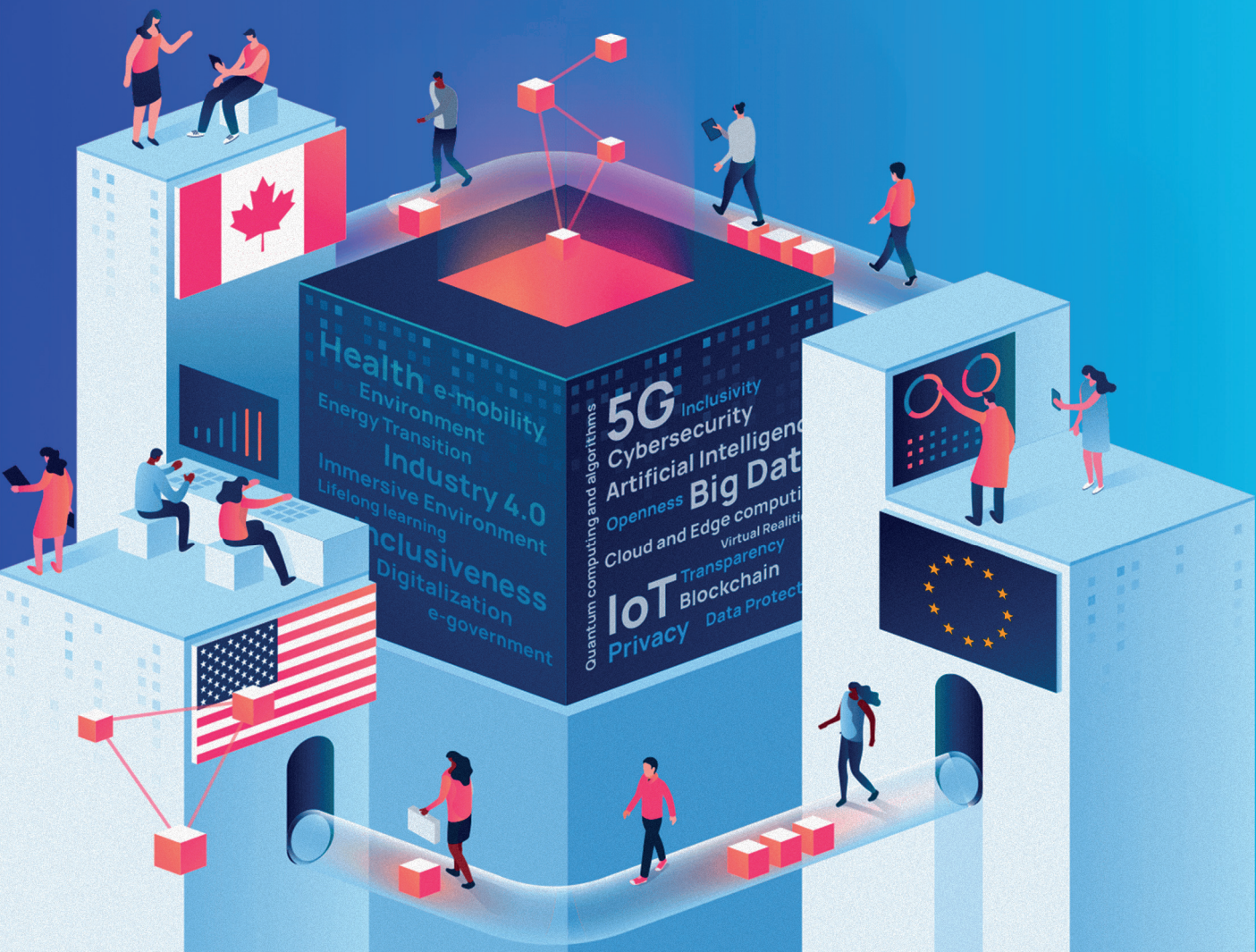
NGI ENRICHERS TRANSATLANTIC



Next Generation Internet Transatlantic
Fellowship Programme NGI Enrichers

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INTRODUCTION

The NGI Enrichers programme enables European NGI researchers and innovators to spend **3-6 months in the United States or Canada**, working with local hosts to share knowledge and establishing long-term collaborations on technologies, services, and standards. **The programme covers travel funding, living allowance, and visa** for visiting fellows from Europe, and its supports both fellows and their hosts through bootcamps, mentoring, visibility activities, community building and more!

CANDIDATES HAVE THE FLEXIBILITY TO CHOOSE ONE OR SEVERAL OF THE FOLLOWING TRACKS:

Open Ideas: The applicant may submit a proposal around the host's area of interest, products, or services. All ideas must fall under one or several Focus Areas defined in the Next Generation Internet.

Challenges: The applicant may submit a proposal answering a specific challenge defined by the host.

Paired Teams: The applicant may submit their proposal along with an organisation who agrees to host the applicant.

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ARIZONA STATE UNIVERSITY

TEMPE, ARIZONA, UNITED STATES

Dragan Boscovic

AZ Blockchain Applied Research Center

Support Provided

At Arizona State University's AZ Blockchain Applied Research Center, NGI Enrichers Fellows benefited from access to advanced research infrastructure and facilities. They received direct mentorship from Prof. Dragan Boscovic and the VizLore team, along with valuable networking opportunities across ASU's academic and entrepreneurial ecosystems. Fellow René Krikke engaged in collaborative R&D projects and gained specialised expertise in Blockchain, IoT, Web3, AI/ML, and Smart Contract security. This supportive environment enabled Fellows to advance their research and build meaningful connections in cutting-edge technology fields.

Key Takeaways

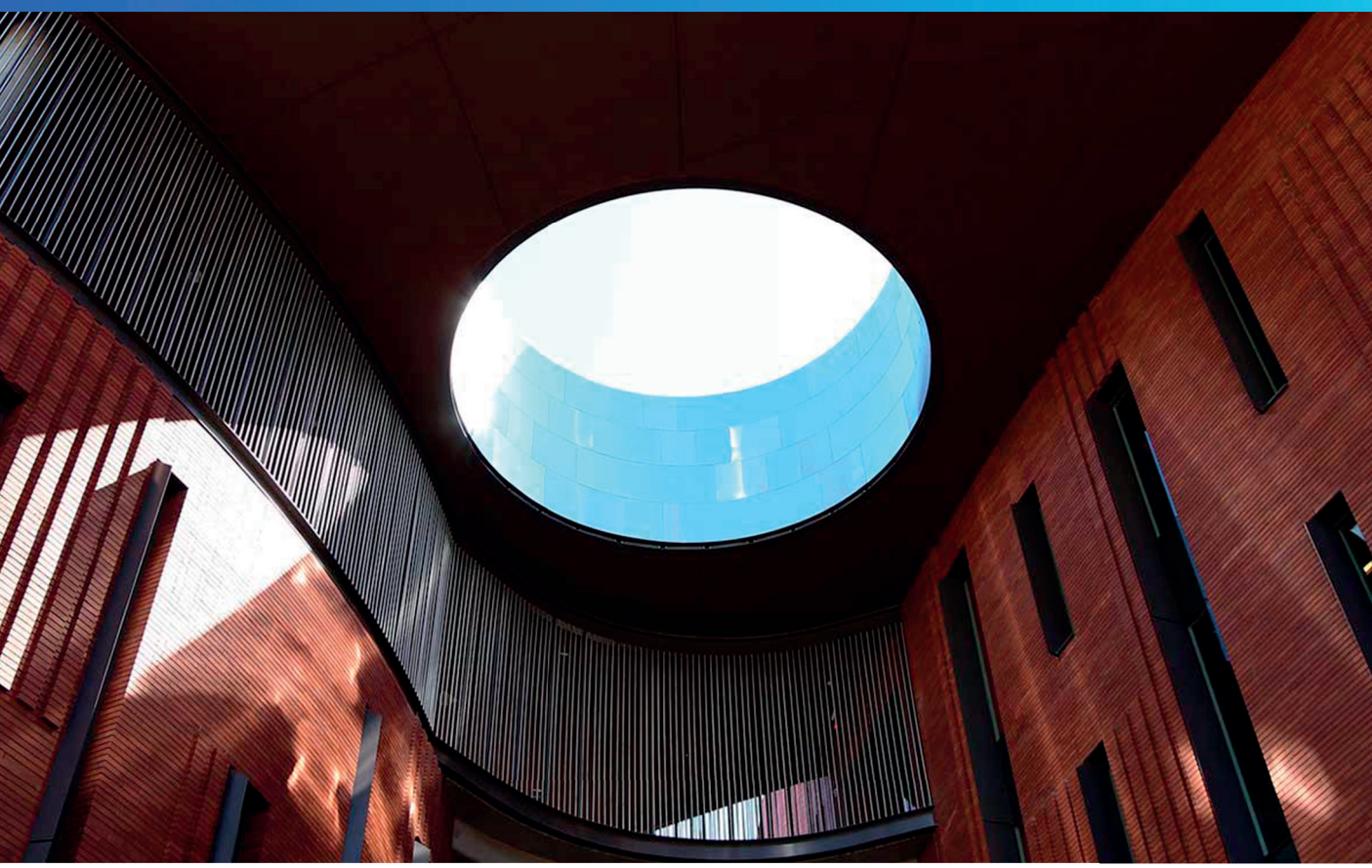
The experience of hosting NGI Enrichers Fellows at ASU provided valuable lessons for fostering transatlantic innovation. Interdisciplinary mentorship and open innovation practices significantly accelerated research outcomes. One challenge was aligning project timelines and funding cycles across EU and US contexts, highlighting the need for proactive coordination. Overall, the experience reinforced that structured collaboration and agile, flexible methodologies are key to building effective and sustainable EU-US research partnerships.

Success Stories Impact

The NGI Enrichers collaboration at Arizona State University led to the successful PRIDE project, developed by René Krikke under the mentorship of Prof. Dragan Boscovic, which developed a novel approach to enhancing Smart Contract security in blockchain ecosystems using Large Language Models. The project advanced the field of decentralised AI by integrating security, privacy, and decentralisation in AI-driven blockchain applications. Building on this foundation, the partnership evolved into the MEDIATE project, continuing to drive innovation in sustainable, decentralised AI solutions. The NGI Enrichers programme has deepened transatlantic cooperation by fostering ongoing knowledge exchange, joint project development, and long-term partnerships in NGI focus areas such as decentralised digital identity, cybersecurity, and AI-enabled governance.

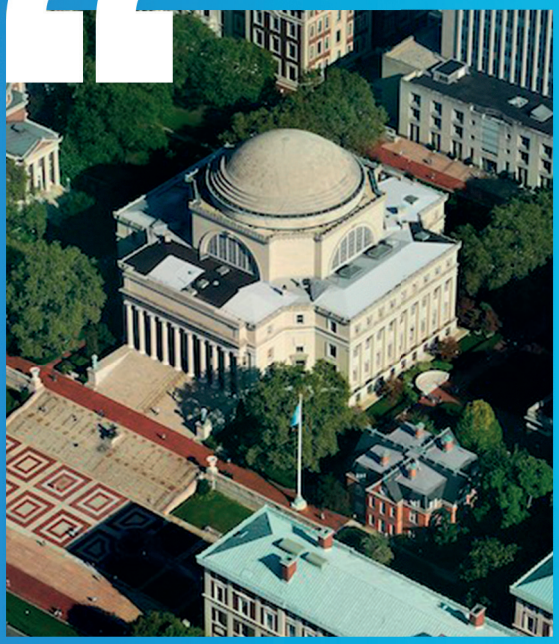
The host provided exceptional support that greatly advanced my research, including access to state-of-the-art facilities at the AZ Blockchain Applied Research Center, and valuable networking opportunities.

- René Krikke



COLUMBIA UNIVERSITY

**NEW YORK CITY,
NEW YORK, UNITED STATES**



Prof. Gil Zussman
WiMNet Lab

Support Provided

At Columbia University's Wireless and Mobile Networking (WiMNet) Lab, NGI Enrichers Fellows received extensive support to advance their research in next generation networking technologies. They gained full access to the COSMOS testbed — an advanced, city-scale wireless platform in New York City (NYC) — enabling real-world experimentation with 5G, edge computing, software-defined radios, and future network architectures. Fellows contributed to innovative work on ultra-low-latency communication, dynamic spectrum sharing, and smart city applications.

In addition, they engaged in Columbia'spartnership with NYC Mesh, a community-driven network initiative, collaborating on developing urban sensing

solutions and building an open dataset for future research. These opportunities provided a highly dynamic environment for impactful research and fostered long-term transatlantic collaboration in advanced wireless technologies.

Key Takeaways

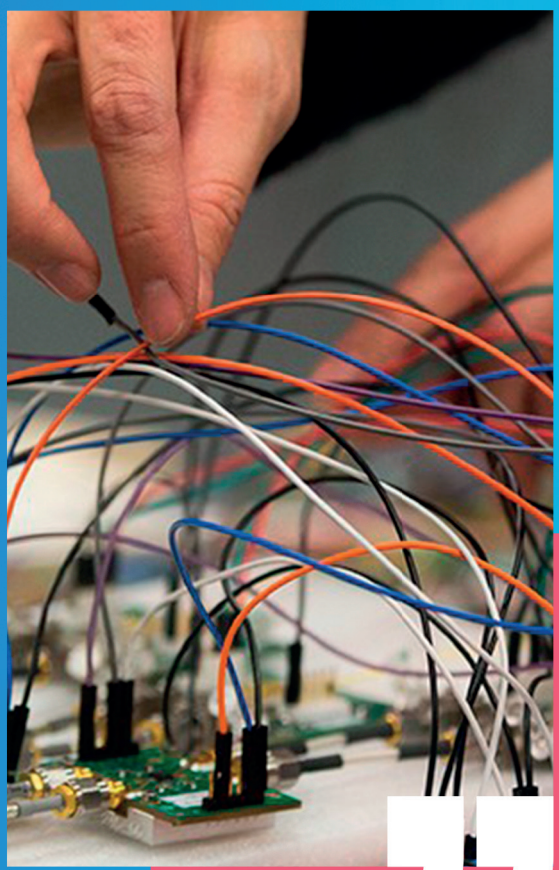
Columbia University's WiMNet Lab gained valuable insights from hosting NGI Enrichers Fellows, with the experience significantly enriching ongoing research and informing best practices for future transatlantic collaboration. Regular, structured engagement through weekly check-ins with graduate researchers helped maintain project momentum and fostered effective collaboration. Hands-on access to advanced infrastructure — including the COSMOS testbed and NYC Mesh antenna — accelerated research outcomes, enabling real-world validation beyond simulations. The lab also promoted openness and knowledge sharing, encouraging Fellows to make their code, datasets, and publications publicly available, which has already attracted new collaborators. These practices underscored the importance of structured mentorship, real-world experimentation, and open science in driving innovation and lasting impact within the NGI community.

Success Stories Impact

The NGI Enrichers initiative at Columbia University's WiMNet Lab has driven impactful research and fostered strong transatlantic collaboration in NGI technologies. Fellows contributed to a series of cutting-edge projects, including enhancing the resilience of real-time vehicular networks to cyberattacks, advancing weather-aware networking through the NYC Mesh community network, and developing

data-driven admission control for mmWave X-Haul networks.

These projects combined advanced AI, edge-cloud architectures, real-world testbed experimentation via the COSMOS platform, and open data contributions to the wider NGI community. Collaborations extended beyond Columbia to partners at Tel Aviv University, Politecnico di Milano, and NYC Mesh, with multiple co-authored publications, open-source releases, and sustained joint research underway. The initiative has significantly expanded Columbia's NGI research network and strengthened long-term transatlantic partnerships, accelerating innovation in wireless networks, urban sensing, and future internet architectures.



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CONCORDIA UNIVERSITY

MONTREAL, CANADA

Badri Murali
Applied AI Institute

Support Provided

At Concordia University's Applied AI Institute, NGI Enrichers Fellows received comprehensive support designed to maximise their research experience. Prior to their arrival, Fellows benefited from tailored visa assistance and preparation through the International Office. Upon joining the university, they were fully integrated into Concordia's academic environment, with access to advanced research resources, dedicated workspaces, and technical infrastructure. NGI Fellows were also encouraged to present their work at conferences and engage in academic events, fostering both research productivity and international exchange.

Key Takeaways

Hosting NGI Enrichers Fellows has greatly enriched Concordia's research environment, bringing in fresh perspectives, new expertise, and fostering valuable international collaborations. The programme helped lay the groundwork for future joint projects and publications, while strengthening mutual learning and cooperation between European and Canadian researchers. Clear coordination and preparation were key factors in maximising the impact of the fellowships.

Success Stories Impact

The NGI Enrichers initiative has significantly strengthened Concordia's transatlantic collaborations, enabling new connections with European researchers and deepening the university's understanding of successful international partnerships. Participation in the programme enhanced insights into the resources and c ommitment required for impactful outcomes. Concordia remains dedicated to advancing transatlantic cooperation in the field of Next Generation Internet research.

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FERMI NATIONAL ACCELERATOR LABORATORY

BATAVIA, ILLINOIS, UNITED STATES

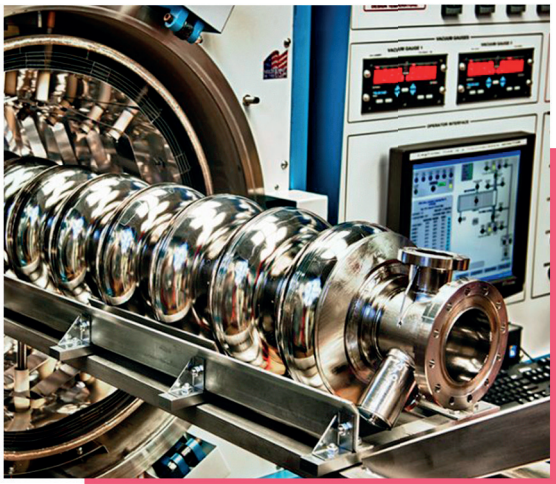
Stefano Lami
SQMS Center

Support Provided

Fermilab's SQMS Center welcomed the NGI Enrichers Fellows into a highly dynamic and supportive research environment. Each NGI Fellow received dedicated mentorship and full access to state-of-the-art facilities for advancing superconducting quantum materials and systems research. Fellows engaged with a vibrant community of over 500 collaborators across 36 partner institutions through regular meetings, fostering interdisciplinary exchange and innovation. This comprehensive support enabled NGI Fellows to contribute meaningfully to global advancements in quantum technologies and to build valuable connections within the international quantum research community.

Key Takeaways

Hosting NGI Enrichers Fellows at Fermilab's SQMS Center has been a highly rewarding experience, fostering valuable international collaboration and advancing scientific research. Key takeaways include the importance of structured onboarding, dedicated mentorship, and transparent communication to support Fellows' integration and professional growth. The experience also highlighted the need for careful coordination around research alignment, security protocols, and logistical arrangements. Embracing the diverse expertise Fellows bring has sparked innovative research directions, while fostering an inclusive community has strengthened long-term professional relationships. The NGI Enrichers experience serves as a catalyst for continued transatlantic collaboration and contributes to Fellows' ongoing engagement in global quantum research efforts.



Success Stories Impact

At the SQMS Center, NGI Enrichers Fellows made significant contributions to experimental and theoretical work in quantum technologies, strengthening the collaborative ethos of the laboratory and advancing the Center's scientific mission. Their research enriched ongoing programmes and laid the foundation for continued international cooperation.

The programme has reinforced long-standing partnerships,

particularly deepening collaboration with Italy's Istituto Nazionale di Fisica Nucleare (INFN), supporting joint research in physics and quantum technologies. More broadly, NGI Enrichers has been instrumental in strengthening transatlantic cooperation, facilitating knowledge exchange, research mobility, and community building across Europe, the US, and Canada. Through structured support, mentorship, and networking, the initiative fosters lasting partnerships that drive progress in NGI technologies and contribute to the development of a globally connected and human-centric internet.

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GEORGE MASON UNIVERSITY

FAIRFAX, VIRGINIA, UNITED STATES

Eddie Hill
Mason Enterprise Center

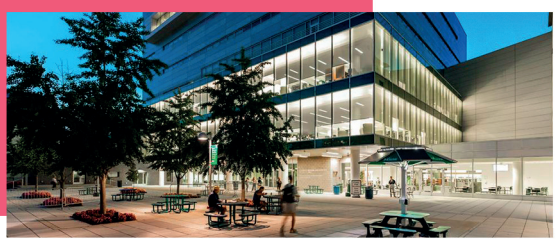
Support Provided

NGI Enrichers Fellows were granted full access to the organisation's expert resources, including tailored mentorship from an experienced advisory team and dedicated office space within a cutting-edge business incubation facility. Immersed in a dynamic entrepreneurial ecosystem, Fellows benefited from connections with regional economic stakeholders, complementary business advisory services, and participation in regular networking events, workshops, and professional development sessions.

This comprehensive support positioned Fellows for meaningful impact and long-term success in innovation and entrepreneurship.

Key Takeaways

As first-time hosts of EU entrepreneurs through the NGI Enrichers programme, we found the experience both rewarding and insightful. Regular, transparent communication between the leadership team and the Fellow was key to building a productive and mutually beneficial relationship. Ongoing dialogue around goals, progress, and opportunities enabled the organisation to provide targeted support and foster impactful collaboration. The experience underscored the value of structured communication and proactive engagement in ensuring successful exchanges and meaningful outcomes for both Fellows and host organisations.



Success Stories Impact

The NGI Enrichers Fellows made a significant impact at George Mason University, enhancing institutional visibility and forging valuable connections with faculty, leadership, and regional innovation partners. Their proactive engagement laid the groundwork for future research collaborations and cross-sector innovation. The initiative has also strengthened transatlantic cooperation by showcasing European expertise within the US innovation ecosystem and fostering deeper dialogue around collaborative opportunities. As a result, the organisation is now better positioned to support ongoing and future EU-US partnerships in Next Generation Internet research, promoting a more connected and dynamic transatlantic innovation landscape.

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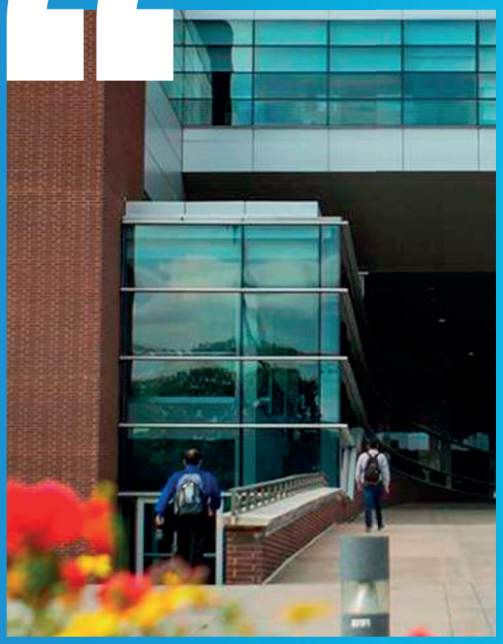
PENNSYLVANIA STATE UNIVERSITY

STATE COLLEGE, PENNSYLVANIA, UNITED STATES



Fenglong Ma
Information Sciences and Technology

Support Provided

The host organisation provided comprehensive support to the NGI Enrichers Fellow Sileshi Nibret Zeleke, enabling strong progress in fellowship activities. Sileshi Nibret Zeleke benefited from exceptional mentorship by Dr. Ma and full access to advanced computing resources, including GPU clusters, secure data storage, and specialised research tools. Integration into an active research group at the intersection of machine learning and healthcare offered valuable collaboration opportunities, supported by regular meetings and brainstorming sessions. In addition, Sileshi Nibret Zeleke received administrative and logistical support, including onboarding, workstation access, and visa-related assistance, ensuring a smooth and productive experience.

Key Takeaways

The NGI Enrichers fellowship at Penn State's Data Science Lab fostered a highly rewarding collaboration, bringing together expertise in AI and healthcare applications. The exchange of diverse ideas and technical knowledge accelerated the development of new methodologies and enriched research outcomes. The experience demonstrated the strong potential of international, interdisciplinary teamwork and laid the foundation for sustained transatlantic collaboration, with joint research planning and discussions on future publications already underway.

Success Stories Impact

At Pennsylvania State University, the NGI Enrichers fellowship supported a successful research project on developing an explainable and privacy-preserving AI framework for diagnosing cardiac conditions using electrocardiogram signals. The project advanced the

the integration of Federated Learning and Vision-Language Models to tackle key challenges in medical AI. The collaboration has led to joint publications targeting top journals and conferences in AI and digital health, with ongoing partnerships extending beyond the fellowship.

The exchange was transformative, offering a unique opportunity to immerse myself in a highly collaborative and resource-rich research environment.

- Sileshi Nibret Zeleke

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SAINT LOUIS UNIVERSITY

SAINT LOUIS, MISSOURI, UNITED STATES

Flavio Esposito
Computer Science

Support Provided

At the Department of Computer Science at Saint Louis University (SLU), the NGI Enricher Fellow was welcomed into a dynamic and interdisciplinary research environment. The Fellow worked alongside students and faculty in Dr. Flavio Esposito's lab, contributing to projects spanning edge computing and federated learning. The department provided full access to research facilities, including advanced networking testbeds, and integrated into weekly lab research meetings. Additionally, the programme facilitated connections with researchers from diverse disciplines such as plant engineering, public health, and entrepreneurship, fostering a truly interdisciplinary and globally relevant research environment.

Key Takeaways

The collaboration with NGI Enrichers Fellows significantly enhanced SLU's ongoing research efforts. *"Collaborating with Emilio, the NGI scholar, helped us accelerate the integration of AI models into our networking testbed. His insights were key to designing this system, and other students in my lab greatly benefited from this collaboration."* — Prof. Flavio Esposito, Department of Computer Science, SLU. The NGI Fellow's expertise was instrumental in accelerating the integration of AI models into the networking testbed, contributing to the advancement of the lab's capabilities.

Success Stories Impact

The NGI Enrichers collaboration was embedded within a cutting-edge research initiative focused on software-defined edge infrastructure for next-generation wireless networks. The Fellow made key contributions to the development of AI-integrated transport and routing protocols using reinforcement learning and helped advance innovative network architectures that combine federated and split learning with programmable networking components.

This work is driving the creation of more adaptive, resilient, and energy-efficient edge communication systems and has contributed significantly to the university's broader research objectives in the field.

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SONOMA STATE UNIVERSITY

ROHNERT PARK, CALIFORNIA, UNITED STATES

Farid Farahmand
Electrical Engineering Department

Support Provided

At Sonoma State University, NGI Enrichers Fellows were provided with dedicated office space, access to necessary equipment, and valuable networking opportunities. They engaged actively with both undergraduate engineering and computer science students, as well as graduate researchers, fostering connections across academic levels and contributing to a dynamic research and learning environment.

Key Takeaways

Hosting an NGI Enrichers Fellow at Sonoma State University was a highly positive experience. The Fellow contributed valuable expertise to collaborative projects and greatly enhanced student learning through workshops,

tutorials, and mentorship. The experience highlighted the importance of clear expectations, flexible scheduling, and fostering external engagement. Overall, the collaboration strengthened the university's research and educational environment, and future partnerships through the NGI programme are eagerly anticipated.

Success Stories Impact

The NGI Enrichers Fellow, Roberto Medina Bujalance, contributed to the successful completion of the first prototype of a medical device project, playing a key role in developing the wireless transmission system and cloud components. The collaboration extended beyond the fellowship, with the Fellow securing funding through the NGI Sargasso programme to continue the work. The NGI Enrichers initiative has fostered valuable partnerships, strengthened research collaboration, and broadened the university's international research networks.

The SSU's Electrical Engineering Department provided invaluable support by granting access to laboratory facilities and organising collaboration with students. I accomplished several key milestones for my project. It was a transformative experience, both personally and professionally.

- Roberto Medina Bujalance

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UNIVERSITY OF COLORADO

BOULDER, COLORADO, UNITED STATES

Eric Keller

Electrical, Computer, and Energy Engineering

Support Provided

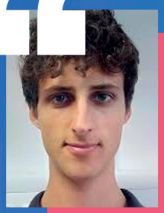
At the University of Colorado, the NGI Enrichers Fellow was fully integrated into Professor Eric Keller's research laboratory, receiving dedicated desk space and actively participating in laboratory meetings and group activities. The NGI Fellow engaged with an emerging project focused on building resilient networks for distributed deep learning, benefiting from personalised mentorship and close collaboration with a PhD student and an industry expert. This supportive environment provided valuable research opportunities and fostered meaningful academic and professional connections.

Key Takeaways

Hosting the NGI Enrichers Fellow at the University of Colorado proved to be a highly successful experience. Integrating the Fellow directly into an active research collaboration allowed for mutual learning, with the Fellow both contributing expertise and gaining new skills while working productively towards shared research goals. The experience highlighted the value of embedding Fellows in meaningful, goal-driven projects to maximise impact and foster effective collaboration.

Success Stories Impact

The NGI Enrichers Fellow, Giulio Sidoretti, contributed to a successful research project on resilient networking for distributed deep learning (DDL). The project led to the development of THORN-ML, a hardware-offloaded, transparent network architecture designed to minimise disruption in DDL applications using commodity hardware. This work resulted in a submission to a top-tier conference. While no formal long-term collaborations have emerged to date, the fellowship fostered strong professional connections with both the Fellow and his PhD supervisor, laying the groundwork for potential future transatlantic partnerships in NGI research. The NGI Enrichers Fellow benefited from a highly collaborative research environment, with strong academic mentorship from Prof. Eric Keller and access to cutting-edge facilities.



The successful development of a scientific paper detailing the findings of the research project, the invaluable academic support from both faculty members and research teams. The NGI contributed significantly to both my personal and professional development.

- Giulio Sidoretti

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UNIVERSITY OF IOWA

IOWA CITY, IOWA, UNITED STATES

Ibrahim Demir
Hydroinformatics Lab (UIHILAB)

Support Provided

NGI Enrichers Fellows, Omer Mermer and Ahmet Nuri Ozcivan, at the University of Iowa benefited from access to the Argon high-performance computing cluster, extensive IT facilities, and a comprehensive suite of specialised software. They were integrated into the Hydroinformatics Lab, an interdisciplinary group fostering regular collaboration and research exchange. Fellows also engaged with government agencies, city departments, and non-profit organisations, expanding their professional networks and enhancing transatlantic research connections.

Key Takeaways

Hosting NGI Enrichers Fellows proved to be a highly enriching experience, with productive collaborations despite logistical challenges in international and hybrid placements. Key success factors included dedicated mentorship, early project integration, and clear goal setting.

The initiative highlighted the value of flexibility, proactive communication, and an international perspective in advancing research innovation.

Success Stories Impact

The NGI Enrichers initiative has significantly strengthened transatlantic collaboration in Next Generation Internet research at the University of Iowa. Fellows contributed to high-impact projects across AI, environmental modelling, hydrology, blockchain, IoT, and digital twins, resulting in numerous joint publications. Long-term partnerships have emerged, with Fellows now employed or actively collaborating on ongoing projects.

The initiative fostered sustained research exchange, technology transfer to European institutions, and a strong foundation for future EU-US innovation in smart infrastructure, environmental systems, and digital governance spirit of the group, the opportunity to contribute to high-impact projects, and the value of regular mentoring and peer interactions.

Fellows were integrated into a dynamic interdisciplinary research environment within the UIHILab. They highlighted the collaborative spirit of the group, the opportunity to contribute to high-impact projects, and the value of regular mentoring and peer interactions.

Working in an interdisciplinary team broadened my perspective and gave me valuable skills in collaborative research collaborative research. It was a great opportunity to learn from outstanding researchers and to work on projects with real-world applications

- Omer Mermer

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UNIVERSITY OF MARYLAND

BALTIMORE, MARYLAND, UNITED STATES

Houbing Herbert Song

Security and Optimization for

Support Provided

At the University of Maryland, NGI Enrichers Fellows benefited from access to leading research facilities, including the Security and Optimisation for Networked Globe (SONG) Lab, the NSF IUCRC for Aviation Big Data Analytics, and the CYBER-CARE Center for Transportation Cybersecurity. Fellows also engaged in valuable networking through the IEEE Trustworthy Internet of Things (TRUST-IoT) working group and received mentorship via the Graduate Student and Postdoctoral Development (GPSD) programme.

Key Takeaways

A key takeaway from the experience was the importance of navigating differences in EU and US approaches to research dissemination, particularly regarding regulatory compliance. The experience strengthened the host organisation's understanding of how to support international Fellows and contributed to an enriched transatlantic collaboration.

Success Stories Impact

NGI Enrichers Fellows contributed to impactful research and strengthened transatlantic collaboration in NGI technologies. NGI Fellow Nurcan Tüfekci conducted a project on "Virtual Privacy", resulting in submissions to leading IEEE conferences and journals. Additionally, the initiative led to the launch of the NGI Sargasso project VeriRecruit: AI-Driven Interview Analysis for Precision Hiring, in collaboration with Fellow Fernando José Gómez Gil. The NGI Enrichers programme has fostered transatlantic cooperation across idea development, data collection, experimental design, and performance evaluation, laying the groundwork for ongoing collaborative innovation in human-centric Internet research.

The exchange was an extraordinary opportunity to collaborate with professionals from diverse backgrounds. I am actively exploring further projects with them, building on the strong foundation established during the exchange.

- Nurcan Tüfekci

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