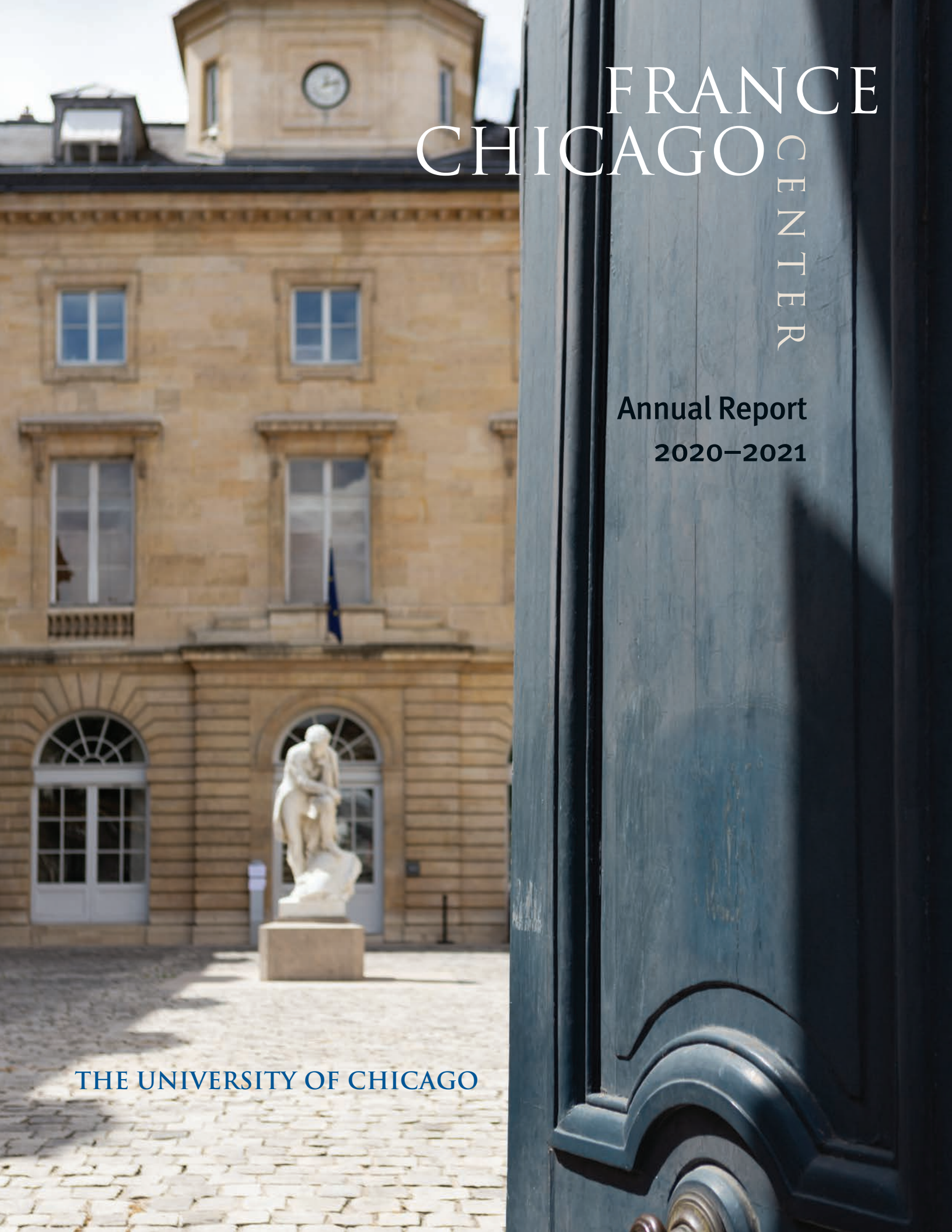


FRANCE CHICAGO CENTER

Annual Report 2020–2021

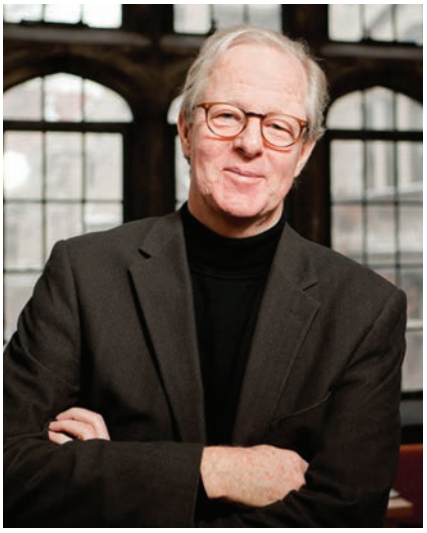
THE UNIVERSITY OF CHICAGO

The France Chicago Center is devoted to fostering, promoting, and increasing fruitful intellectual exchange between the University of Chicago and France, and to raising awareness and appreciation of French culture, art, and thought within the University community and beyond. It pursues these goals through structured initiatives—graduate workshops, fellowship and travel grant competitions, public lectures, visiting scholars, and a collaborative research seed-funding program in the sciences—and by working closely with students, faculty, and University-based partners to develop and support France-related grassroots initiatives.

HIGHLIGHTS

REPORT

Cover: A courtyard at the Collège de France in Paris, a partner institution (since 2008) with whom the University of Chicago recently signed a new 5-year agreement covering faculty exchange and student mobility. Photo by Patrick Imbert, Collège de France, 2021.



FROM THE EXECUTIVE DIRECTOR

The France Chicago Center has had—like all of us, alas—a year like no other in its existence… and yet I am happy to say that it has survived and even thrived. As did almost all of the University, we moved from three-dimensional, in-person activities to two-dimensional interactions. Virtual gatherings became the norm. But if there is an up-side to the pandemic upheaval, it is that all of this two-dimensional activity allowed us to appreciate the importance and richness of face-to-face real-time interactions "*en présentiel*." That said, I would like to salute our graduate students for their creativity and perseverance in making the virtual workshop *Interdisciplinary Approaches to Modern France and the Francophone World* a virtual meaningful gathering point for all who participated on a regular basis over the course of this last year. I would also like to salute the small, but growing number of graduate students in both humanistic and scientific disciplines pursuing a dual Ph.D. degree with French institutions.

There are two initiatives that I would like to mention as especially important. Our rich interaction in supporting translations from French to English by the University of Chicago Press led to the creation of the "France Chicago Collection." This new collection—which is the fruit of a previous collaboration between FCC and the Press—was inaugurated in April 2021 with Derrida's *Thinking out of Sight: Writings on the Arts of the Visible*. In the coming years, it will grow to include seminal classic works by authors such as Camus (*American Journals*) and Foucault (*Folie, langage, littérature*) as well as books by living authors like sociologist Antonio Casilli, whose recent volume, *En attendant les robots. Enquête sur le travail du clic*, explores the harsh reality of "digital labor." You can read more about this partnership on page 10 of this report.

The second initiative to be celebrated is the signature agreement with the *Institut des Amériques*, a broad, interdisciplinary network of institutions of research and higher education in France. This exchange, put in place with the help of the Karla Scherer Center for the Study of American Culture, will bring doctoral students researching almost any aspect of the Americas to the University of Chicago to work with our faculty over a period of two years. The goal will, of course, be for the laureates to advance toward completion of their doctoral research, but there will be a second, more experimental aspect. Doctoral students will collaborate with UChicago faculty in planning a program of research activities—seminars, round-tables, conferences—to take place in the new University of Chicago Research Institute in Paris (UC-RIP), which will be housed in the highly anticipated Paris Center building designed by Chicago architect Jeanne Gang. These activities will benefit from the broad reach of *IdA*'s networks in France as well as its many European institutional partners.

I close this letter on a more bittersweet note, a farewell to our director Arnold Davidson and celebration of all that he brought to FCC over the last 25 years. Arnold is retiring from the University after a long and rich career. I still remember a day in the late 1990's when Arnold walked into my office and engaged me in conversation about both the rich possibilities of collaborations with French researchers and about French culture broadly writ. One thing led to another, and in 1998 Arnold joined FCC as one of our faculty directors. Over his long tenure, Arnold has been a pillar of FCC. He has an encyclopedic knowledge of French culture, of all kinds of institutions from the *Collège de France* to the *Opéra de Paris*. He has brought his keen and generous judgement to bear on every proposal submitted to FCC almost from its inception. His winks of the eye and laughter made our meetings moments to be treasured. All my fellow directors join me in wishing him the best in the next chapter of his life. Thank you very much, old friend, for all you have contributed to make FCC a success.

Robert Morrissey
Executive Director, France Chicago Center
Benjamin Franklin Professor of French Literature

NEW PARTNERSHIP WITH INSTITUT DES AMERIQUES

In February of 2021, the University of Chicago signed an agreement with the *Institut des Amériques* (IdA), a research consortium that brings together over one thousand faculty and researchers at 50 institutions in France who study the Americas through a transnational and transdisciplinary lens. The agreement establishes the framework for a series of robust exchanges at the graduate student and faculty research levels and creates a new International Hub (pôle international), based at the University of Chicago, one of only four based in the United States and one of only 14 in the western hemisphere.

Unlike other international hubs, where visiting graduate student coordinators are hosted abroad for the entirety of their three-year Ph.D. fellowship, UChicago hub coordinators will be based on the Chicago campus during first two years on their fellowship tenure. During this time, they will conduct Ph.D. research, participate in workshops, organize a set of intellectual activities, and foster a set of networks they can call upon during the third year, when they will be based in the Research Institute at the new Center in Paris. During this final year in Paris, they will organize a major international colloquium

Paul-Henri Giraud

New research library on the Condorcet campus where IdA's various archival resources will be housed

on a topic related to their dissertation research, while finishing up their own dissertation research.

The primary goals of this initiative are to foster closer ties with universities in the western hemisphere, promote premier research opportunities for graduate students in France, and bolster collaboration between the visiting French graduate students, universities in France, and institutions in the Americas. Prof. Paul-Henri Giraud (University of Lille and Secretary General of the IdA) notes that "2021 will mark the beginning of a promising relationship between the Institute of the Americas and the University of Chicago—with Prof. Mauricio Tenorio (UChicago, History & RLL) joining IdA's Scientific Council, faculty from both institutions launching an informal research collaboration, and a talented, motivated Ph.D. student from France coming to Chicago this fall to study and to coordinate the new 'Chicago Hub.' These are the first steps of what we hope will become a fruitful and lasting partnership."

Tenorio underscores the exciting opportunities this new research community affords: "This new relationship with the *Institut* will afford UChicago students and faculty opportunities to interact with French specialists who study the social, political, economic, historical, cultural, and literary aspects of Latin America, the Caribbean, the U.S., and Canada. Few U.S.-based research groups have networks as extensive as IdA's, and few are as well organized and interconnected."

The University of Chicago hub will connect students and faculty at the IdA with various UChicago departments and centers such as the Center for Latin American Studies, the Karla Scherer Center for the Study of American Culture, and the University of Chicago Research Institute in Paris. Speaking to the research benefits of this collaboration, Tenorio further notes that "…this relationship will be an outstanding resource for UChicago faculty members who are interested in internationalizing U.S. history and highlighting its global connections and interactions with Europe and the rest the Americas."

Mauricio Tenorio

Finally, it is worth noting that this new relationship presents the opportunity to build on the strong links already established between the University of Chicago and two major institutions in France: the *Centre national de la recherche scientifique* (CNRS), which provides seed funding for the international hub; and the French Ministry of Higher Education Research and Innovation, which provides funding for the graduate students hosted by the University of Chicago.

The inaugural selection for the coordinator of the UChicago Hub will be Adam Bigache (Aix Marseille University), whose dissertation will focus on the Harlem Renaissance, and will examine various aspects of Jessie Fauset's role as literary editor of *The Crisis* magazine as well as her influence in promoting crucial and seminal pieces of the literary and cultural canon. Beginning in the fall of 2021, Bigache will be enrolled as a non-degree visiting student in the Department of English, with Prof. Kenneth Warren as his faculty mentor. He will work closely with the Karla Scherer Center for American Studies and the France Chicago Center during his first two years, and with Robert Morrissey and others at the University of Chicago Research Institute in Paris during the 2023–24 academic year. The France Chicago Center looks forward to welcoming Mr. Bigache to the University of Chicago community this fall.

Adam Bigache

FOCUS ON INTERNATIONAL INTERNSHIPS

As recently as eight years ago, nearly all FCC travel grants were offered to students conducting research and intensive language study in France. Things started evolving in 2014, when FCC joined forces with the Harris School to ensure that public policy students seeking internships in France—most of them at the *Organisation de coopération et de développement économiques* (OCDE) in Paris—were in a financial position to take advantage of these opportunities. This initiative and others like it involving the School of Social Service Administration (now the "Crown Family School of Social Work, Policy, and Practice"), the Humanities Division, and the College developed to the point where—in the summer of 2019—more than a third of FCC's student travel awards (9 of 26) supported students conducting internships in France.

Of course, travel restrictions put into place as a result of the pandemic brought most of this forward momentum to a virtual halt. Yet, as remote learning quickly took the place of classroom instruction, the France Chicago Center embraced remote internships as an increasingly viable alternative to the more traditional in-person format. During the summer of 2020, Jennica Betsch, a student in the Harris School, benefitted from an FCC grant in support of her virtual internship with Innovations for Poverty Action based in Burkino Faso. Published on the opposite page is an interview with Ms. Betsch that originally appeared on the Harris School web site in September of 2020, shortly after she completed her assignment with IPA.

Ms. Betsch graduated from the Harris School in the winter of 2020 and is now working for the Wildlife Conservation Society as the Program Manager for their Sudano-Sahel region, which includes 3 francophone countries: Cameroon, Chad, and CAR, as well as South Sudan, Ethiopia, and Nigeria. The work she and her colleagues are doing helps protect wildlife and wild places by managing protected areas and implementing evidence-based conservation policy that encourages local centers of peace and security. She supports country programs in developing conservation strategy that safeguards local communities, mitigates and stabilizes conflict and climate change, and enhances human-wildlife-livestock health programs to prevent future outbreaks. She notes that the work she is doing now is similar to the work she was doing last summer—but on a different scale. She also notes that experience gained during her internship at IPA, especially applying research and data analysis to program development, is proving invaluable in her current position.

Chateau de la Muette in Paris, a facility used by the Organization for Economic Cooperation and Development (OECD), where 9 Harris School students have conducted summer internships with financial support from FCC

Tell us about the position and what you did.

"I worked on the Francophone West Africa team to support the dissemination of COVID-19 related research and prepare proposals and work plans for upcoming projects for Burkina Faso, a small Francophone country, where I would have been based this summer if not for COVID-19."

How did your time at Harris guide you to this opportunity?

My advisor suggested I get more involved in my interests outside of classes, to build a stronger portfolio. Since I had served in the Peace Corps in Burkina Faso years ago and had always wanted to stay connected, I became a board member of a small nonprofit, Friends of Burkina Faso (FBF). With FBF, I support fundraising initiatives for community-driven development work. We're currently partnering with a local professor and soil expert for an agricultural project, and I hope to use the data analysis and grant-writing skills I gained at Harris to help scale the project.

Harris also spurred my interest in Innovations for Poverty Action: I studied the work of multiple professors who have conducted research through IPA. In November, Abhijit Banerjee came to speak at UChicago with Dean Katherine Baicker. Banerjee is a recent Nobel Prize winner for economics and founded J-PAL, a complementary organization to IPA. Hearing him speak about the social impact of research solidified my interest in the two organizations."

What Career Development resources did you utilize in your job search?

I was a frequent visitor to the Career Development Office (CDO) last year. The interview for this internship was my first ever in French. I was very nervous, so I had multiple practice interviews with CDO. I also met with Rich Delewsky and he advised me to research certain vocab words I might need—and even practiced French with me! I also spoke with my advisor and had my resume and cover letter reviewed.

How did you find funding for this internship?

I found out about the France Chicago Center Internship Scholarship through CDO. I›ve always been a Francophile, so the center really interested me. They typically fund internships in France, but they were willing to fund my internship in Burkina Faso after learning how closely it aligned with my career goals and interests. The France Chicago Center has been very supportive and they were just as excited as I was to get down to work.

Jennica Betsch

What skills and experiences from your degree are you bringing to the position?

My Economic Development and Conflict: Root Causes, Consequences, and Solutionse courses have been the most useful so far. In Economic Development, we practiced finding and completing a grant proposal for a research project which was a great stepping stone to what I›m doing now. The Conflict course taught me how to consume research critically and to conduct lit reviews to verify claims with multiple sources. I also worked on some basic data visualizations which I could not have done before taking Data Analytics!

What tips do you have for incoming students thinking about internships?

Internships are the perfect opportunity to build your resume and set it in the direction you want it to go. And start your internship research early to explore your options!

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FACCTS IN THE AGE OF PANDEMIC

The pandemic disrupted all aspects of university life, but perhaps none more so than international, in-person collaboration—a central feature of FCC's initiative, France and Chicago Collaborating in the Sciences (FACCTS). While domestically, many labs were able to continue research, these transatlantic partnerships suffered amid travel restrictions, forcing most FACCTS grant recipients to put their lab work on hold for the year. And yet, many of these awardees found ways to pivot to this virtual world, allowing a space for international scientific collaboration during the pandemic.

The teams had to figure out how to adapt scientific research to the screen, a learning curve to which we all had to adjust. According to David Miller of the University of Chicago Physical Sciences Division, this acclimatization helped refocus his lab's ends: "Beyond the technical aspects of remote working (for which I believe particle physicists had a head start, as we are used to work in big international collaborations) and the scientific aspects, there has been a necessary shift in the way we supervise towards wellness and mental health. Helping our students and postdocs navigate the uncertainties associated with the global health crises, staying connected, and being flexible have been important to all of us." In addition to these more holistic developments, the Miller lab continued their research on Lund jet planes at the Large Hadron Collider, taking steps during lock-down in their novel Lund Plane deconstruction analysis.

Similarly, Tom Crawford and Silvia Galli's lab found that they were still able to continue their research on Cosmic Microwave Background Science this past year. They explain, "In some ways, we were quite lucky with the timing of the pandemic. The first milestone event in the collaboration between the Chicago South Pole Telescope group and the researchers at Institut d'Astrophysique de Paris—a week-long FACCTS-funded visit to Paris for four Chicago researchers—occurred in September, 2019." With the successful research trip completed before the outset of lockdown, they were able to continue to strengthen their ties between the French and Chicago research teams remotely.

For some labs, the pandemic's pause on new research had some unintended advantages. For example, William Irvine and Denis Bartolo decided to revisit the data they collected over the year from their study on matter and equilibrium and with fresh eyes, they made an unexpected discovery. Among videos of microscopic particles whirling in a magnetic field, they observed matter aligning itself into crystalline arrangements. Irvine and Bartolo explained, "Normally defects in the arrangement are stationary and make the crystal more rigid. In our system, the defects move around spontaneously and give rise to a new phase of matter: a 'crystal whorl' state, somewhere between a crystal and a turbulent flow. We have interpreted our results theoretically and are preparing our response to referees at Nature Physics."

Jean Greenberg's lab was also able to continue their research on plant defenses promoted by bioactive metabolites. Along with researchers at University

David Miller

Tom Crawford

Jean Greenberg

of Franche-Comté, the lab group generated a group of gene-edited plants, which is "providing essential materials to characterize plant immunity." They also produced a reference library of plant metabolites to use in characterizing their new materials.

Even labs that depend on in-person field work were able to develop their findings for upcoming publication, such as Mark Westneat and Chloe Nash's collaboration with Serge Planes (University of Perpignan and CRIOBE lab, Moorea). The team's primary aims for the funding received are to develop research expeditions to Moorea, French Polynesia to perform studies of fish distribution, behavior, evolution, and response to environmental factors, including coral bleaching, with particular interested in local distributions of goatfishes, triggerfishes, and butterflyfishes.

The team continued to make great strides in their work despite delays and lockdowns. Graduate student Andrew George developed data on triggerfish anatomy and ecology that he collected last year in Moorea to both get his Ph.D. and write a collaborative paper ready to submit for publication (triggerfish pictured). Ph.D. student Chloe Nash recorded a high high-speed video of goatfish feeding behavior on the reef and in the laboratory, progressing her work on the species and completing an evolutionary framework. The lab has great ambitions for the reopening of lab activity, as they plan to return to Moorea in August 2021 to resume fieldwork. For this next phase in their research, the Westneat, Nash, and Planes lab states: "We are looking forward to recording more data on fish behavior in response to the coral reef bleaching event that happened just before and during our visit two years ago, and if the fish distributions have been impacted."

These talented researchers confronted the pandemic with ingenuity and zeal, but each lab group is eager to resume the transatlantic, direct, and in-person scientific collaboration that FACCTS strives to promote.

William Irvine

Mark Westneat

PROUST CONFERENCE

On May 14th 2021, literary scholars across the world came together to discuss the work of Marcel Proust. The France Chicago Center, along with the University of Chicago Romance Languages and Literatures Department and the Franke Institute for the Humanities, was pleased to sponsor and help support the day-long online conference entitled *Marcel Proust: Contested Legacies*. Chiara Nifosi (Teaching Fellow in the Humanities) and Prof. Alison James (Romance Languages & Literatures) organized the seven-hour event that reached 60 participants, featuring four panels and two keynote addresses among over 15 Proust scholars.

The great number of participants exhibited the very core of Nifosi and James's intention for the event, as they strived to represent as many perspectives as possible—"[Proust's] work, which is generally considered as the monument of style, lends itself naturally to a multiplicity of interpretations in several fields of knowledge, allowing for its actualization in our present world." This diversity manifested in discussions ranging from Proust's legacies found in economics to the digital humanities, creating a platform for both established scholars and doctoral researchers. As a result, bourgeoning students had the rare opportunity to introduce their work and simultaneously interact with the intellectuals who currently define Proustian studies.

More specifically, Isabelle Serça's keynote speech touched on Proust's legacies from a neuroscience perspective, fostering a productive dialogue between *À la recherche du temps perdu* and scientists. Through her academic research as well as her *ProusTime* project, Serça's goal is not to use neuroscience to verify Proust's claims about the workings of memory, but rather to develop a "polyphonic model of time" in which literature has a key place, and a claim to knowledge—among other discourses.

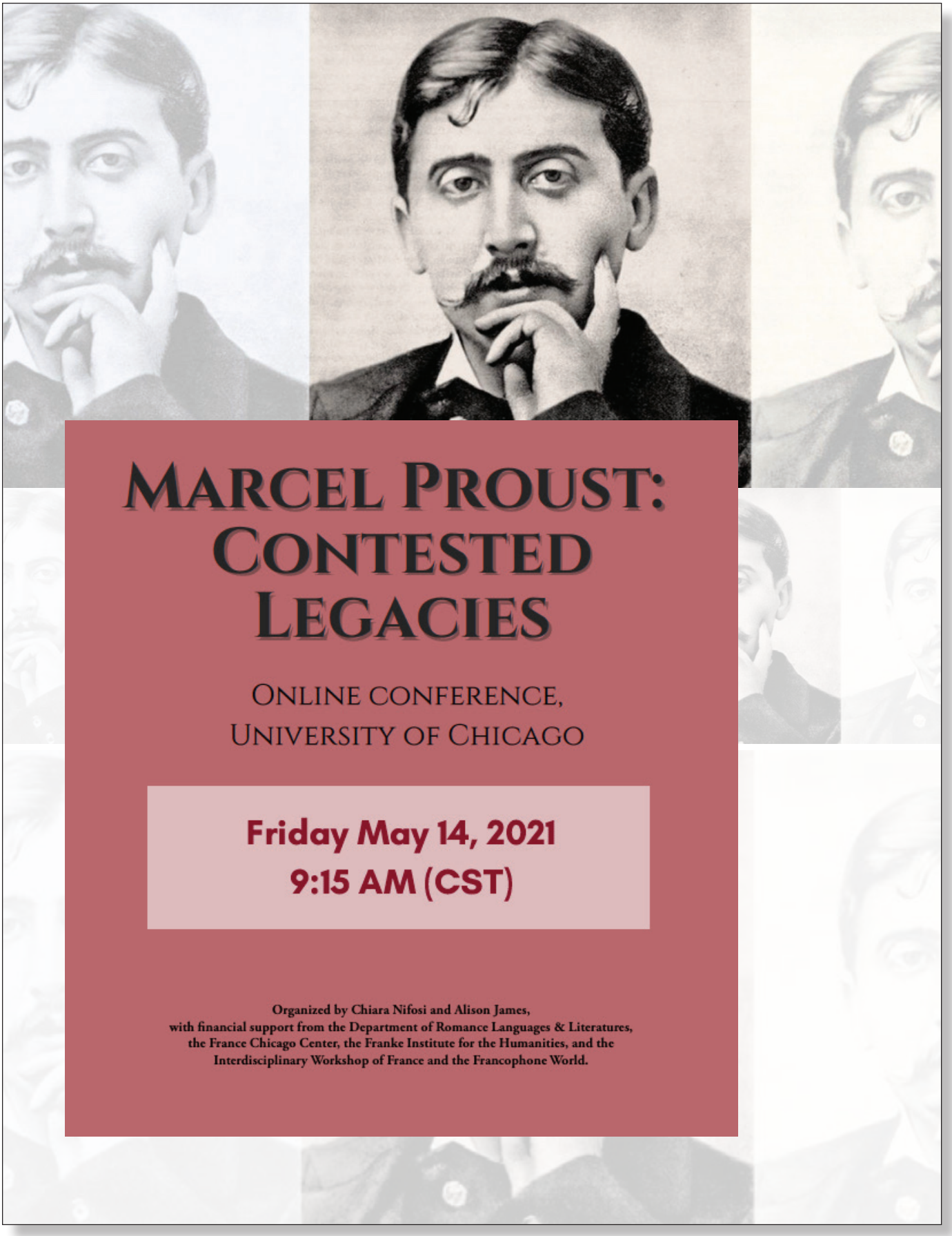
Other approaches included University of Chicago doctoral student Emma Lunbeck's brilliant analysis of figures of resemblance in a specific passage of *Sodome et Gomorrhe*, Northwestern doctoral student Xinyi Wei's captivating art history perspective in her paper on *Japonisme* in Proust, and Professor Clément Paradis' thought-provoking talk on Proust's economic "liberalism."

The Proust conference, as most other academic events this year, had to be coordinated to suit the virtual format. However, this shift allowed for Proustian scholars' work in the digital humanities to be fully realized. Nifosi and James explain: "One of the most significant aspects of Proustian studies during the pandemic has been a renewed concern with the accessibility of resources available to scholars."

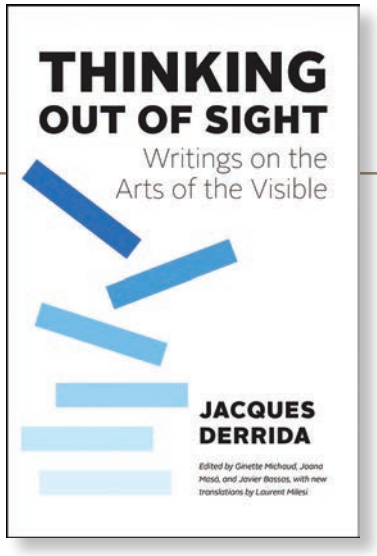
In this respect, the presentation of University of Illinois at Urbana-Champaign's professors François Proulx, Caroline Szylowicz and Claire Baytas, on their Kolb-Proust digital archive and related *CorrProust* project, an open-access tool that offers the opportunity to consult Proust's correspondence online, was particularly germane to this year. Zoom's in-meeting chat feature became a vital tool in disseminating these digital platforms during the event, allowing Proust's letters and his translations to be immediately accessible to participants all over the world—a convenience only accommodated by the conference's online format.

The conference was an overwhelming success, demonstrating the enduring reach of Proustian studies. Nifosi and James recall Prof. Hannah Freed-Thall's (NYU) keynote speech, "Proust on the beach" as an apt example of "the relevance of Proust's novel for our contemporary reflection on space and the natural environment." Accordingly, Proust's legacy of reflecting the spatial and ecological experience through literature is an invaluable tool, offering "endless resources both to renew literary studies and to retheorize the spaces we inhabit."

The *Contested Legacies* conference demonstrated this boundless potential of Proust studies in reaching interdisciplinary fields over a timeless range of experiences while also allowing for these diverse ideas and scholars to come together in honor of one of the founders of modern literature on a single screen.


MARCEL PROUST:
CONTESTED
LEGACIES
ONLINE CONFERENCE,
UNIVERSITY OF CHICAGO
Friday May 14, 2021
9:15 AM (CST)
Organized by Chiara Nifosi and Alison James,
with financial support from the Department of Romance Languages & Literatures,
the France Chicago Center, the Franke Institute for the Humanities, and the
Interdisciplinary Workshop of France and the Francophone World.

FRANCE CHICAGO COLLECTION



A partnership between the France Chicago Center and the University of Chicago Press

This year, the France Chicago Center and University of Chicago Press announced a five-year partnership that will result in the publication of five seminal French works aimed for an anglophone audience in a series called the "France Chicago Collection." While this collection is new, the Press's commitment to French scholarship—as well as their support of University of Chicago faculty toward this endeavor—dates back to the 1970s.

This history, beginning with translations of Jacques Derrida and works from the *Annales* historians, is continued through work done by current University of Chicago faculty. With the scholarship of Françoise Meltzer, who championed the work of Jean Starobinski, Nicholas Abraham, Maria Torok, and others, and Arnold Davidson's more recent establishment of a series of Michel Foucault translations, the Press has become a hub for French primary source translations. In addition, works by Jean-Luc Marion and the late Paul Ricoeur published by the University of Chicago Press have become internationally acclaimed texts in themselves.

Reflecting on this rich tradition of French thought, the Press Editorial Director Alan G. Thomas explains the impetus behind the new collection: "It was quite natural for us to turn to the France Chicago Center as a collaborator, and we have been delighted to have its support in extending this tradition of publishing. The Center shares our interest in making both historically important French works available in English, as well as examples of contemporary French scholarship that fit the Press's areas of focus."

The collaborative efforts between the France Chicago Center and University of Chicago Press began on a smaller scale in 2015, with publications by Michel de Certeau (*The Mystic Fable Vol. 2*, 2015), Henry Rousso (*The Latest Catastrophe*, 2016), Christophe Boltanski (*The Safe House*, 2017), Michel Foucault (*Discourse & Truth*, 2019), Claude Levi-Strauss (*Savage Thought*, 2020), and Jacques Derrida (*Life Death*, 2020). For the inaugural selection of the new France Chicago Collection, the editorial board selected Jacques Derrida's *Thinking Out of Sight: Writings on the Arts of the Visible,* edited by Ginette Michaud, Joana Masó, and Javier Bassas, with new translations by Laurent Milesi (2021). These works are carefully selected by the Press's acquisitions editors, under the advisory of faculty directors of the France Chicago Center. The Press also works closely with key French publishers such as *Gallimard*, *Éditions du Seuil*, and *Flammarion*, with whom the Press has cultivated decades-long relationships, fostering a mutual understanding of and appreciation for UChicago's editorial program. New additions to the France Chicago Collection include *American Journals*, by Albert Camus, and *N'oublie pas de vivre*, by Pierre Hadot—both anticipated in Fall 2021.

Alan G. Thomas comments on the overarching themes of these choices, remarking: "Our strengths continue to be French philosophy and literature, and we tend to publish works that will be read as primary sources in English. So far, our collaboration with the Center has supported works by now-canonical twentieth-century French authors. But the Collection is young, and we look forward to the possibility of publishing a broader range of work, including the sciences and social sciences."

FCC's financial support is crucial in realizing these intellectual ambitions, as the cost of translation cannot reliably depend on assistance from the French Ministry of Culture. This agreement not only guarantees the continuation of the University of Chicago Press's commitment to the proliferation of past French scholarship but allows for the potential to support new Francophone literary thought, vital to our current era.

Thomas describes this current shift: "We are looking now for books that offer fresh contributions to the disciplines we emphasize, but also distinctly French perspectives on questions of urgent contemporary concern, such as the future of democracy, the authority of science, and the implications of the Anthropocene. Those books that most resonate with the character of inquiry at the University of Chicago and the intellectual interests of FCC will find a grateful place in the France Chicago Collection."

PROGRAMS AND ACTIVITIES

Student Mobility

Filippo Petricca, Ph.D. candidate in Romance Languages & Literatures, received a Collège de France Research Fellowship ($29,000) to conduct dissertation research, with guidance from Patrick Boucheron, on how literature impacted and was impacted by the monetization of the marketplace during the Middle Ages.

Luke Foster, Ph.D. candidate in Social Thought received a Sciences Po Exchange Fellowship ($14,000) to conduct research exploring various themes of the education of the democratic soul in Plato and Alexis de Toqueville.

Maximilien Novak, Ph.D. candidate in History, received an EHESS Exchange Fellowship ($13,500) to conduct Ph.D. research, with guidance form Antoine Lilti, on the interactions between literature and history in the Napoleonic administration.

Jennica Betsch, a M.A. student at the Harris School of Public Policy, received a Summer Internship Travel Grant ($4,000) to defray expenses associated with conducting an internship at the Organization for Economic and Cooperative Development (OECD) in Paris.

Jaya Sahili, a Masters student at the Crown Family School, received a Summer Internship Travel Grant ($4,000) to defray expenses associated with conducting an internship at the Organization for Economic and Cooperative Development (OECD) in Paris.

Veronica Karlin, a rising fourth-year student in the College received support from the Metcalf Internship Program and the France Chicago Center ($4,000) to support her summer internship at the France Chicago Center. In the fall of 2020, she transitioned into the role of part-time Office Assistant at the France Chicago Center for the entire academic year.

Events

Linsey Sainte-Claire, Assistant Professor of French and Francophone Studies, Middlebury College, "Redefining the Boundaries of Writer's Voices in the Twentieth Century: Haitian Periodicals as a Site of Socio-Cultural and Political Engagement," October 23, 2020.

Poster for Océan, a feature-length film screened during the FCC-sponsored UChicago Champs-Elysées Film Festival. The screening was followed by a public Zoom discussion with the director, Océan Michel, moderated by Jennifer Wild

UChicago Champs-Elysées Film Festival. Festivities included a Masterclass led by Justine Lévêque, screenings of new short and feature-length films, discussions with directors, and a UChicago prize for best film conferred to Adrien Mérigeau for *Genius Loci*. October 20–26, 2020.

Natalie Smith, Ph.D. Candidate in History, The University of Chicago, "'A State of Permanent Combustion': Coastal Soap Pollution in Marseille, 1820s–1840s." November 6, 2020.

Maximilien Novak, Ph.D. Candidate in Romance Languages and Literatures, The University of Chicago / Ph.D. candidate in History, EHESS, "L'écriture de l'histoire sous le Premier Empire." November 13, 2020.

Nicholas O'Neill, Ph.D. Candidate in History, The University of Chicago, "A Taste of Empire: Cultivating the Porcelain Industry under Napoleon." December 4, 2020.

Gregory Valdespino, Ph.D. candidate in History, The University of Chicago, "'I Thought I was Forgotten': Homes,

West African Prisoners of War, and a New Imperial Social Contract." January 22, 2021.

Amine Bouhayat, Ph.D. candidate in Romance Languages and Literatures, The University of Chicago, "Formes de l'impérialisme dans le théâtre romain de Pierre Corneille." February 5, 2021.

Elizabeth Cross, Assistant Professor of History, Georgetown University, "Commerce and Diplomacy on the Indian Subcontinent: The Compagnie des Indes in the last years of the Old Regime (1785–1789)." February 19, 2021.

French Through Theater: Online and Beyond, a virtual French pedagogy roundtable organized by Sylvie Goutas and others. February 20, 2021.

Marlene Daut, Professor of African Diaspora Studies, University of Virginia, "A King in a World of Kings: Independent Haiti and the Reign of Henry Christophe." March 5, 2021.

Isabel Gabel, Postdoctoral Fellow in Ethical, Legal and Social Implications (ELSI) of Genetics and Genomics in the Department of Medical Ethics and Health Policy and Visiting Scholar in the Department of History at University of Pennsylvania., "Universal Biology and Anti-totalitarian Politics in France, 1940–1952." April 16, 2021.

Esther Van Dyke, Ph.D. Candidate in Romance Languages and Literatures, The University of Chicago, "The Sublime in Racine's Biblical Plays." April 30, 2021.

Marcel Proust: Contested Legacies, an international on line confrence. See pages 8–9 for more details. May 14, 2021.

Michele Kenfack, Ph.D. Candidate in Romance Languages and Literatures, The University of Chicago, "Remapping 1968: Francophone Writers and the "Global" Protest." May 28, 2021.

New Agreements Signed

Between the University of Chicago and the **University of Paris Sciences et Lettres** (PSL), a three-year declaration of intent (2021–2024) that outlines the contours of a cost-sharing arrangement that will finance up to two FACCTS-supported research collaborations spearheaded by co-Principal Investigators affiliated with the University of Chicago and with PSL.

Between the University of Chicago and the **College de France**,a five-year agreement (2021–2026) that both ensures a regular flow of weeklong visits at the University of Chicago by eminent researchers from the Collège de France and provides a mechanism for the University of Chicago to send Ph.D. student in all disciplines to the Collège de France for research fellowships or laboratory internships.

Between the University of Chicago and the **Institut des Amériques**, a five-year agreement (2021–2026) that will create an International Hub based at the University of Chicago to be administered by a visiting graduate student from France. Students selected to administer the hub will spend two years on the Chicago campus conducting Ph.D. research, organizing a series of academic colloquia focused around a specific topic, and preparing for a third year based at the University of Chicago Research Institute in Paris.

Publication

The first book in the University of Chicago Press's new France Chicago Collection—Jacques Derrida's *Thinking Out of Sight: Writings on the Arts of the Visible*, with new translations by Laurent Milesi (2021)—was publishing in April of 2021. This work, and all future titles in the collection, are carefully selected by the Press's acquisitions editors, under the advisory of faculty directors of the France Chicago Center. Selected publications will also benefit from a translation subsidy provided by the France Chicago Center.

COLLABORATIVE RESEARCH IN THE SCIENCES (FACCTS)

Seed funding from the FACCTS enhances scientific research by encouraging closer ties between Chicago researchers and high-level research teams in France. Award were given to teams of scientists who take innovative approaches to solving complex problems and who show potential for successful and sustainable collaboration.

In 2021, the FACCTS program received a total of 20 applications, with applicants requesting a total of $468,791. Fifteen projects were selected—six in the Physical Sciences, five in the Biological Sciences, one at the Pritzker School of Molecular Engineering, two at Argonne National Laboratory, and one at Fermilab Accelerator National Laboratory. A total of $304,931 was committed to these projects, with each project receiving commitments ranging from $10,000 to $40,000. The average amount of an award was $23,440; the median award was $19,791. The table on the opposite page summarizes the research projects supported this year. More complete descriptions can be found in appendix 1.

PROJECTS SUPPORTED BY FACCTS

Proposal Title	Name	Department	Division or Lab	Partner in France	Institution in France	Award
Systems Analysis of Plant Defenses Promoted by Endogenous Bioactive Metabolites	Jean Greenberg	Molecular Genetics & Cell Biology	BSD	Claire Parent	6249 Chrono-Environnement, University of Franche-Comté	$15,000
Discovering Common Principles for Biological Prediction*	Stephanie Palmer	Organismal Biology & Anatomy	BSD	Thierry Mora	Ecole Normale Supérieure	$15,000
Exploring Adaptive Responses to pH Variability in the Face of Ocean Acidification*	Cathy Pfister	Ecology & Evolution	BSD	Jean-Pierre Gattuso	Laboratoire d'Oceanographie de Villefranche	$15,000
A Novel Collaborative Approach to Studying Parasite Invasion	Aaron Turkewitz	Molecular Genetics & Cell Biology	BSD	Maryse Lebrun	University of Montpellier	$10,000
Biodiversity, Conservation and Evolution of Coral Reef Fishes in French Polynesia	Mark Westneat	Organismal Biology & Anatomy	BSD	Serge Planes	Centre de Biologie et d'Ecologie Tropicale et Méditerranéenne	$13,000
Functional Polyelectrolyte Complex Micelles with Elastin-Like Peptide Segments	Matthew Tirrell	PME	PME	Sébastien Lecommandoux	University of Bordeaux, Unité Mixte de Recherche CNRS 5629	$25,000
Collaboration for Thin-Sheet Mechanisms	Thomas Witten	Physics	PSD	Benoît Roman	laboratoire PMMH Unité Mixte de Recherche n° 7636	$14,600
Probing the Pertinent Interactions of Endophilin and Actin in Vesicle Scission using In Vitro and Coarse Grained Methods*	Gregory Voth	Physics	PSD	Patricia Bassereau	Centre de Recherche de l'Institut Curie (Paris)	$20,000
Geometric Theory of Quantum Hall States	Paul Wiegmann	Physics	PSD	Semyon Klevtsov	University of Strasbourg, Institute for Advanced Mathematical Research	$20,000
Modeling Modern Network Traffic: From Data Representation to Automated Machine Learning	Nicholas Feamster	Computer Science	PSD	Francesco Bronzino	University of Savoie Mont Blanc	$15,000
International Collaboration in High-Altitude Measurements of Water Vapor and Cirrus Clouds over the Asian Monsoon*	Elisabeth Moyer	Geophysical Sciences	PSD	Sergey Khaykin	LATMOS / IPSL	$25,000
Activity Induced Phase Separation	Vincenzo Vitelli	Physics, James Franke Institute	PSD	David Martin	University of Paris	$25,000
Liquid Inks for Near-Infrared Lasers	Benjamin Diroll	Nanomaterials, Spectroscopy	ANL	Sandrine Ithurria	École supérieure de physique et de chimie industrielles (ESPCI Paris)	$40,000
Challenging the Orthodoxy of 'Materials Design': Hard X-ray Probes of the Origin of Thermoelectric Properties	Raymond Osborn	X-ray scattering group, Materials Science Divison	ANL	Simon Kimber	Université de Bourgogne	$32,000
Characterization of Radiation Damage Effects in High-Energy Neutrino Target Graphite using Low-Energy Heavy Ions	Frederique Pellemoine	Accellerator Division	Fermilab	Clara Grygiel	GCIMAP-CIRIL-GANIL (Caen)	$19,791

* underwritten by FCC's Support Council in the Sciences (Confrères)

FINANCIAL SUMMARY[1]

Revenue

Endowment Revenue[2]	$113,100
Unrestricted Support from University of Chicago Units[3]	$52,000
Programmatic Support from University of Chicago Units[4]	$115,000
Programmatic Support from National Laboratories[5]	$76,800
Programmatic Support from the French Ministry of Foreign Affairs[6]	$25,000
Programmatic Support from the French Ministry of Higher Education[7]	$43,500
Support of the FACCTS Program from Individual Donors (*Confrères*)	$38,500
Programmatic Support from Partner Universities[8]	$49,000
Total	**$512,900**

Expenditures

Student Mobility[9]	$69,500
Collaborative Research in the Sciences (FACCTS)[10]	$304,400
Workshops, Conferences, Public Events	$16,100
Collaboration with the University of Chicago Press	$22,500
Administrative Expenses[11]	$53,200
Total	**$465,700**

1 This financial summary was finalized prior to the end of fiscal year 2021. For that reason some figures are based on projections. All figures are rounded to the nearest hundreds.

2 FCC endowment value as of 3/31/21 was $3,747,931.07. The payout formula is determined by the University of Chicago Board of Trustees.

3 This figure includes unrestricted support from the Harris School of Public Policy, the Division of the Humanities, the Division of the Social Sciences, Crown Family School of Social Work, Policy, and Practice, and the Divinity School.

4 This figure includes contributions from UChicago units in support of: FACCTS, The Collège de France Exchange initiatives, conferences, cultural events, the EHESS exchange fellowships, and the Workshop on Interdisciplinary Approaches to Modern France and the Francophone World.

5 Includes funding provided by Argonne National Laboratory and Fermilab National Accelerator Laboratory in support of three FACCTS collaborations.

6 Includes unrestricted financial contributions to the FACCTS program and to FCC's cultural programming.

7 For support of FCC's student mobility initiatives ($20,000) and FACCTS ($23,500)

8 Includes contributions to the FACCTS program by the Université de Paris Sciences et Lettres (PSL), as well as exchange fellowship support from the EHESS and Sciences Po.

9 Included in this figure are: 3 year long research fellowships ($57,500), and 3 summer internship support grants ($12,000)

10 See appendix 1 for more details.

11 Includes salary and benefits for 1 half-time administrator, 1 student part-time office assistant, and various supplies and services.

APPENDICES

APPENDIX 1

Supplemental Information on FACCTS Applications and Program Administration

FACCTS & Figures

Total FACCTS Applications Received	**20**
Applications from Faculty Members in the Physical Sciences (PSD)	6
Applications from Faculty Members in the Biological Sciences (BSD)	6
Application from Faculty Member at the Pritzker School (PME)	1
Applications from Researchers at Argonne National Laboratory (ANL)	5
Applications from Researchers at Fermilab	2
Total Funding Requested	**$468,791**
Total Requested by PSD Faculty	$130,500
Total Requested by BSD Faculty	$83,000
Total Requested by PME Faculty	$25,000
Total Requested by Researchers at ANL	$190,500
Total Requested by Researchers at Fermilab	$39,791
Total Number of FACCTS Grants Awarded	**15**
Recipients in PSD	6
Recipients in BSD	5
Recipient at PME	1
Recipients at ANL	2
Recipient at Fermilab	1
Total Funding Allocated to FACCTS Projects in 2020	**$304,391**
Allocated to Projects in PSD	$119,600
Allocated to Projects in BSD	$68,000
Allocated to Projects at PME	$25,000
Allocated to the ANL-Based Projects	72,000
Allocated to the Fermilab-Based Project	$19,791
Average Amount of Each Request	**$23,440**
Average Amount of Each Award	**$21,742**

Partners/Stakeholders

Argonne National Laboratory	$57,000
Ministry of Higher Education, Research and Innovation	$43,525
Members of the France Chicago Center Support Council in the Sciences (Confrères)	$38,500
Office of the Provost of the University of Chicago	$25,000
France Chicago Center	$25,000
Division of the Physical Sciences	$25,000
Division of the Biological Sciences	$25,000
Université de Paris Sciences et Lettres (PSL)	$25,000
Office of Science and Technology at the Embassy of France in Washington	$20,000
Pritzker School for Molecular Engineering	$20,000
Fermilab National Accelerator Laboratory	$19,791
Office of the EVP for Research	$15,000
Total	**$338,816**

Review Committee

The France Chicago Center gratefully acknowledges the work of the 2021 FACCTS committee, whose members included: **David Kovar** in the Department of Molecular Genetics & Cell Biology (representing BSD), **Paolo Privitera** in the Department of Astronomy & Astrophysics (representing PSD), and **Keith Moffat** in the Department of Biochemistry & Molecular Biology (representing FCC). **Robert Morrissey** in the Department of Romance Languages & Literatures (representing FCC) chaired the committee. **Jean-Paul Lallès** (Scientific Attaché at the Consulate of France in Chicago) participated in the discussion and decision-making as well. **Daniel Bertsche** (Associate Director, France Chicago Center) convened and facilitated the committee's discussions and deliberations.

FCC Support Council In The Sciences (Confrères)

The France Chicago Center's Support Council in the Sciences, the members of which are designated as *Confrères*, has once again provided strong support to the FACCTS program. This year, the *Confrères* have generously underwritten the costs of three distinct research collaborations—those involving Cathy Pfister & Jean-Pierre Gattuso, Stephanie Palmer & Thierry Mora, and Elisabeth Moyer & Sergey Khaykin. The France Chicago Center wishes to thank the following individuals for their valuable contributions: **Tem Horwitz** (co-chair), **Daniel Weissbluth** (co-chair)**, George Austin**, **Sandra Barreto**, **Kara Schupp,** and **Xiao Zhang**. The science department of **Francis W. Parker School** also participates in the Support Council program.

New Partnership with University of Paris Sciences & Lettres (PSL)

A new declaration of intent between the University of Chicago and the University of Paris Sciences et Lettres (PSL), signed in February 2021, establishes the framework for joint financial participation in the funding of up to two FACCTS-supported collaborations per year over a three-year period, when these collaborations involve PSL-affiliated researchers. This year, the arrangement co-financed FACCTS awardees: Gregory Voth & Patricia Bassereau, and Benjamin Diroll & Sandrine Ithurria. We are grateful to PSL—represented by Emilienne Baneth, Vice President for International Relations—for its partnership.

APPENDIX 2

Supplemental Information on FACCTS Applications and Program Administration

Collaboration for Thin-Sheet Mechanisms

Chicago PI: . . . . . Thomas Witten (Physics)
PI in France: . . . . . Benoît Roman (PMMH, CNRS)
FACCTS Award (1 Year): $14,600

PROJECT SUMMARY: Picture a crumpled paper sheet, a flounced skirt, an origami bird or a popup holiday card. The rich shape-ability of thin sheets is at the heart of all these phenomena and structures. Until recently these shapes were discovered by the artist's eye and the inventor's trial and error. In the last decade, quantitative laws predicting how to make and control these shapes are rapidly being discovered, notably by the experimental lab of Benoit Roman and collaborators at ESPCI and by Thomas Witten's theoretical group at UChicago. We propose to empower the progress of both labs through exchange visits funded by FACCTS. The two research teams will focus on the instability of curved wrinkles against segmentation, and actuators powered by inflating thin bilayers to create processive motion.

Probing the Pertinent Interactions of Endophilin and Actin in Vesicle Scission using In Vitro and Coarse Grained Methods

Chicago PI: . . . . . Gregory Voth (Chemistry)
PI in France: . . . . . Patricia Bassereau (Institut Curie)
FACCTS Award (2 years): $20,000

PROJECT SUMMARY: The Bassereau group at Institut Curie and the Voth group at UChicago plan to develop a mechanistic understanding of how the actin cytoskeleton, a structural element of the cell, contributes to the reshaping of cell membranes in cooperation with endophilin, a ubiquitous membrane protein. By using both computational (Voth) and experimental (Bassereau) methods in tandem, they will take a multi-scale approach that will inform a deeper understanding of the dynamics of the membrane as well as provide pertinent insights to future simulations and experiments, each method informing the other. The results of this project will greatly advance knowledge about membrane remodeling, with important implications for diseases tied to impaired membrane function such as Alzheimer's and cancer.

This collaboration is supported in part by the Université de Paris Sciences et Lettres (PSL) through a broader agreement linking the University of Chicago with PSL.

Geometric Theory of Quantum Hall States

Chicago PI: . . . . . Paul Wiegmann (Physics)
PI in France: . . . . . Semyon Klevtsov (University of Strasbourg)
FACCTS Award (2 years): $20,000

PROJECT SUMMARY: Quantum Hall Effect (QHE) is a remarkable and the most fundamental phenomenon in modern condensed matter physics, where the precise quantization of conductance occurs in imperfect materials. The goal of this project is to develop a geometric theory of the quantum correlated electronic states in the QHE regime. Researchers plan to study the geometric adiabatic transport of the QH states on Riemann surfaces, their relation to random geometry, and experimental realization of geometric effects in QHE realized topological nano-wires, novel nano-materials. The project aims to bring recently established geometric theory of QHE to a new level, as well as to explore the possibility of detecting the novel quantization effects in new materials.

Modeling Modern Network Traffic: From Data Representation to Automated Machine Learning

Chicago PI: . . . . . Nicholas Feamster (Computer Science)
PI in France: . . Francesco Bronzino (University of Savoie Mont Blanc)
FACCTS Award (2 years): $15,000

PROJECT SUMMARY: Network operators and researchers must answer questions about network traffic, both to improve understanding about the Internet and to improve the network operations through improved performance and security. The Feamster and Bronzino groups will develop foundational algorithms, data representations, tools, and workflows that will enable operators and researchers to answer a wide range of questions about network traffic, at scale, at high speed, and in real time. The project will leverage recent technological advances, including the advent of programmable hardware and automated machine learning pipelines, to design and develop (1) standard, efficient representations of network traffic, and (2) models for classification and anomaly detection problems; and (3) network telemetry elements. These capabilities will allow operators and researchers to ask a broader set of questions than is possible today.

International Collaboration in High-Altitude Measurements of Water Vapor and Cirrus Clouds over the Asian Monsoon

Chicago PI: . . . . . Elisabeth Moyer (Geophysical Sciences)
PI in France: . . . . . Sergey Khaykin (UVSQ, LATMOS)
FACCTS Award (2 years): $25,000

PROJECT SUMMARY: The summertime Asian Monsoon is the largest source of water vapor to the upper regions of the atmosphere (> 17 km), and contributes strongly to cirrus (ice) clouds that help warm the Earth's climate. However, the difficulty of studying the Asian Monsoon means that direct measurements of it from high-altitude aircraft were first made only in 2017, in the European-led StratoClim campaign. This proposal would support the continuing collaboration of Dr. Moyer and Dr. Khaykin, who both participated in StratoClim, and would allow Dr. Khaykin to join the upcoming U.S-led ACCLIP campaign, the second ever "in-situ" sampling of Asian Monsoon air. The overall science goal is to understand the factors that govern the production of monsoon-related cirrus and how they may change in the future.

This collaboration is supported by Kara Schupp, George Austin, and Xiao Zhang through the Horwitz-Barreto Charitable Fund.

Activity Induced Phase Separation

Chicago PI: . . . . . Vincenzo Vitelli (Physics)
PI in France: . . . . . David Martin (University of Paris)
FACCTS Award (2 years): $25,000

PROJECT SUMMARY: Active Matter studies collection of microscopic agents able to extract energy from their medium to gain self-propulsion, self-rotation etc. Our aim is to devise a bottom-up approach to study non-equilibrium phase transitions involving activity reduction at high density. The final goal is to build a microscopic dynamics endowed with activity reduction that does not involve self-propulsion and whose macroscopic hydrodynamics can be derived in a controlled manner. The analysis of potential candidate systems will be performed using the Doi-Peliti path-integral formalism that yields the functional form of the macroscopic hydrodynamics from microscopics. Once this step is completed, the next task will be to determine numerically the range of microscopic parameters leading to the generalized phenomena that we tentatively refer to as activity induced phase separation.

Systems Analysis of Plant Defenses Promoted by Endogenous Bioactive Metabolites

Chicago PI: . . . . . Jean Greenberg (Molecular Genetics & Cell Biology)
PI in France: . . . . . Claire Parent (University of Franche-Comté)
FACCTS Award (1 year): $15,000

PROJECT SUMMARY: Plants produce many interesting chemicals, called secondary metabolites, which regulate diverse processes. The Greenberg lab has an interest in the enzymes and their metabolite products that impact immunity and stress. Dr. Parent has an interest in stress responses and has conducted sabbatical research with the Greenberg lab. With the support of a previous FACCTS grant they embarked on an ambitious plan to knock out a group of genes in the AZI cluster that are implicated in regulating defenses via metabolites and identified the most active basal metabolites—those involved in regulating levels of key receptors. In the next phase of this collaboration, Dr. Parent will characterize the plants she constructed in a set of assays that will examine plant morphological properties that correlate with plant responses to microbes. The two research teams are particularly interested in root responses to microbes and metabolites. The Parent lab will also test the candidate metabolites that they already identified to check their effects on the morphology and the induction of defense-related transcripts. The research teams will also do infection assays and metabolite profiling to test the impact of the mutations and test candidate metabolites for their ability to alter plant responses to microbes.

Discovering Common Principles for Biological Prediction

Chicago PI: . . Stephanie Palmer (Organismal Biology & Anatomy)
PI in France: . . . . . Thierry Mora (Ecole Normale Supérieure)
FACCTS Award (1 year): $15,000

PROJECT SUMMARY: Learning how to make accurate predictions about the environment is important for all biological systems. The two groups have demonstrated what the end-result of such learning would be in the visual system (Chicago) and in the immune system (Paris), and have shown that a real biological system achieves a maximally predictive state. What remains a mystery is how this learning proceeds: how do biological systems adjust their internal representations of the world to become predictive?

Previous FACCTS funding allowed the teams to solve a variety of prediction problems that span a range from dynamics relevant to vision to those that are involved in immune sensing. A paper summarizing these finding has been submitted and is under review at PLoS Computational Biology. In this next phase, they will explore how these optimal predictive rules perform in a dynamic environment—one in which the inputs change as the viral complement evolves or new objects enter the visual scene. They are hoping that adaptation to these changes can be described under a common framework that applies both to the immune system as well as the visual processing centers in the brain.

This collaboration is supported by Kara Schupp, George Austin, and Xiao Zhang through the Horwitz-Barreto Charitable Fund.

Exploring Adaptive Responses to pH Variability in the Face of Ocean Acidification

Chicago PI: . . . . . Catherine Pfister (Ecology & Evolution)
PI in France: . . . . . Jean-Pierre Gattuso (Laboratoire d'Océanographie de Villefranche, CNRS)
FACCTS Award (1 year): $15,000

PROJECT SUMMARY: The world's oceans are currently undergoing a rapid decline in seawater pH, termed ocean acidification (OA). Though initial estimates suggest that OA poses profound threats to global marine communities, two key areas of research have been largely disregarded: (1) the potential for rapid adaptive responses to OA and (2) the spatial and temporal variability of pH in coastal ecosystems. This collaboration explores the interplay of these issues by synthesizing lab-based studies at the Laboratoire d'Océanographie (LOV) in France with high-throughput genomic sequencing and data analysis at the University of Chicago. In a previous phase of research, Mark Bitter, then a graduate student in the Pfsiter lab (now a postdoc at Stanford University) conducted research at LOV demonstrating the response of mussels to ocean acidification including the presence of standing genetic variation for adaptation and the 'plastic' or flexible response of these important bivalves when the environment varies. Three publications have resulted so far. In the next phase, research teams will look for nitrogen fixation in bacteria associated with the common seagrass in the Mediterranean—Posidonia oceanica, or Neptune grass—and will test whether the frequency of beneficial bacteria with the nifH gene changes with ocean acidification. They have yet to determine whether to conduct such testing at the LOV lab in experimental mesocosms or in situ at the areas near Ischia, Italy where carbon dioxide naturally vents from the sediment.

This collaboration is supported by Kara Schupp, George Austin, and Xiao Zhang through the Horwitz-Barreto Charitable Fund.

A Novel Collaboration Approach to Studying Parasite Invasion

Chicago PI: . . Aaron Turkewitz (Molecular Genetics & Cell Biology)
PI in France: . . . . . Maryse Lebrun (University of Montpellier)
FACCTS Award (1 year): $10,000

PROJECT SUMMARY: In the parasites Toxoplasma and Plasmodium, the secretion of proteins is a critical aspect of their ability to infect humans and to cause diseases. For that reason, understanding the mechanisms underlying secretion could lead to new therapeutic approaches. The Turkewitz and Lebrun research groups in Chicago and Montpellier respectively have uncovered a novel strategy for identifying and analyzing genes required for secretion during parasite infection. I a previous FACCTS-funded stage of the collaboration, a graduate student exchange resulted in the identification of several genes that were subsequently investigated in detail. A manuscript describing the work—appearing under the title of "An Alveolata secretory machinery adapted to parasite-host cell invasion" was accept and has been published in *Nature Microbiology*. In the next phase of the collaboration, more exchange visits are planned to analyze and discuss the enormous and complex datasets that have been collected.

Biodiversity, Conservation, and Evolution of Coral Reef Fishes in French Polynesia

Chicago PI: . . Mark Westneat (Organismal Biology & Anatomy)
PI in France: . . . Serge Planes (CBETM, University of Perpignon)
FACCTS Award (1 year): $13,000

PROJECT SUMMARY: Coral reef ecosystems were once thought to be protected from the impacts of species loss due to their high biodiversity. However, these ecosystems are home to many fish species that perform unique and important ecological roles, and the loss of these species may have disproportionately large effects on the health and resilience of reef communities. The assessment of current ecological diversity within these reef habitats is critical to predicting the impacts of climate change on these coral reef ecosystems and to designing and implementing effective conservation methods and policy. In a previous phase of this project—also funded by FACCTS—researchers recorded extensive underwater video of fishes feeding on healthy and bleached reefs, and are currently analyzing the substrate choices of the fishes. Excellent progress was made on research. In the next phase of this project team members will return to the coral reefs of Moorea in (mid- or late 2021) to continue surveys of fish behavior on coral reefs, in areas that have been bleached, and in areas that remain healthy, to determine how bleaching impacts foraging behavior. Graduate student, Chloe Nash, will continue her underwater filming work with a focus on goatfishes—a particularly interesting family and a focus of her dissertation—along the coast. This work on local distribution and biogeography is a central area of the collaboration, combining data from the Westneat group with prior data collected by the Planes group in France.

Functional Polyelectrolyte Complex Micelles with Elastin-Like Peptide Segments

Chicago PI: . . . . . Matthew Tirrell (PME)
PI in France: . . . . . Sébastien Lecommandoux (University of Bordeaux, CNRS)
FACCTS Award (2 years): $25,000

PROJECT SUMMARY: The Tirrell group has developed a delivery system for nucleic acids that enable the delivery to specifically targeted tissue, while also protecting the nucleic acids from enzymatic degradation before they reach their target. The delivery system consists of a positively charged polymer, which complexes to the negatively-charged nucleic acid, chemically coupled to a protective polymer that surround the charge complex core forming a micelle. A targeting peptide (homing device) is coupled to the outside of the protective polymer to guide this polyelectrolyte complex micelle to its destination. The Lecommandoux group (Bordeaux) has also synthesized micelle-forming polymers able to encapsulate nucleic acids, but with a different protective polymer, very sensitive to temperature, which provide another mechanism to control the release of the therapeutic nucleic acid. The two teams will work together to together to combines innovative thermosensitive polyelectrolytes based on ELP-b-polypeptide copolymers, leading to a new generation of PECM with pH and T-responsiveness and possibly to a smart mechanism of delivery of charged biomacromolecules by physical inversion.

Liquid Inks for Near-Infrared Lasers

Chicago PI: . . . Benjamin Diroll (Argonne National Laboratory)
PI in France: . . . . . Sandrine Ithurria (ESPCI)
FACCTS Award (2 years): $40,000

PROJECT SUMMARY: This project will use semiconductor nanoplatelets to demonstrate printable lasers for the technologically-critical near-infrared window including telecommunications bands. One current method for near-infrared lasers is to use "quantum wells," which are very thin semiconductors. But the advantages of quantum wells—stability, tunable wavelength, and energy efficiency—are yoked to challenging, costly, and poorly-scaled fabrication. Nanoplatelets, two-dimensional sheets less than 10 atomic layers thick and less than 100 nanometers in lateral size, combine the advantages of quantum wells with synthesis by wet chemistry and processability as inks for printing. This work will use innovative solution chemistry developed at ESPCI to control nanoplatelet composition down to single atomic layers and leverage that control with advanced measurement capabilities at Argonne to engineer inks with targeted laser characteristics.

This collaboration is supported in part by the Université de Paris Sciences et Lettres (PSL) through a broader agreement linking the University of Chicago with PSL.

Challenging the Orthodoxy of "Materials Design": Hard X-ray Probes of the Origin of Thermoelectric Properties

Chicago PI: . . Raymond Osborn (Argonne National Laboratory)
PI in France: . . . . . Simon Kimber (University of Burgundy)
FACCTS Award (2 years): $32,000

PROJECT SUMMARY: The ability to design materials, i.e., to predict and tailor their properties in order to optimize functional behavior, is one of the most pressing challenges in materials science. The design of thermoelectric materials, which enable the conversion of waste heat to electrical energy, is hindered by conflicting theories about how atomic fluctuations affect thermal transport. Recently, novel synchrotron x-ray scattering methods for probing atomic disorder using single crystal pair-distribution-functions (PDF) have been developed. This proposal will develop a framework to distinguish between leading theoretical models by combining PDF measurements with molecular dynamics simulations.

Characterization of Radiation Damage Effects in High-Energy Neutrino Target Graphite using Low-Energy Heavy Ions

Chicago PI: . . . . . Frédérique Pellemoine (Fermilab)
PI in France: . . . . . Clara Grygiel (CIMAP-GANIL)
FACCTS Award (2 years): $19,791

PROJECT SUMMARY: With the increasing beam intensities of future multimegawatt proton accelerator facilities, beam-intercepting components, such particle production targets, are expected to operate under extreme environment with the potential to push materials close to their thermal and structural limit. It is critical for the next generation accelerator to understand the beam-induced damage processes in material to better predict the component lifetime. Studying material properties exposed to high energy protons is an expensive and time-consuming method due to the high levels of activation. Using low energy ion irradiation could address these limitations. If a correlation can be found between proton and ion radiation damage, this capability would open the way for faster, less expensive, and safer irradiation method to explore candidate materials for future high intensity target facilities.

ACKNOWLEDGMENTS

The France Chicago Center gratefully acknowledges the many partners whose collaborative efforts and support were so crucial to FCC's programming and organizational development. Specifically, we would like to thank:

- the Division of the Social Sciences for the valuable administrative and financial support it provides.
- the Division of the Humanities, the Harris School of Public Policy, the Divinity School, and the Crown Family School of Social Work, Policy, and Practice for underwriting FCC's administrative expenses.
- the Office of the Provost, the Divisions of the Biological and Physical Sciences, the Pritzker School of Molecular Engineering, UChicago Global, PSL, and all of our university and national-laboratory FACCTS stakeholders whose partnership makes this seed-funding program such a success.
- the more than 20 UChicago departments, centers, and institutes that partner with FCC to help generate and implement programming.
- our partners at the Consulate General of France in Chicago, in particular **Guillaume Lacroix** (Consul General), **Tanguy Accart** (Cultural Attaché), **Nicolas Douay** (Higher Education Attaché), and **Jean-Paul Lallès** (Scientific Attaché).
- our partners at the Embassy of France in the United States, in particular **Yves Frénot** (Scientific Counselor) and **Gaëtan Bruel** (Cultural Counselor) for the significant financial, logistic, and programmatic support they provide.
- **Claire Giry, Denis Despréaux, Nadine Van der Tol, Patricia Geltz-Vasselle,** and **Elise Binet**, and their colleagues at the French Ministry of Higher Education, Research and Innovation for partnering with FCC to support and further develop our activities in the areas of collaborative scientific research and student mobility.
- the members of our Support Council in the Sciences—**George Austin**, **Sandra Barreto**, **Tem Horwitz**, **Kara Schupp**, **Daniel Weissbluth,** and **Xiao Zhang**—for their generous support of collaborative scientific research.
- the University of Chicago faculty and students whose ideas and energies are at the core of FCC programming.

Statue of Guillaume Budé at the rue St. Jacques entrance at the College de France. Photo by Patrick Imbert, Collège de France, 2021.

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**Confrères are members of FCC's Support Council in the Sciences. Their generous contributions have underwritten in part or in full the costs of four FACCTS-supported research collaborations in 2021.*

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