International Eurasian Laboratory (IEL)

A CORE Academy Initiative for Eurasia and the Wider World

Initiative Brief for Fellows, Partners, and Prospective Collaborators

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This document presents the vision, emerging footprint, priority areas, current development direction, and future architecture of the IEL. It is intended to support dialogue with Fellows, partner institutions, research organizations, and prospective collaborators who may wish to participate in, support, and help build the IEL initiative.

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Building a Platform for Science Across Eurasia and Beyond

The International Eurasian Laboratory (IEL) is a major initiative of CORE Academy, the International Core Academy of Sciences and Humanities, to advance scientific cooperation, interdisciplinary research, and innovation-oriented collaboration across Eurasia and for the wider global community. It is being developed not simply as a single-site laboratory, but as an open international platform and evolving institutional framework through which knowledge, institutions, and talent may be brought together in the service of discovery, responsibility, and the common good.

In an age marked by technological acceleration, geopolitical fragmentation, ecological strain, and profound civilizational transition, the need for serious international cooperation in science has become more urgent than ever. Many of the defining questions of our time, from energy transition and artificial intelligence to food systems, strategic resources, sustainability, and the governance of emerging technologies, cannot be addressed within narrow disciplinary or national boundaries. They require a broader architecture of cooperation: one that is intellectually rigorous, internationally connected, and capable of linking scientific excellence with long-term human need.

That is the larger horizon within which the International Eurasian Laboratory is being built. For CORE Academy, IEL represents a practical and long-term effort to create new channels through which frontier research, institutional cooperation, and public-minded innovation may develop together across regions. It is intended to support not only scientific exchange, but also durable collaboration, shared capacity-building, and more meaningful connections between knowledge and real-world application.

Rooted in the Mission of CORE Academy

The vision of IEL grows directly from the mission of CORE Academy. As an academy dedicated to the sciences and humanities, and to the advancement of knowledge for humanity, we have long believed that scholarship must be international in outlook, interdisciplinary in method, and human in purpose. With more than 200 elected Fellows and over 500 members across more than 50 countries and regions, CORE Academy brings together a growing international community devoted to scholarly excellence, intellectual exchange, and the public value of knowledge.

We are committed not only to academic excellence, but also to the building of institutions, networks, and platforms through which knowledge may circulate more widely, collaboration may deepen more meaningfully, and research may contribute to a wiser, more cooperative, and more forward-looking world.

IEL is a natural extension of that mission. It reflects our conviction that international scientific cooperation should not be reduced to short-term projects or transactional exchange alone. It should also help cultivate durable academic relationships, support younger generations of scholars, encourage the responsible application of knowledge, and create new forms of dialogue between science, society, and the human future.

Because CORE Academy brings together scholars across the natural sciences, engineering, mathematics and information sciences, the social sciences, and the humanities, we are especially well placed to support an initiative of this kind. The future will not be shaped by technological progress alone. It will also depend on how scientific work is governed, interpreted, communicated, and integrated into broader human, institutional, and civilizational contexts. In this respect, IEL is intended not only as a research platform, but also as a framework through which excellence in scholarship, international cooperation, and long-term public purpose may be brought into closer

alignment. One of IEL's distinctive strengths is that it is being shaped within an academy devoted to both the sciences and the humanities, a setting that allows scientific ambition to remain connected to ethical reflection, institutional responsibility, and broader human purpose.

Origins, Emerging Footprint, and Next-Phase Development

The earliest formal step toward the establishment of the International Eurasian Laboratory was taken in November 2025, when CORE Academy and the Institute of Physics under the Ministry of Science and Education of the Republic of Azerbaijan entered into strategic cooperation to initiate the Laboratory. This gave IEL its first institutional foothold in Baku, where an initial base for collaboration and future development is already taking shape. The Baku site has entered a phase of renovation and upgrading as part of the Laboratory's early institutional development.

From the outset, however, IEL has been conceived not as a bilateral undertaking alone, but as a broader initiative of CORE Academy, designed to grow through international cooperation, multi-institutional participation, and shared development across regions and disciplines. Additional cooperation with scientific partners, including in artificial intelligence and information technology, has further strengthened the Laboratory's practical foundations and broadened its international direction.

In the next phase of development, IEL is expected to establish a further operational presence in China, with locations under consideration including Urumqi, Shanghai, Shenzhen, and Hong Kong. This next stage will build on CORE Academy's expanding network of scientific centers and collaborative research platforms, enabling IEL to develop through both a principal base and a broader institutional ecosystem. Different locations may gradually assume distinct yet complementary roles in scientific exchange, thematic research, engineering validation and translation, institutional coordination, and partnership-building, while remaining connected within a shared international framework. Over time, we expect this model to support additional IEL-linked centers, laboratories, and collaborative nodes in other countries and regions as the initiative grows through shared participation and sustained international cooperation.

At this stage, IEL is best understood as a formative but active initiative. Its first institutional foundations are already being laid in Baku, while its next-phase presence in China and its broader international architecture continue to take shape through consultation, partnership-building, and shared planning. This is precisely why the present moment is an important one for dialogue with Fellows and partner institutions, whose participation can help shape the Laboratory's early priorities and practical forms of development.

What We Seek to Build

Our ambition for the International Eurasian Laboratory is both practical and far-reaching. We seek to build a platform that can support joint research, talent cultivation, scientific exchange, technology translation, and institutional cooperation across a region of growing global significance. We seek to connect universities, academies, research institutes, laboratories, scientific centers, and public-minded innovation partners in ways that generate real intellectual and societal value.

At the same time, IEL is intended to become far more than a collection of individual projects. It is being developed as an open and evolving framework through which joint laboratories, research centers, thematic programs, scientific platforms, and collaborative initiatives may gradually be established across different regions and fields. New nodes of cooperation may emerge across disciplines, geographies, and institutional settings as the initiative grows.

In this respect, the Laboratory is not only about advancing science within Eurasia, but also about helping to shape wider models of cooperation, connectivity, responsible knowledge-sharing, and open scientific exchange that may be relevant far beyond the region. Our hope is that IEL will contribute to a more connected landscape of global knowledge, in which frontier research, international collaboration, and cross-cultural intellectual exchange may serve not only development, but also trust, dialogue, and the common good.

Priority Areas of Cooperation

As currently envisioned, the International Eurasian Laboratory will develop around six major and interconnected areas of cooperation.

1. Green Energy, Climate Resilience, and Sustainable Transformation

Energy transition is one of the defining challenges of the twenty-first century. Across Eurasia and beyond, it is closely tied to industrial development, ecological responsibility, and long-term strategic resilience. IEL will support research and collaboration in green energy systems, low-carbon transformation, green hydrogen, sustainable fuels, energy efficiency, and related engineering and policy frameworks, while also encouraging pathways that connect scientific research with industrial application and broader social transition.

2. Artificial Intelligence, Computing, and Digital Infrastructure

Artificial intelligence is reshaping science, industry, governance, and everyday life. IEL will promote cooperation in AI, high-performance computing, data science, digital infrastructure, intelligent systems, multilingual technologies, and AI for Science. This may include shared digital platforms, collaborative research tools, scientific translation technologies, and data-enabled systems that strengthen research capacity across borders, with due attention to responsible use, broad accessibility, and long-term public value.

3. Intelligent Equipment, Advanced Manufacturing, and Industrial Innovation

IEL will encourage cooperation in intelligent equipment, advanced industrial systems, smart mobility, logistics technologies, and next-generation manufacturing. This includes the wider ecosystem linking engineering design, testing, standards, pilot-scale validation, and cross-border industrial application. The aim is to create conditions in which scientific knowledge can move more effectively into real systems, real infrastructure, and real economic transformation.

4. Smart Agriculture, Food Security, and Bio-Innovation

Food systems are becoming increasingly vulnerable to climate stress, water constraints, ecological disruption, and geopolitical uncertainty. IEL will therefore support research and implementation-oriented cooperation in smart agriculture, precision farming, water-efficient systems, crop science, agricultural sensing, AI-enabled decision-making, and bio-innovation. Particular attention will be given to approaches that combine technological sophistication with practical adaptability, so that research can contribute to food security, rural resilience, and sustainable development across diverse environments.

5. Advanced Materials, Earth Sciences, and Deep-Earth Science

A major strength of IEL lies in its ability to connect materials science, geoscience, and strategic-resource research. In addition to advanced materials and their applications, the Laboratory will support cooperation in earth sciences and deep-Earth science, including geological data platforms, deep-Earth observation, geophysical investigation, scientific drilling, strategic mineral systems, and the interpretation of complex subsurface environments. This field matters not only for fundamental knowledge, but also for energy, resources, infrastructure, resilience, and the scientific understanding of the planet itself.

6. Science Governance, Knowledge Exchange, and Cross-Disciplinary Innovation

The future of science depends not only on discovery itself, but also on the institutions, norms, and public frameworks through which knowledge is organized, evaluated, shared, and translated into society. For that reason, IEL will also promote cooperation in science governance, research policy, knowledge exchange, and cross-disciplinary innovation, while encouraging meaningful dialogue across the sciences, engineering, the social sciences, and the humanities. This area provides an important space for scholars from different fields to contribute to questions of academic governance, institutional design, scientific responsibility, international cooperation, and the broader human significance of science and innovation. Through it, IEL seeks to foster not only interdisciplinary research, but also more thoughtful, responsible, and human-centered forms of scientific and technological development.

A Growing Community of Support

The International Eurasian Laboratory is moving from concept into practical development and is already drawing interest, encouragement, and constructive engagement from a growing circle of scholars and institutions.

This includes, among others, colleagues and institutional communities associated with Shanghai Jiao Tong University, Xi'an Jiaotong University, and the Institutes of the Chinese Academy of Sciences, alongside international partners and research communities across Eurasia. We warmly welcome further support from Fellows, universities, academies, laboratories, research centers, public-interest institutions, and innovation partners who share our commitment to academic excellence, open collaboration, and the long-term public value of knowledge.

An Invitation to Fellows and Partners

For CORE Academy, IEL is not merely an initiative to be announced. It is a platform to be built, enriched, and shaped together.

For Fellows of CORE Academy, there are several meaningful pathways for engagement. Some may contribute through academic leadership by helping to refine thematic priorities, shape early-stage agendas, or serve as scientific advisors to emerging areas of cooperation. Some may contribute more directly through research participation by proposing projects, leading working groups, joining joint laboratories or research centers, or helping guide first-phase collaborative programs. Others may contribute through institutional linkage by introducing partner universities, academies, laboratories, or research teams, and by helping to foster co-developed platforms, talent exchange, and longer-term academic cooperation.

In this sense, Fellows are invited not only to support IEL in principle, but also to help shape its substance, direction, and first generation of practical outcomes.

Partner institutions are likewise invited to participate through collaborative research, co-development of platforms and programs, shared facilities and resources, talent exchange, and other forms of long-term institutional cooperation. They may support the initiative by co-establishing joint laboratories, research centers, and innovation platforms; launching collaborative research projects and thematic programs; contributing facilities, data resources, visiting scholars, and early-career researchers; and working with IEL to advance talent development, technology transfer, and the adaptation of research to different regional contexts.

In this way, IEL is intended to become far more than a symbolic network. It is envisioned as a living platform for co-creation, shared leadership, and durable international cooperation, one in which ideas can be developed, institutions can work together with purpose, and knowledge can move more effectively from scholarship to wider impact.

Looking Ahead

The International Eurasian Laboratory remains in a formative stage, but its direction is already clear. We are building it as a serious, open, and forward-looking platform for scientific cooperation across Eurasia and for the wider world, one that brings together research, innovation, dialogue, and institutional partnership in the service of a larger common good.

If developed successfully, IEL will stand as more than a new initiative. It will serve as an enduring bridge between regions and civilizations, between disciplines and applications, between established excellence and emerging talent, and between the pursuit of knowledge and the responsibilities that accompany it. Our hope is that it will become a platform where concrete cooperation is sustained by trust, where ideas can be developed into programs and partnerships, and where the work of scholars and institutions contributes not only to scientific progress, but also to a more connected and constructive future.

Contact

For academic cooperation, institutional dialogue, or expressions of interest regarding the International Eurasian Laboratory, please contact the Secretariat of CORE Academy at secretariat@coreacad.org. For further information about CORE Academy and the IEL initiative, please visit the Academy's official website and the relevant IEL initiative page.

Prepared for outreach and dialogue with Fellows, academic partners, research institutions, and prospective collaborators.