

## Call for Applications: International Cross-disciplinary Fellowship Program on "Elucidating the Origins of the Universe through Neutrinos"

This Japan-based international research project, **Elucidating the Origins of the Universe through Neutrinos**, is funded by MEXT, Japan, through the Grant-in-Aid for International Joint Research Acceleration Fund and began in 2024. It explores the evolution of the universe from the 'quantum fluctuations' of the early universe by combining the microscopic approach of particle physics with the macroscopic approach of astrophysics. Key research topics include inflation, the nature of dark matter, the origin of matter-antimatter asymmetry, and the evolution of massive black holes.

This pioneering international collaboration brings together experimental and theoretical researchers from leading neutrino experiments such as [the Hyper-Kamiokande experiment](#), [the Simons Observatory for cosmic microwave background radiation](#), [the XENON dark matter direct detection experiment](#), and [the IceCube neutrino observatory](#). For more details, please visit: <https://www-he.scphys.kyoto-u.ac.jp/nuintadv/en/overview.html>.

To foster early-career researchers with broad perspectives and international research capabilities, we are introducing a cross-disciplinary fellowship program. This program offers researchers diverse experiences across multiple fields, helping them transition into new areas beyond their doctoral research. Successful candidates will play a central role in advancing key research activities within these international projects while actively contributing to its broader initiatives. Fellows will also receive a research budget of up to 1,000,000 JPY per year.

1. Number of Positions: Several fixed-term research fellow positions
2. Host Institutions and Supervising Researchers: Fellows will be affiliated with a research institution participating in one of these international collaborations or related theoretical work. A list of eligible host PIs and institutions can be found at: <https://www-he.scphys.kyoto-u.ac.jp/nuintadv/en/fellowship.html>.
3. Research Areas: Successful candidates will engage in one of the following research areas within the international collaborations:  
The Hyper-Kamiokande experiment, Observations of the early universe with cosmic microwave background telescopes, The XENONnT dark matter direct detection experiment and future direct dark matter searches, The IceCube neutrino observatory and its future projects, Theoretical research in particle physics, astroparticle physics and cosmology. For more details, please refer to:

<https://www-he.scphys.kyoto-u.ac.jp/nuintadv/en/fellowship.html>.

4. Appointment Duration: The fellowship may be renewed annually based on an evaluation at the end of the Japanese fiscal year, for a maximum term of up to three years from the start date.

5. Employment Conditions: Employment terms will follow the regulations of the respective host institution. For details, please consult the host researcher.

6. Eligibility Criteria: Applicants must meet the following requirements:

- 1) Hold a PhD or be expected to obtain one by the appointment start date.
- 2) Have no primary employment or student status at the time of appointment.
- 3) Be an early-career researcher (typically within two years of earning a PhD) seeking to broaden their research perspective by working in a field or experiment distinct from their doctoral studies.

7. Expected Start Date: as early as possible after July 1, 2025.

8. Application Documents: Applicants should submit the following documents via email:

- ① CV (including expected start date)
- ② Summary of past research experience (approximately 2 pages, A4)
- ③ List of research achievements (peer-reviewed papers, conference proceedings, oral presentations, awards, external funding, etc.)
- ④ Up to three representative publications (PDFs)
- ⑤ Expected host researcher and affiliated institute
- ⑥ Research plan (approximately 2 pages, A4), including a discussion on how the proposed research differs from the applicant's previous work and their motivation for transitioning to a new research area.
- ⑦ Contact details of two referees who can provide reference letters.

9. Application Deadline: June 9th, 2025 Monday (12:00 JST)

10. Submission and Contact Information: Applications should be sent to: [kokusen\_apply\_at\_hep.scphys.kyoto-u.ac.jp] (replace “\_at\_” by “@”) with Subject: "International Fellowship Application: Neutrino Research".

Applicants will receive an acknowledgment email within three days. If no confirmation is received, please contact the address shown above.

For inquiries about this application, please contact the address above. For detail of research, please consult the expected host researcher.

#### 11. Selection Process:

Applications will be reviewed based on submitted documents. If deemed necessary by the selection committee, interviews may be conducted before making final decisions on acceptance. Additional selections may be required depending on a host institute.

#### 12. Additional Information:

- 1) All personal information submitted in relation to this application will be used solely for the purpose of selection. After the selection process concludes, all personal data, except for that of the successful candidates, will be responsibly disposed of.
- 2) Applicants may be required to comply with relevant security regulations, including those related to the provision of confidential information under the Foreign Exchange and Foreign Trade Act (FEFTA). Specific requirements may vary depending on the host institution.