

FY2023 US Japan Program for Cooperation in High Energy Physics

45th Meeting of the US-Japan
Science and Technology Cooperation Program
on High Energy Physics
May 22-23, 2023

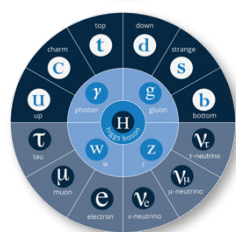
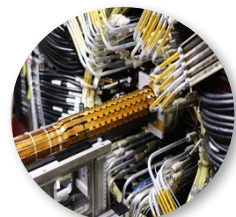
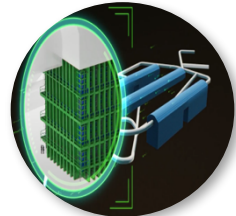
Glen Crawford, Derun Li, and Brian Beckford

Office of High Energy Physics
U.S. Department of Energy



U.S. DEPARTMENT OF
ENERGY

Office of
Science



Academic Path

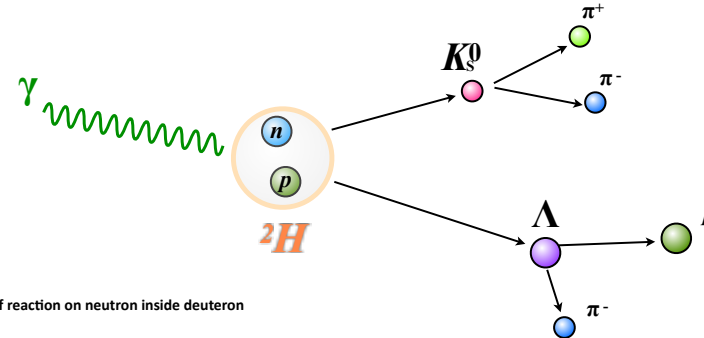


東北大学



PhD Tohoku University (ELPH)

Strangeness photoproduction: $\gamma d \rightarrow K^0 \Lambda p$ and $\gamma d \rightarrow K^+ \Lambda n$



Master's Florida Intl. (EPLH)



Bachelor's Florida Intl (KEK)



Design and Architecture Senior High (Industrial Design)



Professional Path



U.S. DEPARTMENT OF
ENERGY

Office of Science



2020—Physicist, Office of High Energy Physics (HEP), Office of Science, Dept. of Energy

- Intensity Frontier Program Manager
- US-Japan Research Program
- RENEW-HEP Initiative

2019—2020

Asst. Research Scientist, University of Michigan

- Flavor physics on rare processes (JPARC)

2017—2019

President's Postdoctoral Fellow, University of Michigan

- Flavor physics on rare processes (JPARC)

2015—2017

Postdoctoral Fellow, University of Michigan

- Flavor physics on rare processes (JPARC)

2013—2015

Bridge Program Project Manager, Dept. of Education and Diversity, American Physical Society (APS)

- APS Bridge Program - National effort to increase the number of PhD earned by underrepresented students in physics.

Background

■ History:

- At the 38th (2016) US-Japan Joint Committee meeting, DOE proposed to contribute financially to the support of US-Japan cooperative activities.
 - Such funding would make the US and Japan more balanced partners within the Program
 - Additional support for US HEP investigators would strengthen continuing and new cooperative activities between US and Japan.
- ▶ Up to \$2M/year would be allocated by DOE/HEP for support for the Program.
- ▶ In FY 2017, a lab call and a university call were announced, via National Laboratory Announcement (**NLA**) and Funding Opportunity Announcement (**FOA**), respectively.
- ▶ Proposal calls were announced simultaneously in the U.S. and in Japan. The number of university grants was small, but required high administrative efforts.
- Starting in FY 2018, only NLA was issued. Universities participate as subcontractors.

FY2023 Solicitation

■ Program Objectives:

- To support U.S. investigators in bilateral cooperative research activities as part of the U.S.-Japan Science and Technology Cooperation Program in High Energy Physics. This NLA solicits proposals with scopes of work in HEP that involve substantial collaboration with Japanese investigators.

■ Research Activities Supported

- High energy physics experiments
- Development of accelerator technology
- Development of detectors for high energy physics experiments
- Workshops, conferences and/or travel support to incubate and develop new accelerator, detector and experiment concepts.

■ Limitation of Support

- ILC cost-reduction R&D is excluded (activities supported with separate funds.)
- Must involve significant collaboration between U.S. and Japanese investigators.
- Support will be provided for cooperative R&D activities only.
- No scientific staff support (except travel). Theoretical research is not supported

FY2023 US-JAPAN SCIENCE AND TECHNOLOGY COOPERATION PROGRAM IN HIGH ENERGY PHYSICS

- **Scope:** Since FY2018 the call in the US has been issued via a National Laboratory Announcement(NLA)
- The announcement solicits proposals with scopes of work in high energy physics (HEP) that involve substantial collaboration with Japanese investigators
- The NLA supports U.S. investigators in bilateral cooperative research activities as part of the US-Japan Science and Technology Cooperation Program in High Energy Physics.

- **Application Requirements:**
 - **Eligible Institutions: DOE National Laboratories only.**
 - Anticipated award size: ~\$20,000 - \$500,000
 - Not required: Cost sharing or letters of Intent
 - All compliant proposals were subjected to scientific merit review (peer review). A US-Japan Subpanel, consisting of US DOE and Japan KEK members, is convened to prioritize and recommend proposals for an award. Funding decisions were based upon peer review and panel priority recommendations.

- **Proposals Submitted to: DOE Office of Science's Portfolio Analysis And Management System (PAMS)**
- **University Participation: Via a subaward as part of the national lab proposal.**

Timeline:

- **Solicitation: DE-LAB 23-2858 issued: October 17, 2021**
- **Final Proposal deadline: Dec 15, 2022 17:00 (EST)**
- **Review process:-Jan to end-March 2023**
- **Joint Panel Meeting: April 19-20, 2023**

FY23 Submitted US Japan Proposals

Fiscal Year	FY23 (\$M)	FY24 (\$M)	FY25 (\$M)	TOTAL (\$M)
Budget Requested	3.6	2.9	2.3	8.8
Initial Recommendation	1	.43	0.37	1.8

There are **19** proposals with requests between 1 and 3 years of funding, with total annualized budget requests:

The total requested budget for multi-year awards ~\$8.8 M

Majority of submitted proposals were for new research efforts ~90%

Most proposals were for Accelerator related R&D

Summary of Proposal topics of lead US PI are shown below:

DOE Lab	Proposal
BNL	3
FNAL	7
LLNL	0
ANL	3
LANL	1
LBNL	3
SLAC	2

Total Proposals	19	
Renewal	2	10%
New	17	90%

Research Topics

Tot # proposal	19
Accelerator	10
Intensity	2
Theory	0
Detector	4
Energy	1
AIML	2

PAMS: Scoring by Reviewers

In PAMS, we asked reviewers to provide absolute scores for each proposal on five criteria: *(see supplemental slides for full set of criteria)*

Scientific and/or Technical Merit of the Proposed Research

Appropriateness of the Proposed Method or Approach

Competency of Research Team and Adequacy of Available Resources

Reasonableness and Appropriateness of the Proposed Budget

Quality and Efficacy of the Promoting Inclusive and Equitable Research (PIER) plan

Balance between Responsibilities Between the U.S and Japanese Collaborators

Overall Summary of Proposal

The grading system for reviewer was :1→6 (Poor → Outstanding).

Table A: Scoring System Definition *(as per definition in PAMS).*

Qualifier	Poor [1-16%]	Fair [17-32%]	Good [33-49%]	Very Good [60-66%]	Excellent [67-82%]	Outstanding [83-100%]
Score	1	2	3	4	5	6

Review Process

Each proposal was assigned in PAMS to at least 2 external reviewers

- Reviewers were asked to assign scores :
 - ▶ 6,5: Very high priority \Leftrightarrow Strongly encourage funding.
 - ▶ 4,3: Medium to high priority \Leftrightarrow Encourage funding.
 - ▶ 2,1: Low priority \Leftrightarrow Discourage funding

Program Managers(PMS)—>Crawford, Li, Beckford, Marsiske (Detector), Love (AI/ML)

- PMs use the reviews and the scores to guide proposal selection for funding recommendation, taking into account the HEP programmatic priority for each proposal.

PMs prepare list of recommended and declined proposals, with review summaries, to share and discuss with PMs on the Japanese side

Funding, may be adjusted as needed to accommodate available budget

Joint Panel Meeting

U.S. Participants

Glen Crawford	Director, Research and Technology Division Office of High Energy Physics, DOE
Brian Beckford	Program Manager, Office of High Energy Physics, DOE
Derun Li	Program Manager, Office of High Energy Physics, DOE

Japanese Participants

Yasuhiro Okada	Executive Director, KEK
Kazunori Hanagaki	Deputy Director, Institute of Particle and Nuclear Studies, KEK
Tadashi Koseki	Director, Accelerator Laboratory, KEK

The Joint Review Panel aligns/adjusts award selection/funding as necessary to fit into available budget

JPM @ KEK, Tsukuba Japan

April 19, 2023

- 09:00 – 09:10 US proposal solicitation and evaluation process
- 09:10 – 09:20 Japan proposal solicitation and evaluation process
- 09:20 – 10:30 Consolidation process discussion
- 10:30 – 10:40 Coffee Break -
- 10:40 – 12:00 Proposal discussion and finalizing award selection and recommended funding
- 12:00 – 13:00 Lunch -
- 13:00 – 15:30 Continue discussion and finalizing award selection and recommended funding
- 15:30 – 15:40 Break -

Facility tour (120 min)

15:40 – 15:45 Transport to Tsukuba Experimental Hall by KEK bus

15:45 – 16:25 Belle II Experiment and SuperKEKB tour by (TBD)

- 16:25 – 16:30 Transport to Accelerator Test Facility (ATF) by KEK bus
- 16:30 – 17:00 ATF tour by (TBD)
- 17:00 – 17:05 Transport to Superconducting RF Test Facility (STF) by KEK bus
- 17:05 – 17:35 STF tour by (TBD)
- 17:35 – 17:40 Transport to Admin bldg. by KEK bus
- 17:40 *Adjourn*
- 18:00 *Depart from KEK for the dinner*
- 18:30 *Welcome Dinner*

JPM @ KEK, Tsukuba Japan

April 20, 2023

08:30 – 10:00 Continue discussion and finalizing award selection and recommended funding

10:00 – 10:30 Discussion on other businesses and JCM

10:30 – 10:45 - Break -

10:45 Depart from KEK for J-PARC

(ETA at the gate: 12:10, at the J-PARC Research bldg. 12:20)

12:20 – 12:25 Welcome Address by Dr. Takashi Kobayashi, Director of J-PARC

12:25 – 12:30 Remarks by Dr. Glen Crawford

12:30 – 13:30 - Lunch -

13:30 – 13:50 J-PARC overview by Dr. Takashi Kobayashi, Director of J-PARC

13:50 – 13:55 Discussion

13:55 – 14:10 - Photo Session -

Facility tour (140min)

14:10 – 14:20 Transport to Hadron Experiment facility by KEK bus

14:20 – 15:00 Hadron Experimental facility (KOTO, COMET) tour by (TBD)

15:00 – 15:10 Transport to Neutrino Experimental facility by KEK bus

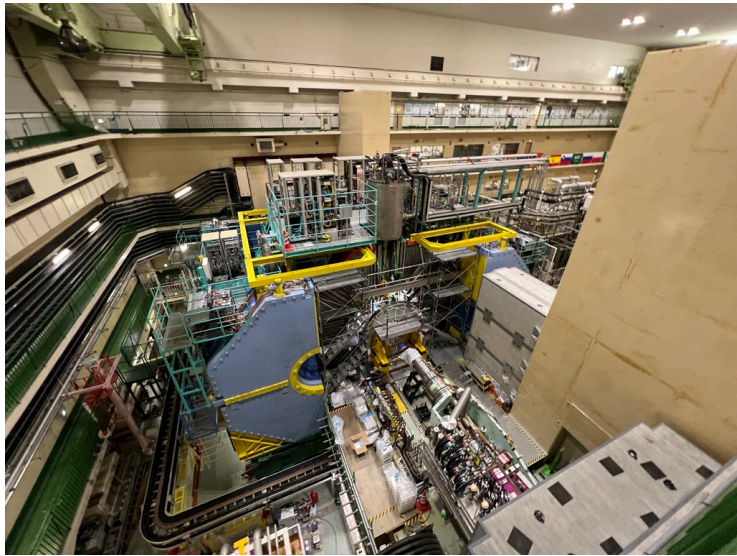
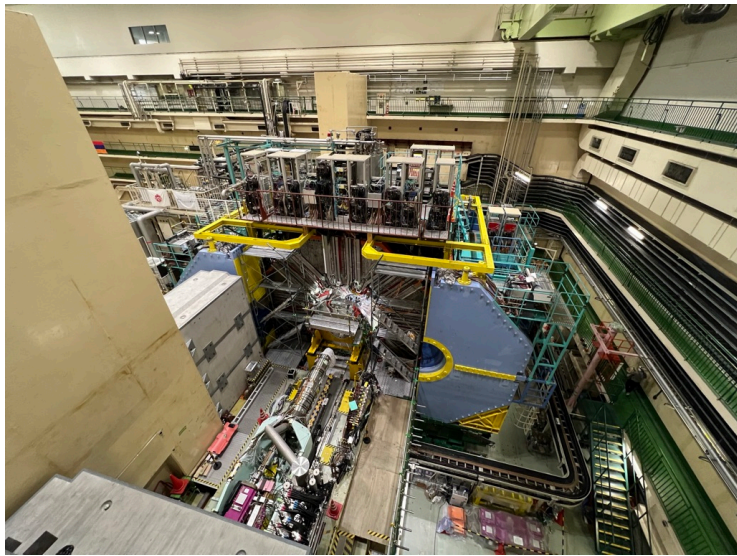
15:10 – 15:40 Neutrino Experimental facility (T2K) tour by (TBD)

15:40 – 15:50 Transport to Materials and Life Science facility by KEK bus

15:50 – 16:20 Materials and Life Science facility tour by (TBD)

16:20 – 16:30 Transport to J-PARC Research Bldg.

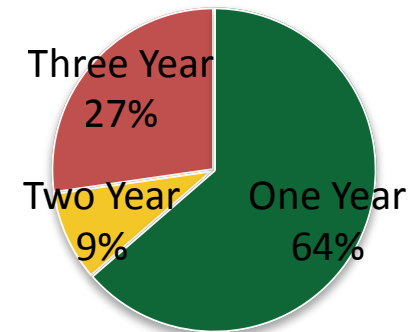
Tour Photos: Belle-II



Meeting outcomes

One proposal did not have a matching proposal submitted on the Japan side and would not be considered. Following the discussions on every proposal, we agreed on recommending 11/18 proposals, 61% success rate, for an award.

7 One year awards, 1 two year award, and 3 three year awards.



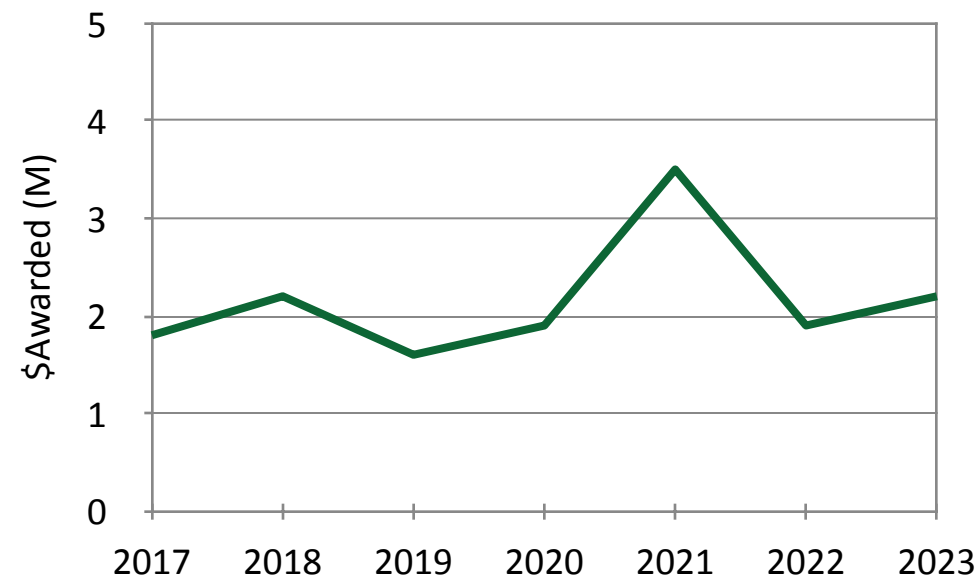
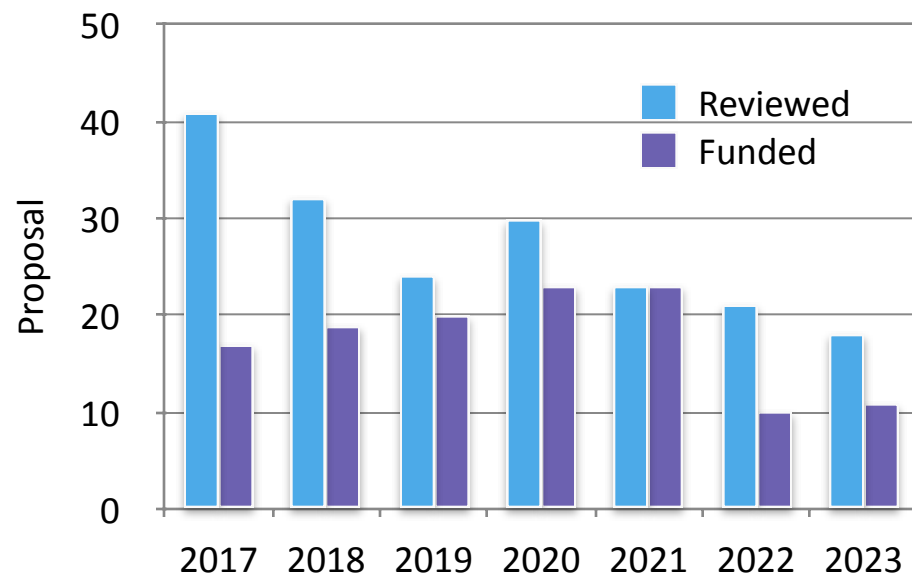
DOE Lab (Lead PI)	Supported Proposal	Percent %
BNL	1	9%
FNAL	5	45%
LLNL	0	0%
ANL	1	9%
LANL	1	9%
LBNL	1	9%
SLAC	2	18%

HEP Program	Supported Proposal	Percent %
Accelerator	7	64%
Intensity	1	9%
Theory	0	0%
Detector	2	18%
Energy	0	0%
AIML	1	9%

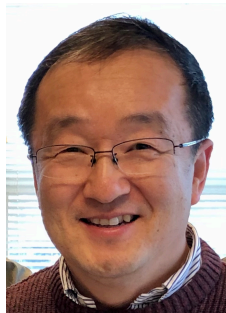
Fiscal Year	FY23 (\$M)	FY24 (\$M)	FY25 (\$M)	TOTAL (\$M)
Budget Requested	3.6	2.9	2.3	8.8
Recommendation	1.44	.43	0.37	2.2
	40%	15%	16%	25%

Funding statistics - US side

Year	#Proposal	#Reviewed	#Funded	\$ Requested	\$ Awarded	Total \$
2017	42	41	17	7.8M	1.8M	1.8
2018	33	32	19	6.2M	2.2M	2.2
2019	24	24	20	5.2M	1.6M	1.6
2020	30	30	23	5.5M	1.9M	1.9
2021	23	23	23	10.6M	1.9M +0.99M (yr2)+0.64M (yr3)	3.5
2022	21	21	10	11.3M	0.8M+0.66M (y2)+0.43M (yr3)	1.9
2023	19	18	11	8.8M	1.44M+0.43M (yr2)+0.37M (yr3)	2.2



HEP Program Staff responsible for Selections/Award and Management



Name	Position	Ph.D.	Joined HEP
Dr. Brian Beckford	Program Manager, Intensity Frontier & US Japan Research Program	2013, Tohoku University	2020
Dr. Glen Crawford	Director, Research and Technology Division, Office of High Energy Physics	1991, Cornell University	1999
Dr. Derun Li	Program Manager, General Accelerator Research and Development	1995, Indiana University, Bloomington	2022

Ozaki Exchange Program

OUR SCIENCE | ABOUT | DEPARTMENTS | PARTNER WITH US | CAREERS | NEWS | FEEDBACK | DIRECTORY

Search web or people...

BROOKHAVEN
NATIONAL LABORATORY

U.S. DEPARTMENT OF
ENERGY

Ozaki Exchange Program

Encouraging and funding the exchange of graduate students between Japan and the United States to strengthen U.S.-Japan scientific collaboration and facilitate cooperation in accelerator and particle physics.

Home

Mission

The goals of this program are to strengthen U.S.-Japan scientific collaboration and in particular facilitate greater cooperation in the areas of accelerator and particle physics in projects of mutual benefit to Japan and the United States. The program will encourage and fund the exchange of graduate students between Japan and the United States. This program has been established in honor of the late Dr. Satoshi Ozaki.

Eligibility and Terms

All graduate students enrolled—or undergraduate students already accepted for enrollment—in accredited Japanese or U.S. physics Ph.D. programs are eligible to submit a proposal. It is expected that most U.S. students applying will be in their second or third year of studies, but there is no hard requirement beyond being enrolled. The award start date will be within six months of the award date and is expected to start during the month of June. The duration of the award is for a three- to twelve-month period. One-time renewal proposals will be considered for a maximum fellowship of 24 months. A report on achievement shall be submitted to the program's point of contact (see below) within one month after the date of return.

Award and Funding

Each year, up to five proposals will be selected and recommended for funding in Japan and up to five will be selected and recommended for funding in the United States. The award will provide for travel, housing, and cost-of-living expenses for the stay overseas. Any needed tuition will be the responsibility of the student and their home institution. The host laboratory will arrange for accommodations for the duration of the funded proposal.

About Satoshi Ozaki

Satoshi Ozaki was a world-renowned physicist who helped design and build accelerators for scientific research across two continents.

After earning a master's degree in physics from Osaka University, Japan, and a Ph.D. in physics from the Massachusetts Institute of Technology, Ozaki came to Brookhaven in 1959 and spent the next two decades designing state-of-the-art electronic particle detectors and data acquisition systems for experiments at the Alternating Gradient Synchrotron (AGS). In 1981, he was invited to join KEK, Japan's National Laboratory for High Energy Physics, to direct the construction of TRISTAN, the first major high-energy particle collider in that country.

In 1989, Ozaki returned to Brookhaven Lab to head the Relativistic Heavy Ion Collider (RHIC) project, serving as project director throughout the facility's design and construction and leading the crucial industrial magnet procurement and technology transfer program. Ozaki was also instrumental to the success of Brookhaven's National Synchrotron Light Source II (NSLS-II) project, which he joined in 2005. As head of the NSLS-II Accelerator Division, he built up the group, attracting staff and leading development for the accelerator portion of the facility's conceptual design.

Ozaki Exchange Program

Launched in December 2018

- To commemorate Dr. Satoshi Ozaki (1929-2017) for his many decades of contribution to the US-Japan Program
- To encourage and support the exchange of graduate students between Japan and the United States.
- To strengthen US-Japan scientific collaboration and in particular to facilitate greater cooperation in the areas of accelerator and particle physics in projects of mutual benefit to Japan and the United States

Eligibility:

Graduate students enrolled in accredited Japanese or U.S. physics Ph.D. programs are eligible to submit a proposal.

More information:

U.S. website: <https://www.bnl.gov/ozaki/>

Japanese website: https://www2.kek.jp/kokusai/us_japan/ozaki_exchange_program/

FY23 Ozaki Exchange Program

- Each year, up to five proposals will be selected and recommended for funding in the United States. Additional proposals may receive honorable mentions.
 - ▶ The award will provide for travel, housing and cost of living expenses for the stay overseas.
 - ▶ Any needed tuition will be the responsibility of the student and their home institution.
 - ▶ The host laboratory will arrange for accommodation for the duration.
- The second call of the OEP was issued in November 2019. Out of the eight eligible applications, five applicants were selected for the award:
 - ▶ Because of the COVID-19 pandemic, the visits to Japan by the other four students were delayed. As the travel restriction was relaxed around April 2022, the students were asked to revise their plan.
 - ▶ As of May 2022, one of the students withdrew the award. Three students have revised their plans and traveled to Japan in 2022 to complete the program.
- FY23: The US Committee recommended 4 students to work on the Belle-II experiment all were accepted by the joint committee.

Summary

- The US-Japan Program has been a very successful bilateral cooperative research program for over 40 years.
- Proposal solicitations are issued simultaneously in Japan and U.S. every October, with proposals due in December.
- Multi-year proposals are now allowed, starting in FY 2021 and has lead to positive outcomes.
- We are receiving more new proposal submissions
- A Joint Review Panel (consisting of U.S. and Japanese members) makes award recommendations to the US-Japan Joint Committee on High Energy Physics, which will review and approve them at its annual meeting.
- The Ozaki Exchange Program was initiated in 2018, and is supporting graduate students doing research in U.S. and Japanese institutions.



U.S. DEPARTMENT OF
ENERGY

Office of
Science