

RIKEN and Korean Collaboration

RIKEN/RBRC

Itaru Nakagawa

What is RIKEN?

理	RI	리	Physic &
化	KA	카	Chemistry
学	GAKU	가쿠	
研	KEN	켄	Research
究	KYU	큐	
所	SYO	쇼	Institute

These days, also for life science (a lot).

Location of RIKEN

Japan

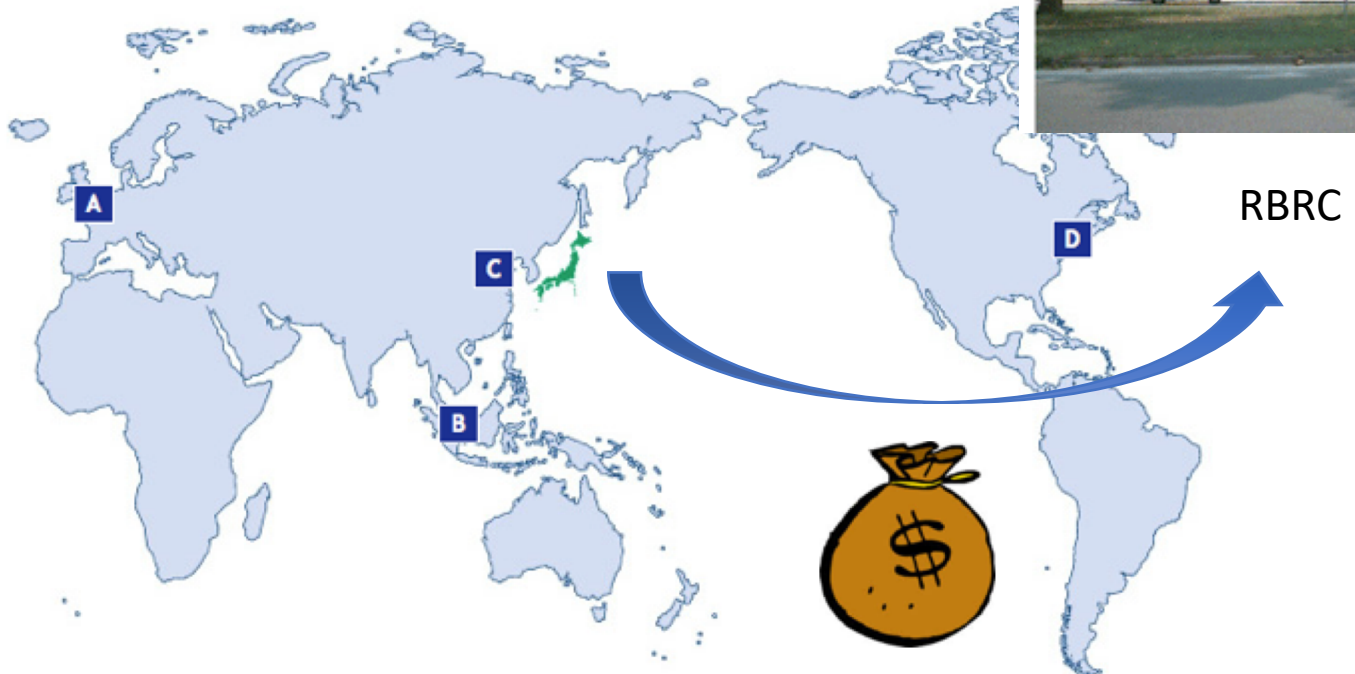
- A** Sendai
- B** Tsukuba
- C** Wako
- D** Tokyo
- E** Yokohama
- F** Nagoya
- G** Osaka
- H** Kobe
- I** Harima



How BNL Research has been Supported

Overseas

- A** RIKEN Facility Office at RAL
- B** Singapore Representative Office
- C** Beijing Representative Office
- D** RIKEN BNL Research Center



RIKEN BNL Research Center (RBRC)

[OUR SCIENCE](#) | [ABOUT](#) | [DEPARTMENTS](#) | [PARTNER WITH US](#) | [CAREERS](#) | [NEWS](#) | [FEEDBACK](#) | [DIRECTORY](#)

Search web or people...



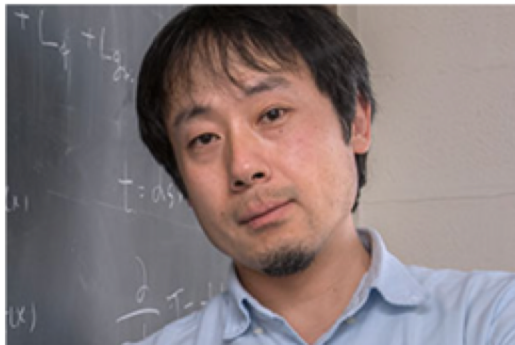
RBRC

RIKEN BNL Research Center



[Home](#) | [About](#) | [Groups](#) | [Research Areas](#) | [Proceedings](#) | [Organization Chart \(PDF\)](#) | [History](#) | [Alumni](#) | [Contact](#)

RBRC Research Groups



Group Leader: **Yoshitaka Hatta**

Theory Group

The RBRC Theory Group conducts cutting-edge research on the frontiers of RHIC science. Our mission is to advance the understanding of the strongly interacting matter explored by the proton-proton and nucleus-nucleus collisions at the sPHENIX, with an eye toward the future Electron-Ion Collider experiment at BNL. The main topics of interest are the spin structure of the proton, the gluon saturation at small- x , jet quenching, the QCD phase diagram, and the hydrodynamical evolution of the Quark-



Group Leader: **Taku Izubuchi**

Computing Group

The RBRC Computing Group has close interactions with BNL High Energy Theory Groups, Nuclear Theory, and Lattice Gauge Theory Groups. They collaborate closely with Japanese, U.S., U.K. universities, and laboratories with visiting scientists from universities such as Columbia, Connecticut, and Nagoya University.

The main mission of the group is to solve the dynamics of QCD



Group Leader: **Yasuyuki Akiba**

Experimental Group

The Experimental Group studies the spin structure of the proton via polarized $p+p$ collisions at RHIC and the properties of quark gluon plasma produced in heavy ion collisions at RHIC. The Group also develops various detectors for PHENIX experiment as well as polarimeters for RHIC.

Experimental Group Members

Radiation Laboratory

Radiation Laboratory

	Name	Other Affiliations	Activity	@
Chief Scientist	Hideto Enyo	Director, Nishina Center	PHENIX, JPARC	W
Vice Chief Scientist	Takashi Ichihara	RBRC, RIBF computing team leader	PHENIX, RIB	W
	Yasuyuki Akiba	RBRC Exp. Group Leader	PHENIX	B
Scientist	Yasushi Watanabe	RBRC, RIBF user liaison team sub-leader	PHENIX, RIB	W
	Yoshie Ohtake		Neutron Optics	W
	Yuji Goto	RBRC	PHENIX	W
	Itaru Nakagawa	RBRC	PHENIX	W
	Satoshi Yokkaichi	RBRC	PHENIX, JPARC	W
	Ralf Seidl	RBRC	PHENIX	W
Collaborating Scientist	Naohito Saito	KEK	PHENIX	
	Kazuyoshi Kurita	Rikkyo-U	PHENIX	
	Kiyoshi Tanida	Korea-U	PHENIX	
	Tsutomu Mibe	KEK	PHENIX	
Foreign Postdoctoral Researcher	Stephen Baumgart		PHENIX	W
Special Postdoctoral Researcher	Kazuya Aoki		PHENIX/JPARC	W
	Yoshichika Seki		Neutron	W
Postdoctoral Researcher	Tomoaki Nakamura		PHENIX	W
	Yoshinori Fukao		PHENIX	W
	Yohei Nakatsugawa		LEPS	W
	Takashi Hachiya		PHENIX	W
	Yoshimitsu Imazu	Starting from July	PHENIX	W
	Motohiro Nishitani		Electron gun	W
Entrustee	Katsuya Hirota	JNOP	Neutron/STJ	W
Technical Staff	Junpei Kanaya		PHENIX	W
Senior Visiting Scientist	Tomo Nagae	Kyoto-U	JPARC	
	Toshiaki Shibata	TITech	PHENIX	
	Hirohiko Shimizu	KEK	Neutron/STJ	

RIKEN-BNL Research Center

Directors

	Name	Other Affiliation	@
Center Director	Nick Samios	BNL	B
Director Emeritus	T.D. Lee	Columbia U.	B
Associate Director			W

Experiment

	Name	Other Affiliation
Group Leader	Yasuyuki Akiba	RIKEN
Deputy Group Leader	Abhay L. Deshpande	SUNY
RHIC Fellow	David Kowall	Yale
Fellow	Kensuke Okada	
	Stefan Bathe	
Research Associate	Kieran Boyle	
RIKEN Special Postdoctoral Researcher	Kohei Shoji	
Students(JRA)	Akihisa Takahara	CNS, U-tokyo
Collaborating Scientist	Akio Ogawa	BNL
	Zheng Li	BNL
	Alexander Bazilevsky	BNL
	Kotaro Kondo	BNL-CAD
	Masahiro Okamura	BNL-CAD
	Andy	BNL-CAD

Theory (Japanese member)

Other Non-Japanese members can be found [here](#)

	Name	Other Affiliation
Group Leader	L. McLerran	BNL
Deputy Group Leader	Anthony	BNL

Radiation Laboratory

Radiation Laboratory

	Name	Other Affiliations	Activity	@
Chief Scientist	Hidetoyo Enyo	Director, Nishina Center	PHENIX, JPARC	W
Vice Chief Scientist	Takashi Ichihara	RBRC, RIBF computing team leader	PHENIX, RIB	W
	Yasuyuki Akiba	RBRC Exp. Group Leader	PHENIX	B
Scientist	Yasushi Watanabe	RBRC, RIBF user liaison team sub-leader	PHENIX, RIB	W
	Yoshie Ohtake		Neutron Optics	W
	Yuji Goto	RBRC	PHENIX	W
	Itaru Nakagawa	RBRC	PHENIX	W
	Satoshi Yokkaichi	RBRC	PHENIX, JPARC	W
	Ralf Seidl	RBRC	PHENIX	W
Collaborating Scientist	Naohito Saito	KEK	PHENIX	
	Kazuyoshi Kurita	Rikkyo-U	PHENIX	
	Kiyoshi Tanida	Korea-U	PHENIX	
	Tsutomu Mibe	KEK		
Foreign Postdoctoral Researcher	Stephen Baumgart			W
Special Postdoctoral Researcher	Kazuya Aoki			W
	Yoshichika Seki			W
Postdoctoral Researcher	Tomoaki Nakamura			W
	Yoshinori Fukao			W
	Yohei Nakatsugawa			W
	Takashi Hachiya		PHENIX	W
	Yoshimitsu Imazu	Stating from July	PHENIX	W
	Motohiro Nishitani		Electron gun	W
Entrustee	Katsuya Hirota	JNOP	Neutron/STJ	W
Technical Staff	Junpei Kanaya		PHENIX	W
Senior Visiting Scientist	Tomo Nagae	Kyoto-U	JPARC	
	Toshiaki Shibata	TITech	PHENIX	
	Hirohiko Shimizu	KEK	Neutron/STJ	

**KEN-BNL Research Center**

Directors

	Name	Other Affiliation	@
Center Director	Nick Samios	BNL	B
Merit	T.D. Lee	Columbia U.	B
Director			W

Experiment

	Name	Other Affiliation
	Yasuyuki Akiba	RIKEN
er	Abhay L. Deshpande	SUNY
KRIB Fellow	David Kwall	Yale
Fellow	Kensuke Okada	
	Stefan Bathe	
D. L. A. e		
stdoctora		
tist		
		CNS, U-tokyo
		BNL
		BNL
		BNL-CAD
	Masahiro Okamura	BNL-CAD
	Andy	BNL-CAD

Theory (Japanese member)

Other Non-Japanese members can be found [here](#)

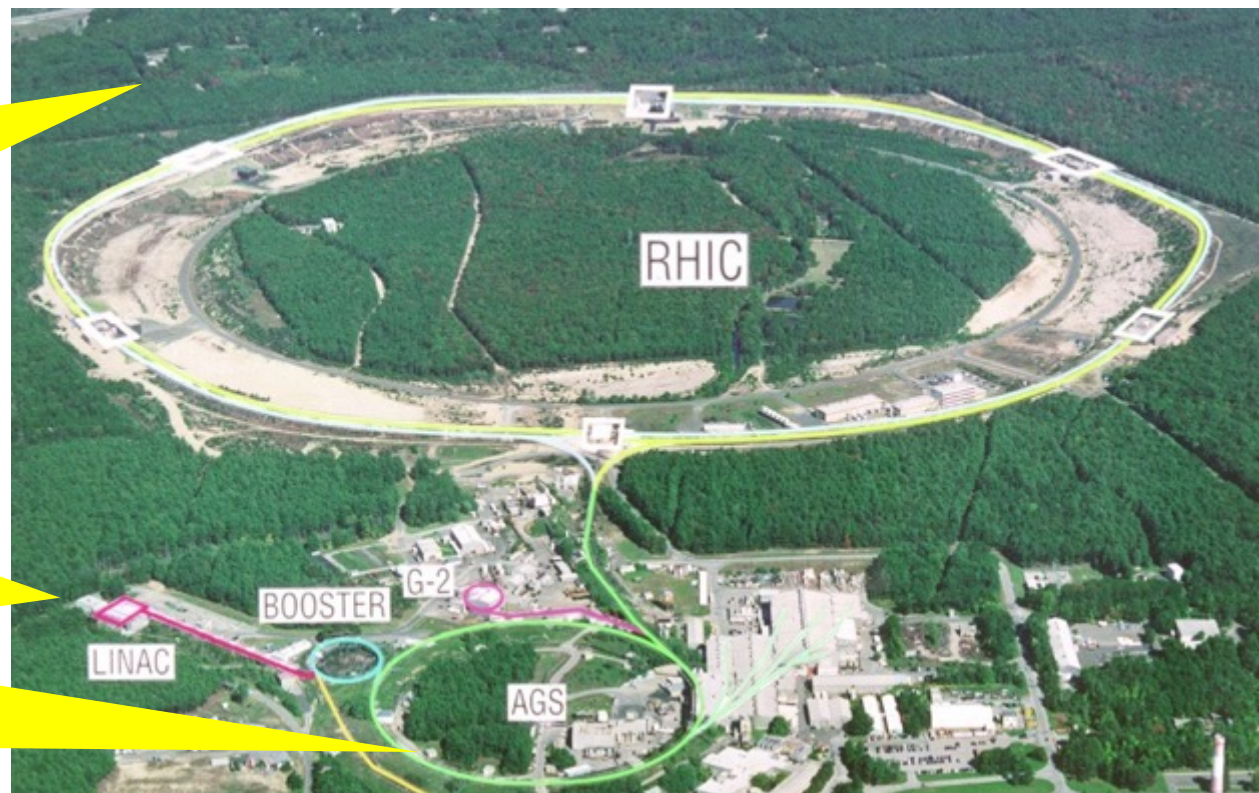
	Name	Other Affiliation
Group Leader	L. McLerran	BNL
Deputy Group Leader	Anthony	BNL

Physics Idea
The first
spin collider



RIKEN's strategy for RHIC, 1995~

Resource focusing on Original idea



Wako: Analysis center R&D center



RIKEN-BNL Center: On-site base + Theory

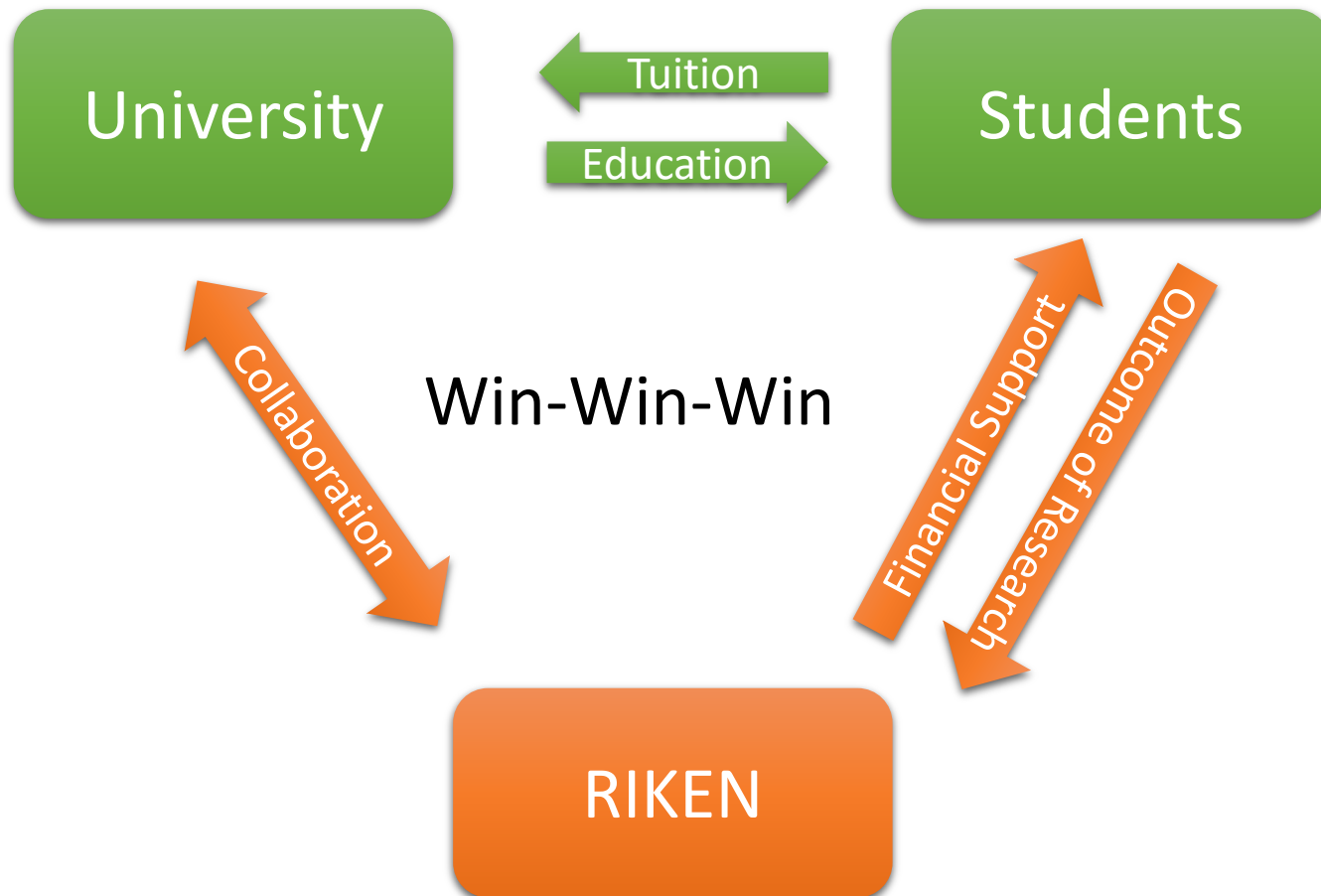


~25 Exp



~20 theorists

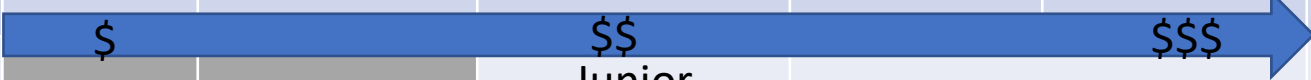
Relation to Universities



We Desperately Need Young Manpower
It is YOU.


We Desperately Need Strong Participation.
It is YOU.







RIKEN is Research Lab (not university), but has a system to support students financially

You at	Under Grad	Master Student	Doctor Student	OD (yet to complete)	Postdoc	Comment
Government JSPS	none	none	DC fellow For Japanese	Non	PD fellow	also Foreigners PD program
University	Scholar ship	Scholar Ship Teaching Assistant Research Assistant			none	Not many posts available
RIKEN Lab. operation	Trainee	Trainee Student PT	Trainee Student PT	Research Assistant	PD Researcher	For anybody but cheap
RIKEN Fellow Program						
			Junior Research Associate	Special Doctoral Fellow		For Japanese
			International Program Associates	Special Doctoral Fellow		For Non Japanese

Review of th...common.int...INTT Weekl...6th Korea-J...FPGAトレ...FLUKA-JUN...とびこめ！科...physics buil...International...

[Access](#)[Contact Us](#)[日本語サイト](#)



BLOGE-NEWS

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About RIKEN

Research

News & Publications

Careers

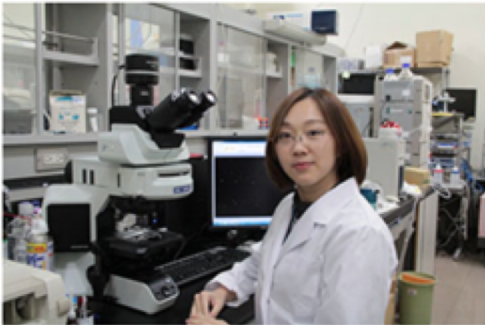
Partnerships & Tech Transfer

[Home](#) > [Careers](#) > [Programs for Junior Scientists](#)

International Program Associate

Japanese Page

An International Program Associate (IPA) is a non-Japanese doctoral candidate attending a Japanese or overseas graduate school participating in RIKEN's joint graduate school program. IPAs conduct research at RIKEN under the supervision of RIKEN scientists as part of work toward obtaining a PhD. RIKEN's joint graduate school program is based on agreements with a number of Japanese and overseas universities and aims to identify and foster talented young scientists capable of contributing to the advancement of science for the global community.



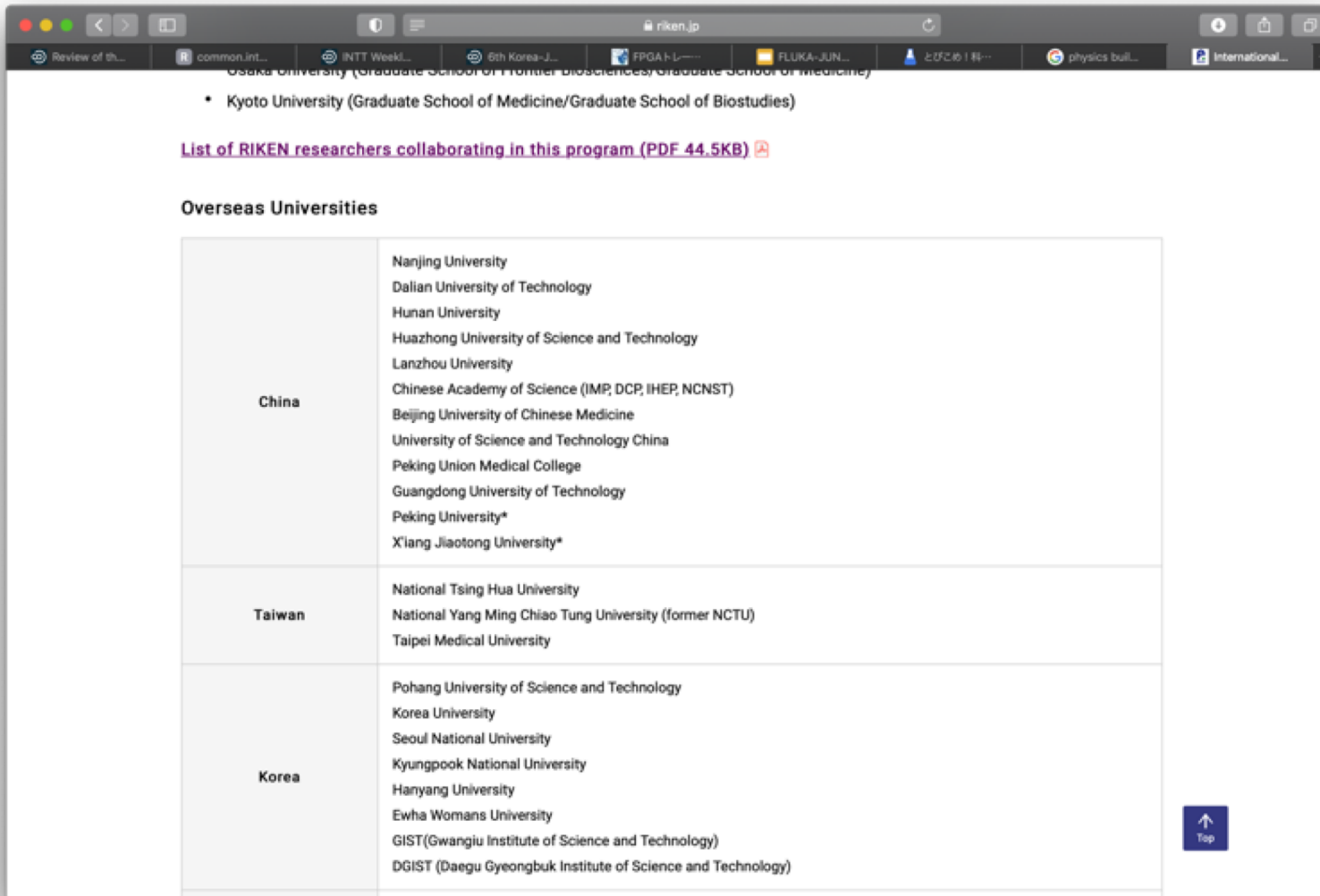
RIKEN's Educational Partnerships

Japanese Universities

- Tokyo Institute of Technology
- The University of Tokyo (Graduate School of Frontier Science)
- Tokyo Medical and Dental University (Graduate School of Medical and Dental Sciences)
- Saitama University (Graduate School of Science and Engineering)

↑
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RIKEN's Educational Partnerships in Eastern Asia



The screenshot shows a web browser window with the URL [riken.jp](https://www.riken.jp). The page content includes a list of partners, a link to a PDF, and a table of overseas universities.

- Kyoto University (Graduate School of Medicine/Graduate School of Biostudies)

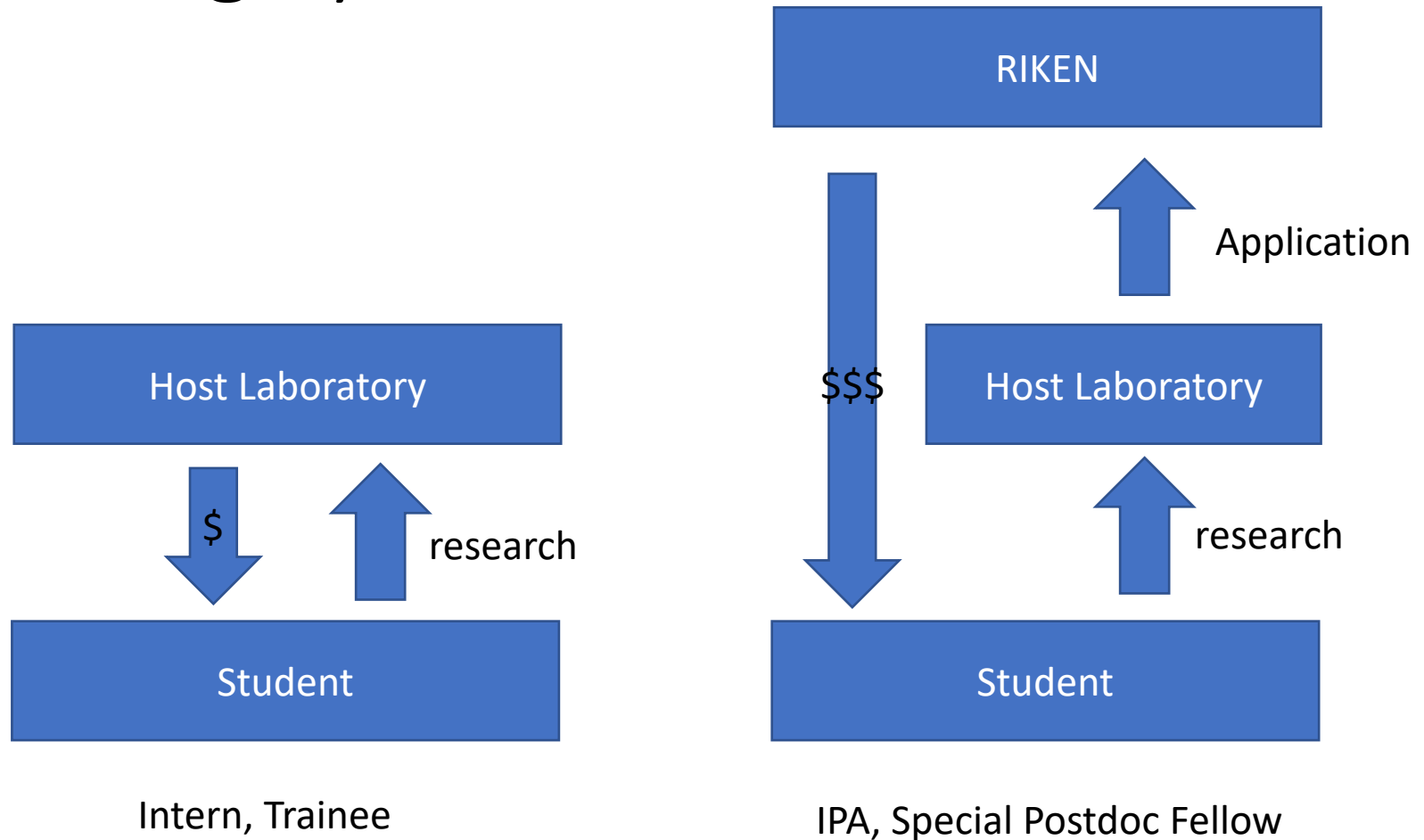
[List of RIKEN researchers collaborating in this program \(PDF 44.5KB\)](#)

Overseas Universities

China	Nanjing University Dalian University of Technology Hunan University Huazhong University of Science and Technology Lanzhou University Chinese Academy of Science (IMP, DCP, IHEP, NCNST) Beijing University of Chinese Medicine University of Science and Technology China Peking Union Medical College Guangdong University of Technology Peking University* X'iang Jiaotong University*
Taiwan	National Tsing Hua University National Yang Ming Chiao Tung University (former NCTU) Taipei Medical University
Korea	Pohang University of Science and Technology Korea University Seoul National University Kyungpook National University Hanyang University Ewha Womans University GIST(Gwangju Institute of Science and Technology) DGIST (Daegu Gyeongbuk Institute of Science and Technology)

<https://www.riken.jp/en/careers/programs/ipa/>

Training System @ RIKEN



Undergraduate

Masters

Doctors

Postdoc

IPA : General Information

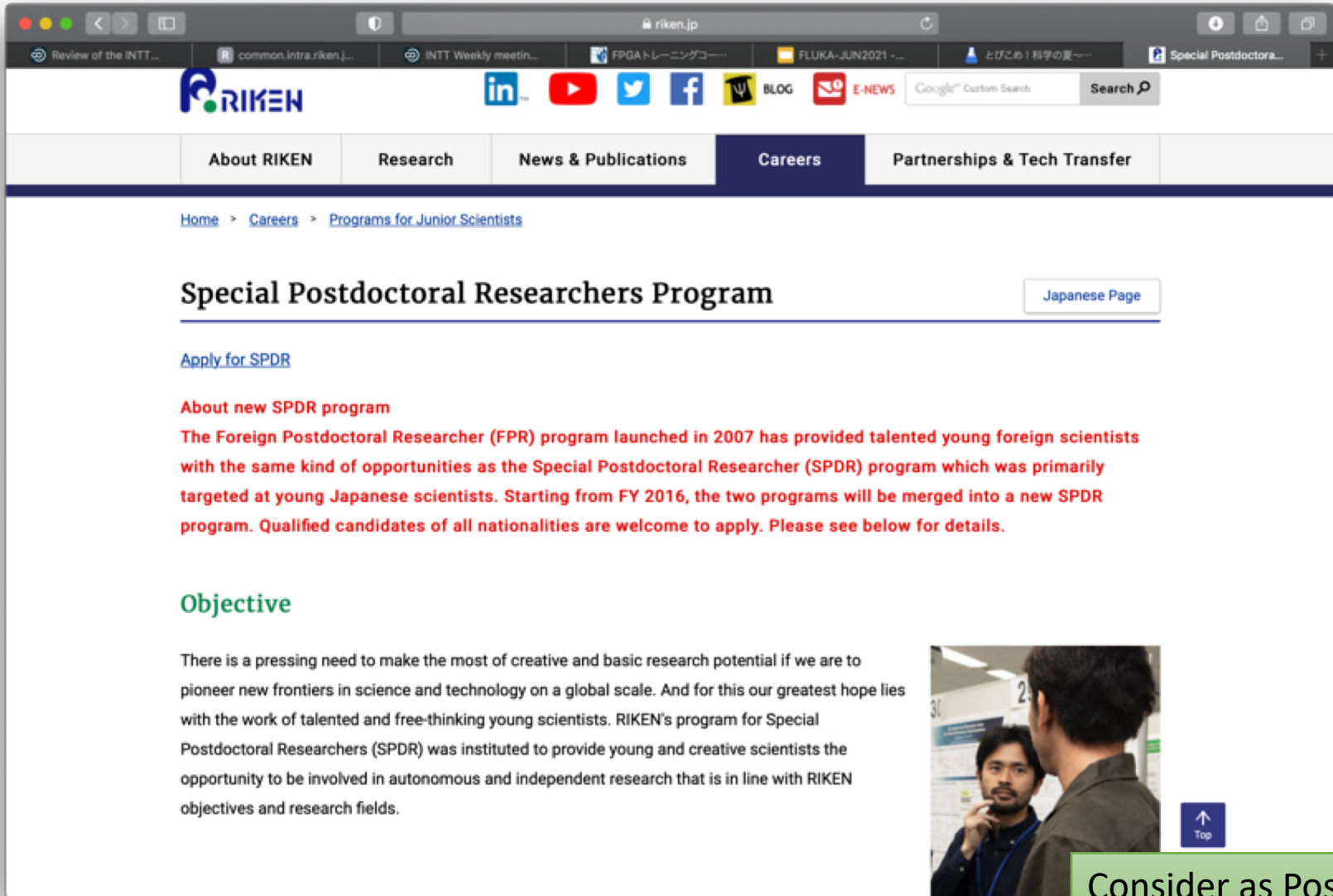
- Applicants should be (or to be) in Ph.D course (not Master course).
- Call for application issues twice a year (April and October).
- Long term (3years) and Short term (1 year).

IPA : Compensation (Financial Supports)

- Airfare (1 round-trip ticket to Japan)
- Living allowance (5,200 JPY/day ~ 150,000 JPY/month)
- Free on-campus housing, or payment of actual amount of rent for off-campus apartment, up to a maximum of 70,000 JPY/month
- Payment of accident insurance premium

10,000 JPY ~ 100,000KRW ~ US\$100

Special Postdoctoral Researchers Program



The screenshot shows the RIKEN website's 'Special Postdoctoral Researchers Program' page. The browser address bar shows 'riken.jp'. The navigation menu includes 'About RIKEN', 'Research', 'News & Publications', 'Careers' (selected), and 'Partnerships & Tech Transfer'. The breadcrumb trail is 'Home > Careers > Programs for Junior Scientists'. The main heading is 'Special Postdoctoral Researchers Program' with a 'Japanese Page' link. Below it is a link to 'Apply for SPDR'. A red text block titled 'About new SPDR program' states that the Foreign Postdoctoral Researcher (FPR) program and the Special Postdoctoral Researcher (SPDR) program will be merged into a new SPDR program starting from FY 2016. A green 'Objective' section follows, explaining the need for creative and basic research. A photo of two scientists is shown on the right, with a 'Top' button below it. A green callout box at the bottom right says 'Consider as Postdoc++'.

[Home](#) > [Careers](#) > [Programs for Junior Scientists](#)

Special Postdoctoral Researchers Program

[Japanese Page](#)


[Apply for SPDR](#)

About new SPDR program

The Foreign Postdoctoral Researcher (FPR) program launched in 2007 has provided talented young foreign scientists with the same kind of opportunities as the Special Postdoctoral Researcher (SPDR) program which was primarily targeted at young Japanese scientists. Starting from FY 2016, the two programs will be merged into a new SPDR program. Qualified candidates of all nationalities are welcome to apply. Please see below for details.

Objective

There is a pressing need to make the most of creative and basic research potential if we are to pioneer new frontiers in science and technology on a global scale. And for this our greatest hope lies with the work of talented and free-thinking young scientists. RIKEN's program for Special Postdoctoral Researchers (SPDR) was instituted to provide young and creative scientists the opportunity to be involved in autonomous and independent research that is in line with RIKEN objectives and research fields.



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Consider as Postdoc++

<https://www.riken.jp/en/careers/programs/spdr/>

Japan-Korea RHIC Collaboration Meeting

	Location	Country	Year
0 th	Seoul National University	Korea	September, 2010
1 st	Ewha Woman's University	Korea	November, 2012
2 nd	SungKyunKwan University	Korea	November, 2013
3 rd	RIKEN	Japan	November, 2014
4 th	Hanyang University	Korea	October, 2015
5 th	Sejong University	Korea	October, 2019
6 th	Online		July, 2021



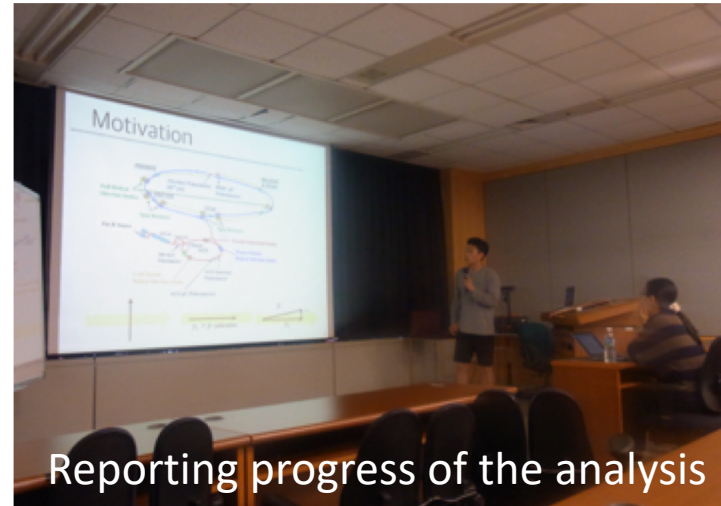
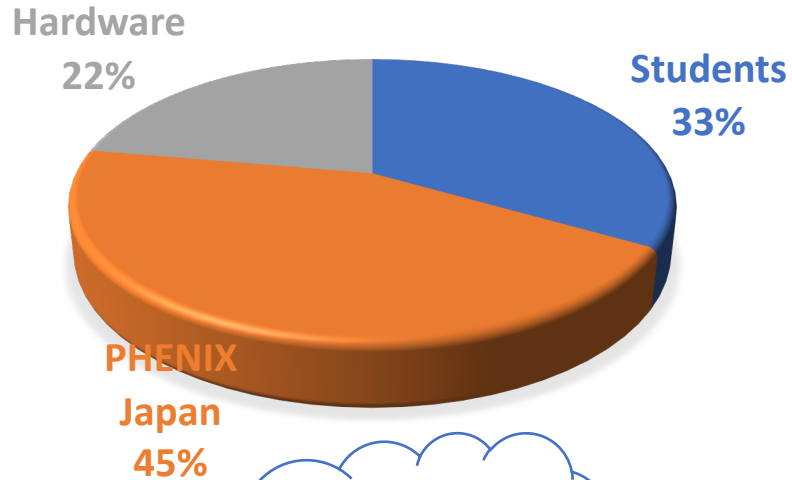
4th in Hanyang Univ.



5th in Sejong Univ.

Outcome of the Meeting

BREAKDOWN OF TOPICS



Any hardware projects we can work together?

My student is making good progress

My senior works in a cool project!

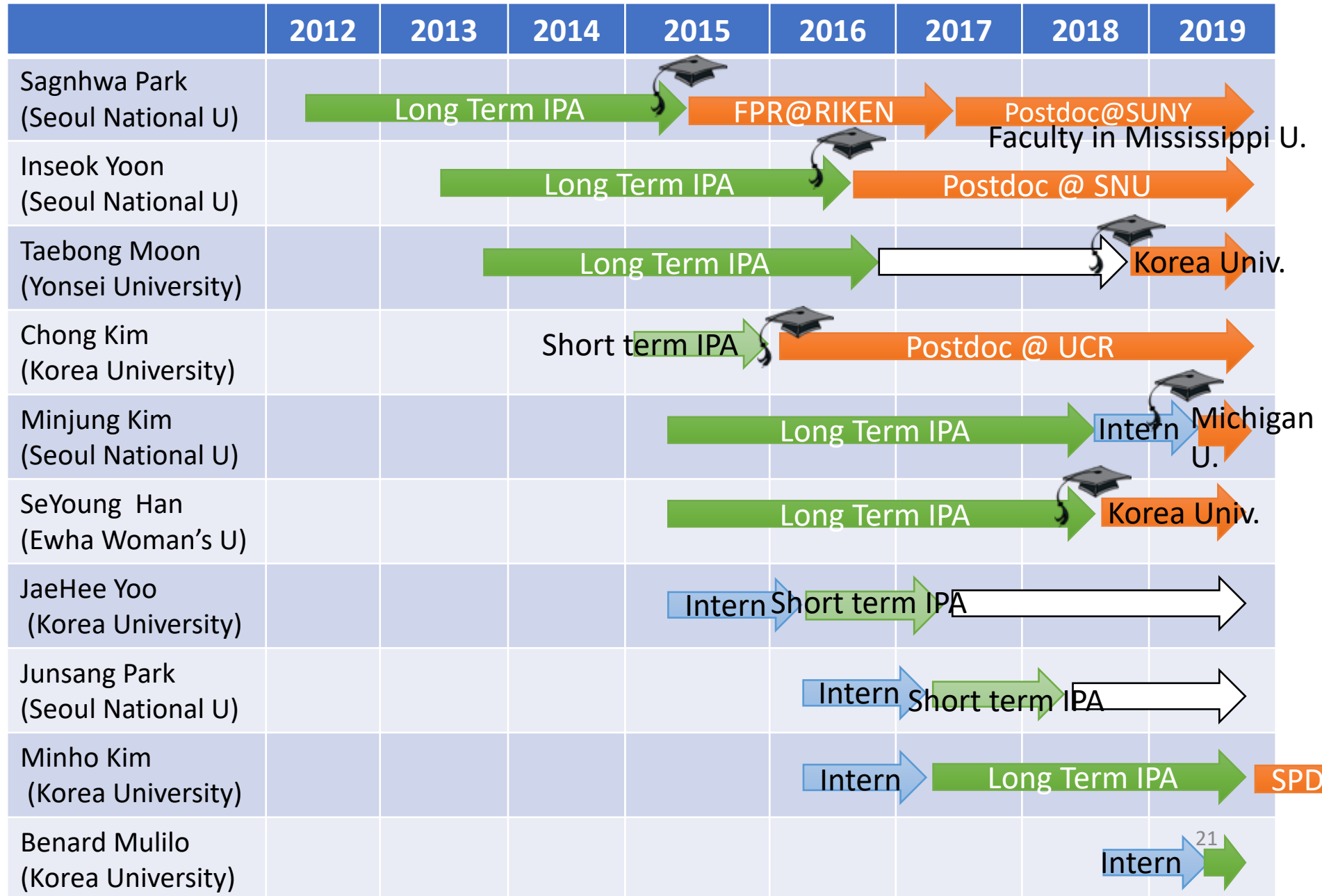
My talk in this workshop can be listed in my CV

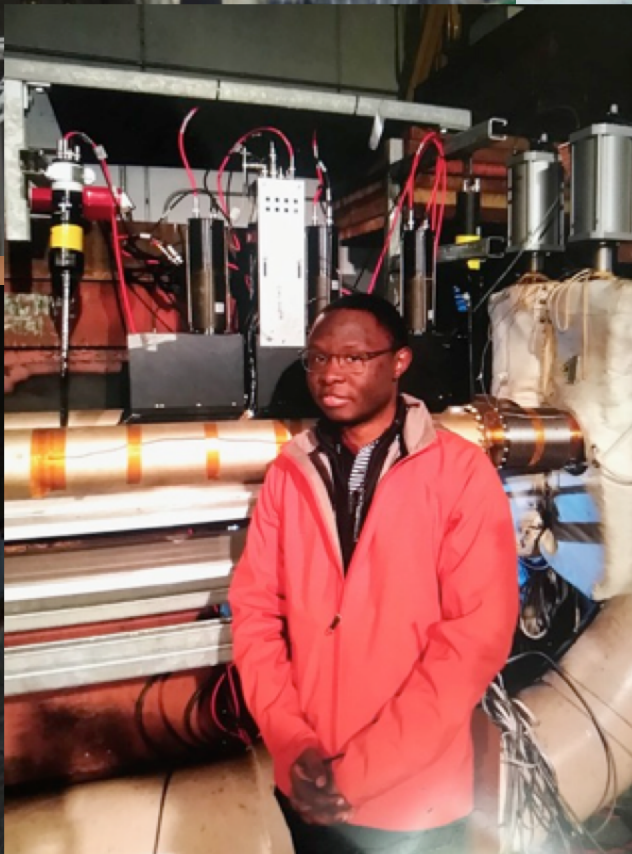
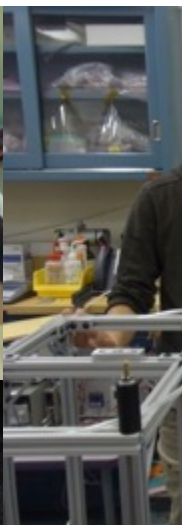
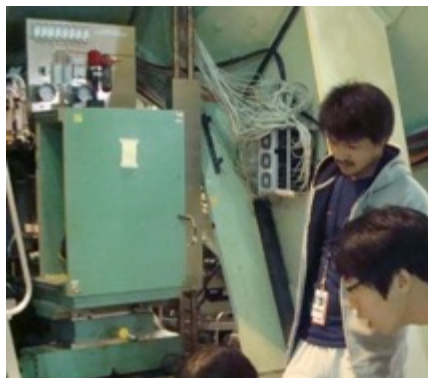


IPA Students @ Radiation Lab.

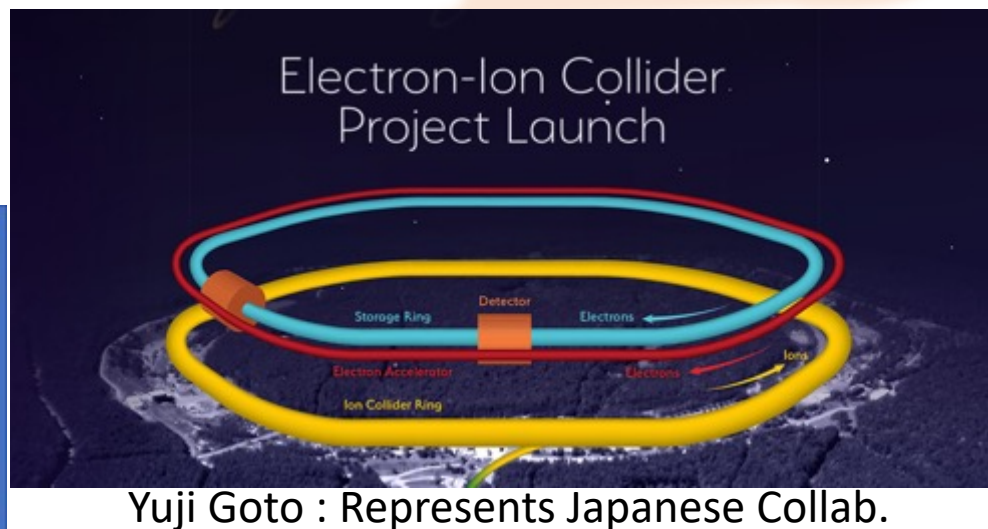
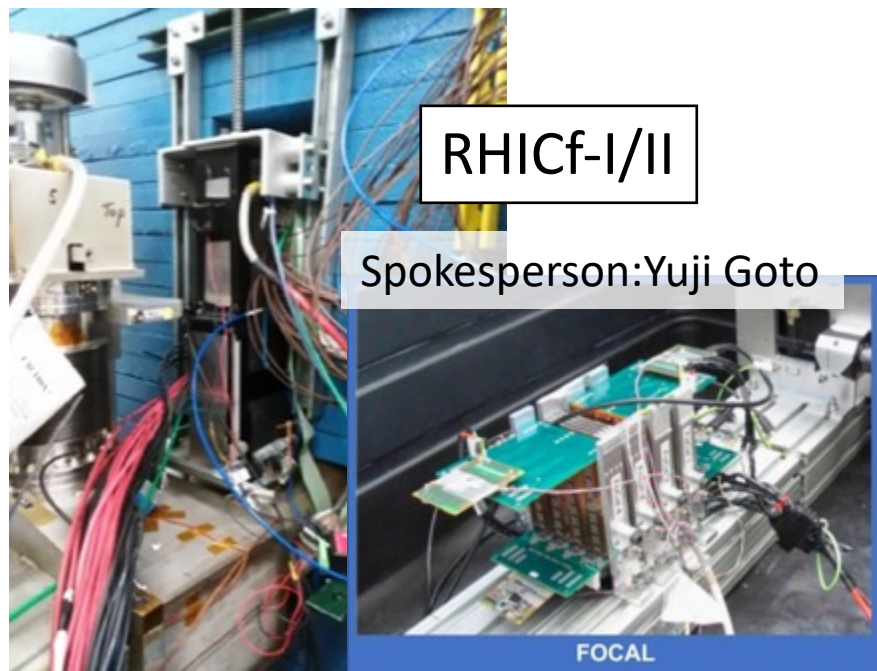
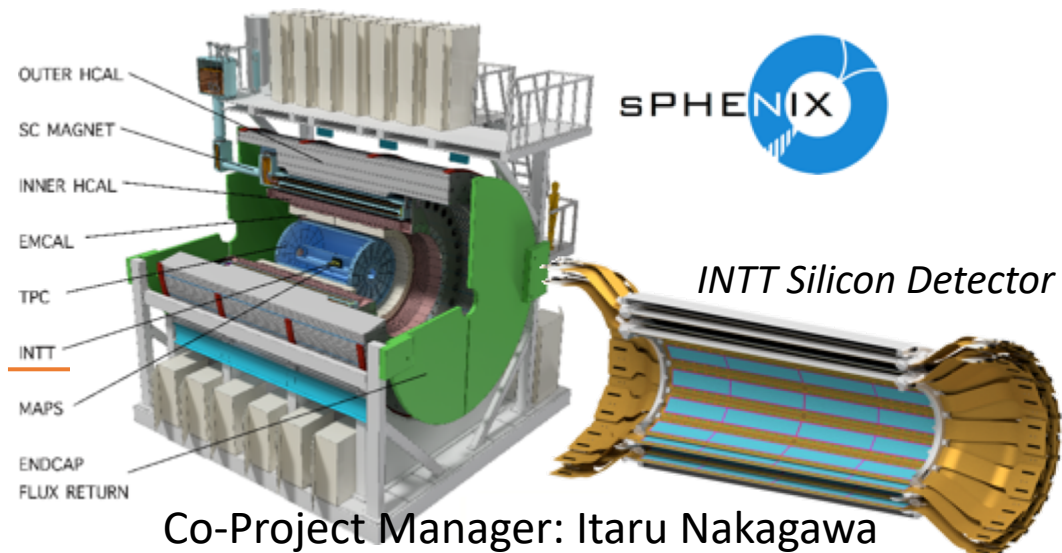
Student	Research Topic
Sagnhwa Park (SNU)	Sea Quark Polarization thru Run13 W->mu Longitudinal Single Spin Asymmetry
Inseok Yoon (SNU)	Gluon Polarization thru Run13/12/11 Central Arm pi0 Longitudinal Double Spin Asymmetry
Taebong Moon (Yonsei Univ.)	Gluon Polarization through Run13 Central $\pi^{+/-}$ Longitudinal Double Spin Asymmetry
Chong Kim (Korea Univ.)	Sea Quark Polarization thru Run13 W->mu Longitudinal Single Spin Asymmetry
Minjung Kim (SNU)	Forward Neutron Asymmetry A_N for Run15 pA
SeYoung Han (Ewha Univ.)	Search for mini-QGP in Small Colliding System using Run15 High Multiplicity Events
JaeHee Yoo (Korea Univ.)	Gluon Polarization through Run15 pA Central $\pi^{+/-}$ Longitudinal Double Spin Asymmetry
Junsang Park	Very forward Transverse Single Spin Asymmetry of Neutron Using RHICf Detector at STAR
Minho Kim (Korea Univ.)	Very forward Transverse Single Spin Asymmetry of π^0 Using RHICf Detector at STAR
Benard Mulilo (Korea Univ.)	p_T dependence of Forward Neutron Asymmetry A_N for Run15 pA

Korean Students in Radiation Lab.





RIKEN's Current Projects

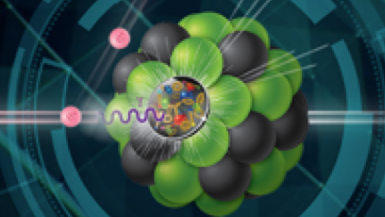


Electron-Ion Collider

GOALS THE MACHINE BENEFITS SCIENCE NEWS IMAGES

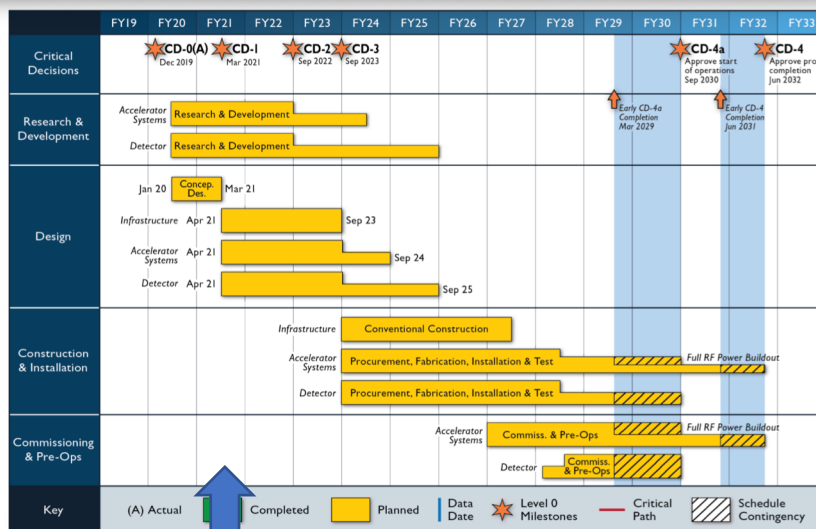
The Electron-Ion Collider

A machine that will unlock the secrets of the strongest force in Nature

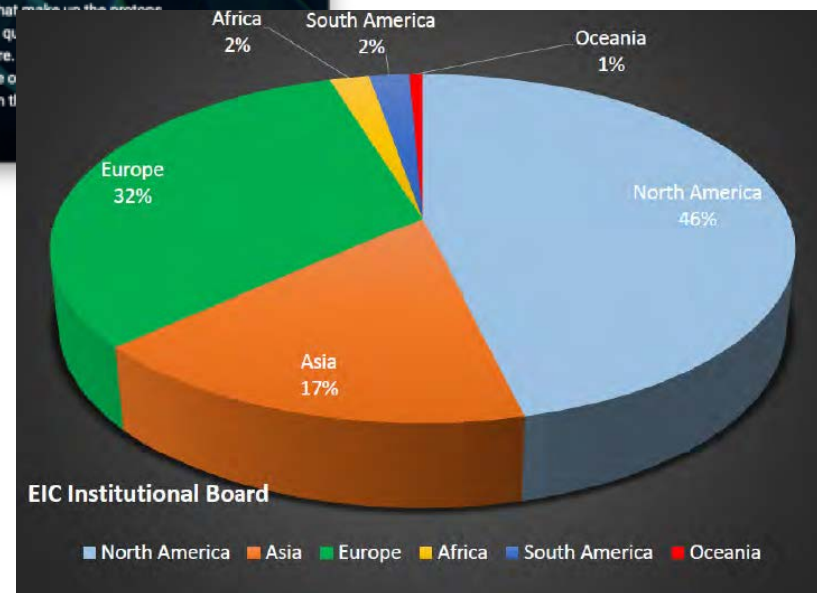


The computers and smartphones we use every day depend on what we learned about the atom in the last century. All information technology—and much of our economy today—relies on understanding the electromagnetic force between the atomic nucleus and the electrons that orbit it. The science of that force is well understood but we still know little about the microcosm within the protons and neutrons that make up the atomic nucleus. That's why Brookhaven Lab is building a new machine—an Electron-Ion Collider, or EIC—to look inside the nucleus and its protons and neutrons.

The EIC will be a particle accelerator that collides electrons with protons and nuclei to produce snapshots of those particles' internal structure—like a CT scanner for atoms. The electron beam will reveal the arrangement of the quarks and gluons that make up the nucleus. The force that holds quarks and gluons together, the strong nuclear force, is the strongest force in Nature. The EIC will study this "strong nuclear force" and the role it plays within and all around us. What we learn from the EIC will have implications for the technologies of tomorrow.



Today



Synergy from Asia

Summary

- We are seeking for possible collaborations with other institutes, particularly Asian universities.
- Working with a student in RIKEN/RBRC in RIKEN's project can be a start.
- Let's work together!