psychiatry.*” — Nathanaëlle Soler
ROXANE DEBUISSON COLLECTION FELLOWSHIP

The France-Stanford Center for Interdisciplinary Studies and the Stanford Libraries are pleased to announce the new joint Roxane Debuission Collection Fellowship. The annual fellowship to be held during academic year will provide funding to a Stanford graduate student to improve access and knowledge about the Roxane Debuission Collection on Paris History. For more information, please visit our website.

Amanda Zhang, Department of History, Stanford University

Visiting Institution: Stanford Libraries, Stanford University

Roxane Debuission Collection Fellowship

The Debuission Collection has brought me closer to the history of Paris than I have ever been. Over the past quarter I have cataloged the stereoviews, chromolithographs, as well as a section of Roland Liot’s photographs. Each category has given me distinct impressions of Paris. The stereoviews, organized by the landmarks of Paris, have better acquainted me to the various architectural styles and also brought the scenes of Parisian streets and parks to life. What amazed me the most was the collection of chromolithographs. Though capturing Parisian life from different perspectives, both materials have allowed me to reconstruct visually the everyday life of people. They have also inspired me to reflect on how interconnected history and material culture could be. As I started to work with Roland Liot’s photographs, I am faced with the more difficult task of identifying specific structures, but it is also through doing research that I learned much more about the architectural styles, both modern and archaic, found in different areas in Paris. Moreover, it is an invaluable opportunity to see the old buildings of Paris captured in the photographs prior to their demolition. I have also thoroughly enjoyed the archival aspect of the work in the special collections, which allowed me to see how an archive is constructed and organized at first hand.

Roxane Debuission. Photo Credit Gazette Drouot
GUSTAVE GIMON FELLOWSHIP

The Gustave Gimon Fellowship is offered by the Stanford Libraries and co-sponsored by the France-Stanford Center. The Gimon Collection contains approximately 1000 titles that concentrate broadly on the evolution of French economics and politics from the late sixteenth to the mid nineteenth century. For more information, please visit our website.

Nicole Bauer, University of Tulsa, Tulsa

Visiting Institution: Stanford Libraries, Stanford University

Gustave Gimon Fellowship

By the French Revolution, the drive for transparency was a defining feature of the political culture. Conspiracies and the fear of conspiracies were common and widespread during and after the Revolution. This project examines one such conspiracy in the later years of the French Revolution and explores the political thought of its would-be conspirators. I focus on the writings of French revolutionaries Babeuf, Buonarroti, and those of their circle during and after what is known as the Babeuf Conspiracy, or the Conspiracy of the Equals in 1797. Though they had resorted to conspiracy to overthrow the government of the Directory, they nevertheless articulated an ideology that saw transparency and equality as the end goals. In my research thus far, I have found strong ties between the writings of the Babeuvistes and those of nineteenth-century utopian socialists. The Gustave Gimon Collection has a substantial number of sources by Blanqui and Proudhon, both of whom are intellectual descendants of those Jacobin conspirators. It is essential for my project to look deeper into their writings to better understand how they may have connected ideas about property with the new attitudes towards government transparency after the French Revolution, given the legacy of thinkers like Buonarroti.

“I had a wonderful time during my fellowship, and the Gimon collection was even richer than I expected. I was especially excited to be able to spend my days in the library and then to be able to attend a colloquium on the long eighteenth century. I also very much enjoyed getting to know and share notes with other fellows and scholars while I was there. That experience was invaluable. It has deepened my interest in the intellectual ties between the eighteenth and nineteenth centuries in France as well as helped me build beautiful friendships and connections with like-minded scholars. I plan to publish my research as an article on the ideas of secrecy and transparency among French radicals in the 1790s.” — Nicole Bauer
The student prizes are named for three people whose lives and careers spanned France and the United States, bringing French and American culture and society into dynamic conversation with one another: the Josephine Baker Honors Thesis Prize, the Louise Bourgeois Essay Prize, and the James Baldwin Essay Prize. For more information, please visit our website.

**Josephine Baker Honors Thesis Prize**

**Jessica Femenias**
Department of History/Department of Philosophy, Stanford University (2023)


**Louise Bourgeois Essay Prize**

**Míša Stekl**
Department of Modern Thought and Literature, Stanford University


**James Baldwin Essay Prize**

**Chloé Brault**
Department of Comparative Literature, Stanford University

“How to Make Love When Anti-Black.”

**EXECUTIVE COMMITTEE**

**Executive Committee Membership**

**Stanford Members**

**Arto Anttila**, Associate Professor of Linguistics, Department of Linguistics, Stanford University

**Mark Cappelli**, Professor of Mechanical Engineering, Department of Mechanical Engineering, Stanford University

**Richard Thompson Ford**, George E. Osborne Professor of Law, Stanford Law School, Stanford University

**Marisa Galvez**, Associate Professor of French, Department of French and Italian, Stanford University

**Julien Sage**, Elaine and John Chambers Professor of Pediatric Cancer and Professor of Genetics, Stanford University

**French Members**

**Gaëtan Bruel**, Cultural Counselor of the French Embassy in the United States, New York

**Mireille Guyader**, Counselor for Science and Technology, Office for Science and Technology at the Embassy of France in the United States, Washington, DC

**Christophe Laux**, Professor, CentraleSupélec, Gif-sur-Yvette

**Reynald Pain**, Director, Institut National de Physique Nucléaire et de Physique des Particules

**Stéphane Tirard**, Professor, History of Science, University of Nantes, Nantes

**Leadership**

**Jessica Riskin**, Jean-Paul Gimon Director of the France-Stanford Center for Interdisciplinary Studies, Professor of History

**Christophe Laux**, Associate Director

**Isabelle Collignon**, Program Manager