

# FY2023 Information Technology Center, The University of Tokyo Application Requirements for “Recommendation Program for Young Researchers and Woman Researchers”

## Overview

The Information Technology Center, The University of Tokyo (hereafter, “the Center”) offers a public recruitment program that is open to young researchers (40 years or younger as of April 1, 2023), woman researchers or students to conduct research utilizing large computational resources such as supercomputers and data platforms. The center is calling for research proposals for FY 2023. Upon screening by the Center’s faculty members, several dozen outstanding research proposals will be selected during the year. Selected research projects can use the Center’s computational resources at no charge.

The Center offers general and intern programs. The general program accepts applications for the first half and the second half of the year. The intern program assumes mainly summer-term use targeting students in undergraduate and graduate programs. In both programs, only personal research applications are accepted.

The general program selects outstanding projects, which fulfill the criteria as Exploratory Joint Research Projects under Joint Usage/Research Center for Interdisciplinary Large-scale Information Infrastructures (JHPCN), the Center plans to recommend them to JHPCN as Exploratory Joint Research Projects. If selected as a JHPCN Exploratory Joint Research Project by the JHPCN’s Screening Committee for Joint Research Projects, a presentation opportunity may be provided at the JHPCN annual symposium in July. After completion, we have high expectations that the projects will develop into full-fledged joint research projects (general, international, and industrial theses), which expand on the original exploratory research based on the obtained research achievements. Please note that the selected projects in the intern program will not be recommended as a JHPCN Exploratory Joint Research Project.

## FY2023 Dates for open calls

### 1) General program

	Application period	Notification of adoption	Period of use*
First half term	Friday, January 20, 2023 9:00 – Tuesday, February 21, 2023 17:00 (strict deadline)	Mid-March	[six months] Saturday, April 1, 2023 – Saturday September 30, 2023 [twelve months] Saturday, April 1, 2023 – Sunday, March 31, 2024
Second half term	Tuesday, July 25, 2023 9:00 – Tuesday, August 29, 2023 17:00 (strict deadline)	Mid-September	[six months] Sunday, October 1, 2023 – Sunday, March 31, 2024

## 2) Intern program for students in undergraduate and graduate programs

Application period	Notification of adoption	Period of use*
Tuesday, June 6, 2023 9:00 – Tuesday, July 4, 2023 17:00 (strict deadline)	Mid-July	[six months] Tuesday, August 1, 2023 – Wednesday, January 31, 2024

\* Maintenance may render a computer system inaccessible during the use period.

### Application eligibility

The project representative must satisfy criteria 1–3:

1. The project representative must be either a staff, faculty member, researcher, or student (undergraduate or graduate) who belongs to a Japanese university or public organization, or a researcher who belongs to a Japanese private corporation. A student applicant must receive approval from his/her supervisor. A researcher in a corporation must receive approval from his/her supervisor.
2. The project representative must be a young researcher (40 years or younger as of April 1, 2023), a woman researcher (all ages), or a student (all ages).
3. The project representative must be a resident as defined by the Foreign Exchange and Foreign Trade Act as of the start date of the research project.

For the intern program, in addition to the above criteria, the project representative must fulfill criterion 4:

4. The applicant must be either an undergraduate or graduate student (master's or doctoral).

### Application criteria

1. Research projects must be for academic purposes and contribute to the field of large-scale high-performance computing or data science/data usage.
2. Projects must be conducted by a solo researcher.
3. Applications must not overlap research periods under this recommendation program. (e.g. If the application is adopted for **General program (First half term)** (12 months), he/she cannot apply for the Intern program or **General program (Second half term)**.)

For the general program, in addition to the above criteria, the project representative is expected criterion 4:

4. Upon completion, based on feedback and the achievements attained, the original exploratory research should develop into a full-fledged joint research project at JHPCN.

### Available amounts of computational resources

The computational and other resources for use are listed below. The Center covers all associated fees, including additional disk usage. As for adopted projects, the project representatives can use resources free of charge.

Up to the maximum available tokens (as shown in the table below) can be used in Wisteria/BDEC-01 Odyssey, and Wisteria/BDEC-01 Aquarius. Please note that the maximum available tokens change based on the usage period. Additional disk capacity can be added to these systems.

The unit for Wisteria/BDEC-01 Odyssey use is a node. The table below shows the token consumption coefficient for one node. In a system with a token consumption coefficient  $\alpha$  for one node, if  $X$  nodes are used for  $T$  hours, the required number of tokens is  $X \cdot T \cdot \alpha$ .

The unit for Wisteria/BDEC-01 Aquarius use is 1 GPU. The table below shows the token consumption coefficient for 1 GPU. In a system with a token consumption coefficient  $\alpha$  for 1 GPU, if  $X$  GPUs are used for  $T$  hours, the required number of tokens is  $X \cdot T \cdot \alpha$ . If you use one node, the number of tokens must include all GPUs on one node.

As for mdx, users can request the mdx computing resources (refer to the table below for the application unit of vCPUs, GPUs, virtual disk, and storages) with the allocated mdx points. A maximum of 3 projects will be selected for the year. The center will cover 500,000 points for each half-year (1 point = 1 yen, 1,000,000 yen per year) for all selected mdx projects in total. This budget (1,000,000 yen per year) is called the common budget. At first, 50,000 points will be allocated to each project, and all adopted projects will share the remaining common budget. Moreover, additional points will be periodically allocated to each project from the common budget; however, if the common budget runs out, no more points will be allocated. Also, please note that when the mdx points allocated to each project are exhausted, even if the research period is left, the project will be terminated. No additional points can be purchased by users.

Wisteria/BDEC-01 Odyssey	<p>For six months: equivalent to two sets</p> <p>Usage fees: equivalent to 90,000 yen</p> <p>Maximum tokens available: 8,640</p> <p>Maximum number of parallel execution nodes: 2,304</p> <p>Token consumption coefficient: 1.00 (per node)</p> <p>Disk capacity: 4 TB</p> <p>For twelve months: equivalent to two sets</p> <p>Usage fees: equivalent to 180,000 yen</p> <p>Maximum tokens available: 17,280</p> <p>Maximum number of parallel execution nodes: 2,304</p> <p>Token consumption coefficient: 1.00 (per node)</p> <p>Disk capacity: 4 TB</p> <p>○ Additional disk capacity</p> <p>Usage fees: 3,240 yen per 1TB for 6 months</p> <p>Usage fees: 6,480 yen per 1TB for 12 months</p> <p>For more details, please refer to</p> <p><a href="https://www.cc.u-tokyo.ac.jp/en/supercomputer/wisteria/system.php">https://www.cc.u-tokyo.ac.jp/en/supercomputer/wisteria/system.php</a></p>
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Wisteria/BDE C-01 Aquarius	<p>For six months: equivalent to three sets Usage fees: equivalent to 135,000 yen Maximum tokens available: 12,960 Maximum number of parallel execution GPUs/nodes: 64 GPUs/8 nodes Token consumption coefficient: 3.00 (per GPU)* Disk capacity: 6 TB</p> <p>For twelve months: equivalent to three sets Usage fees: equivalent to 270,000 yen Maximum tokens available: 25,920 Maximum number of parallel execution GPUs/nodes: 64 GPUs/8 nodes Token consumption coefficient: 3.00 (per GPU)* Disk capacity: 6 TB</p> <p>○ Additional disk capacity Usage fees: 3,240 yen per 1 TB for 6 months Usage fees: 6,480 yen per 1 TB for 12 months</p> <p>For more details, please refer to <a href="https://www.cc.u-tokyo.ac.jp/en/supercomputer/wisteria/system.php">https://www.cc.u-tokyo.ac.jp/en/supercomputer/wisteria/system.php</a></p> <p>* 8 GPUs are mounted on one node. If you are using the entire node, count the tokens for all 8 GPUs. Therefore, the token consumption coefficient for one node is 24.0.</p>
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#### mdx

mdx	<p>The resource application units are as follows:</p> <ul style="list-style-type: none"> <li>General-purpose (CPU) node: 1 CPU pack (1 core (vCPU), approx. 1.5 GB memory)</li> <li>Compute-accelerated (GPU) node: 1 GPU pack (1 GPU + 18 cores (vCPU), approx. 57 GB memory)</li> <li>1 GB of virtual disk</li> <li>1 GB of high-performance internal storage</li> <li>1 GB of high-capacity internal storage</li> <li>1 GB of object storage</li> <li>1 global IP address</li> </ul> <p>For more details about mdx specifications, please refer to <a href="https://mdx.jp/about/system">https://mdx.jp/about/system</a></p> <p>About resource allocation application:</p> <ul style="list-style-type: none"> <li>The range of resources available in the entire mdx. Users apply for the amount of resources they need within the range of available resources in the entire mdx, and when they are no longer needed, they are released. However, the application may be rejected after taking into account the amount of available resources for the entire</li> </ul>
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	<p>mdx and the shared budget, and the amount of resources allocated to each project may be reduced during use if the overall amount of resources is tight. In this case, users will be notified in advance by e-mail or other means.</p> <ul style="list-style-type: none"> <li>▪ Guaranteed startup VM is applied for in advance through the Project Application Portal or User Portal. No application is required for spot VM resources (specified at the time of spot VM use).</li> </ul>
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### Reporting research achievements

1. You must submit a research report within one month of project completion.
2. You must write an article related to the achievements of your research (6 – 8 pages long in an A4 size document) for the Center's publications such as *Supercomputing News*. The manuscript submission is due approximately three months after project completion. The due date can be extended up to two years after project completion for reasons related to publishing a research paper.
3. Upon completion, you must present your research in a results presentation session, which also acts as a social event among users and between users and the Center. The results presentation session for the projects selected in FY2023 is planned for June 2024. In principle, travel expenses to the presentation venue for one person per project are provided in accordance with the regulations of The University of Tokyo.
4. If the achievements of research conducted under this program are published in an academic journal or other medium, clearly state that the computer system use was provided through the Recommendation Program for Young Researchers and Woman Researchers offered by Information Technology Center, The University of Tokyo. Submit a list of achievements to the Research Support Team.
5. If your project is selected as an Exploratory Joint Research Project by JHPCN, you may be invited to present a poster of your research plans or achievements during the JHPCN symposium held annually in July. Whether research plans or achievements are included in the presentation poster depends on the selection timing of your project. (In such cases, travel expenses are paid.)
6. You may be asked to present in seminars, workshops or other events organized or co-hosted by the Center.

### Screening projects

1. Projects are selected by the faculty members of the Center via a document screening.
2. Several dozen outstanding research proposals will be selected during the year.
3. The Center plans to recommend exceptional projects selected under the general program that fulfill the criteria as an Exploratory Joint Research Project under JHPCN to JHPCN as Exploratory Joint Research Projects.

### Selection criteria

1. We actively select proposals that are expected to create academically impactful research achievements through the utilization of the computer systems offered by the program.
2. We welcome proposals related to software development that should help improve the usage environment such as that of supercomputers.
3. We welcome proposals that require beyond the present environment and aim to utilize advanced future supercomputer environments.
4. As for the use of mdx, we particularly welcome diverse research in data science and data utilization, including the collection and maintenance of diverse data across science, engineering, humanities, and liberal studies; data sharing and platform maintenance in research communities; and data analysis utilizing advanced methods in data science such as machine learning.

### **Miscellaneous**

For the projects selected under the intern program, faculty members from the Center will participate as joint researchers to provide technical and academic assistance.

### **Application method**

\* Please adhere to the application steps to ensure submission via the website.

\* Please use the latest version of the application.

<Application steps>

1. Obtain an application number from the website.
  - i. The application is accessible at the following URL:
    - \* Application number page for “Recommendation Program for Young Researchers and Woman Researchers”.  
[https://regist.cc.u-tokyo.ac.jp/webform/wakate/issue\\_form.php](https://regist.cc.u-tokyo.ac.jp/webform/wakate/issue_form.php)
  - ii. Enter all necessary information and click the “Get an application number” button.
  - iii. The application number will be sent to the provided email address.
    - \* Please retain the application number as it is used for further processing.
2. Complete application form B.
  - i. Download application form B (Word file).
  - ii. Complete application form B and save as a PDF file.  
 (Application form B requires you to enter details such as the purpose and plans for use)
3. Apply through the website.
  - i. Access the following URL to complete the application.
    - \* Application page for “Recommendation Program for Young Researchers and Woman Researchers”.  
[https://regist.cc.u-tokyo.ac.jp/webform/wakate/application\\_form.php](https://regist.cc.u-tokyo.ac.jp/webform/wakate/application_form.php)  
 (The application requires details such as project representative information and an abstract of a research project.)
  - ii. Submit your application along with the application form B (PDF file).

iii. An automated reply will be generated to confirm receipt of your application.

(For your reference, a copy of your application forms A and B are attached.)

\* The use of supercomputers and data platforms requires approval from your supervisor, which is a supervisor for students or your direct supervisor for those belonging to a corporation. Upon submission of your application, an approval confirmation email is sent to your supervisor's email address listed in the application. The application process is complete once your supervisor provides approval.

**Inquiry**

Research Support Team, Information Strategy Group, Information Systems Department, The University of Tokyo

E-mail: [koubo@cc.u-tokyo.ac.jp](mailto:koubo@cc.u-tokyo.ac.jp) (Please write “young/woman” in the subject line.)