Open Innovation at Waseda University

Prof. Hironori Kasahara, IEEE Life-Fellow, IPSJ Fellow
Past Senior Executive Vice President, Waseda University
IEEE Computer Society President 2018
Board Member: The Academy of Engineering of Japan & COCN
URL: http://www.kasahara.cs.waseda.ac.jp/

1980 BS, 82 MS, 85 Ph.D. , Dept. EE, Waseda Univ.
1985 Visiting Scholar: U. of California, Berkeley,
1986 Assistant Prof., 1988 Associate Prof., 1989-90 Research Scholar: U. of Illinois, Urbana-Champaign, Center for Supercomputing R&D, 1997 Prof.,
2004 Director, Advanced Multicore Research Institute,
2017member: the Engineering Academy of Japan (2020- Board Mem) and the Science Council of Japan
2018 IEEE Computer Society President
Senior Vice President, Waseda Univ. (2018 Nov.-2022 Sept.)

AWARD: 1987 IFAC World Congress Young Author Prize
1997 IPSJ Sakai Special Research Award,
2005 STARC Academia-Industry Research Award,
2008 LSI of the Year Second Prize,
2008 Intel Asia Academic Forum Best Research Award,
2010 IEEE CS Golden Core Member Award
2014 Minister of Edu., Sci. & Tech. Research Prize
2015 IPSJ Fellow, 2017 IEEE Fellow, Eta Kappa Nu
2019 Spirit of IEEE Computer Society Award,
2020 IPSJ Contribution Award,

Reviewed Papers: 232, Invited Talks: 230,
Granted Patents: 67 (Japan, US, GB, DE, China),
Articles in News Papers, Web News, TV etc.: 697

Committees in Societies and Government 287
IEEE Computer Society: President 2018, Executive Committee(2017-2019), BoG(2009-14), Strategic Planning Committee Chair 2018, Multicore STC Chair (2012-), Japan Chair(2005-07),
IPSJ Chair: HG for Magazine. & J. Edit, Sig. on ARC.
【METI/NEDO】 Project Leaders: Multicore for Consumer Electronics, Advanced Parallelizing Compiler, Chair: Computer Strategy Committee
【Cabinet Office】 CSTP Supercomputer Strategic ICT PT, Japan Prize Selection Committees, etc.
【MEXT】Info. Sci. & Tech. Committee,
Supercomputers (Earth Simulator, HPCI Promo., Next Gen. Supercomputer K) Committees
JST Moonshot Project G3 Robot & AI Vice Chair,
【COCN】Board Member in Council of Competitiveness Nippon, etc.

USA President:
Bill Clinton

USA Ambassador:
Caroline Kennedy

Chinese President:
Hu Jintao

WASEDA University

Tokyo, Japan

Microsoft:
Dr. Bill Gates

British Prime Minister:
Boris Johnson

早稲田大学

1882 》

Okuma Shigenobu founded Tokyo Senmon Gakko (College)

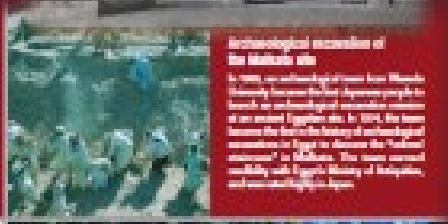
The "Group of Four" who contributed to the development of Waseda University

1903 》

Start of the Waseda-Keio baseball match (Jubilee)

《 1922

Visit by physicist Albert Einstein to Waseda University



Archaeological excavation of the Waseda site

1928 》

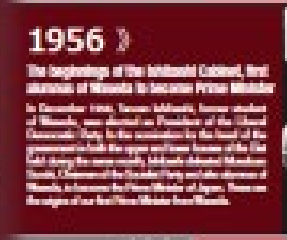
Japan's first gold medalist

1993 》

Visit to Waseda University by then U.S. President Bill Clinton

《 1940

"Vision for life"
from diplomat Chiune Sugihara



1956 》

The beginnings of the Ishibashi Cabinet, first alumnus of Waseda to become Prime Minister

《 1962

Robert Kennedy attends student awards

2007 》

《 2012

Formulation of Waseda Vision 150

Alibaba
Mr. Jack Ma

WASEDA UNIVERSITY

Waseda University
早稲田大学

Number of International Students
7,942 from 125 countries and territories

Alumni CEOs in Japan
10,606

9 Prime Ministers

Founder Shigenobu OKUMA

Graduate Employability
#1 in private university of Japan
(#2 in Japan, #27 in the world)
QS Graduate Employability Rankings 2019

0% Schools

ALUMNI [卒業生]	PARTNER INSTITUTIONS [協定大学・機関]
630,000	848 (93 countries)

Hiroshi YAMAUCHI

Masaru IBUKA

Tadashi YANAI

https://www.kantei.go.jp/jp/rekidaina/kaku/index.html

mercari

HEROZ JAPAN

FACULTY [教員]	ENROLLMENT [学生数]	UNDERGRADUATE STUDENTS [学部生]	GRADUATE STUDENTS [大学院生]
5,468	49,436	41,051	8,385

* Entire Year 2018

NUMBER OF BOOKS [図書館蔵書]
5,800,000

Prime Ministers	Business Leaders	Business Leaders
	Founders of global companies	CEOs of global companies
8th Shigenobu Okuma		ANA (All Nippon Airways)
17th Shigenobu Okuma		HONDA
55th Tanzan Ishibashi		Nintendo
74th Noboru Takeshita	Sony	UNIQLO
76th Toshiki Kaifu	Samsung	Shiseido
84th Keizo Obuchi	Casio	Nomura Securities Co., Ltd.
85th Yoshiro Mori	LOTTE	Tokio Marine & Nichido Fire Insurance Co., Ltd.
91st Yasuo Fukuda		Olympus Corporation
95th Yoshihiko Noda		
100th Fumio Kishida		

Aiji TANAKA

President International Political Science Association (IPSA) President 2016

Hironori KASAHARA

Senior Executive Vice President IEEE Computer Society President 2018. The first president from outside USA and Canada in 72 years CS history. CS has 84,000 members from 168 countries.

Toshio FUKUDA

The University Professor Waseda, Waseda Alumnus, Prof. Emeritus Nagoya Univ., Prof. Meiji Univ. IEEE President 2020. The first from Asia in 135 years history. IEEE has 420,000 members.

Haruki MURAKAMI

Hirokazu KOREEDA

Yuzuru HANYU

S. ARAKAWA

Yui Suzaki

IEEE Computer Society

The first President from outside North America in 72 years history of IEEE CS

Bjarne Stroustrup: Morgan Stanley & Columbia Univ.
2018 IEEE Computer Society Computer Pioneer Award
IEEE COMPSAC2018 Keynote & Award Ceremony

July 26, 2018, Keynote, Hitotsubashi Hall

July 25, 2018 Award Ceremony Rihga Royal Hotel Tokyo

215
International Conferences

12 Magazines

35 Journals

47 Total Publications

847,000+
Articles in CSDL

IEEE COMPUTER SOCIETY
BY THE NUMBERS

12,000+
Volunteers

615
Committees/ Boards

2,352+
Meetings/ Teleconferences

6
New Standards

230
Active Standards

IEEE754, 802

373,100+
Community Members

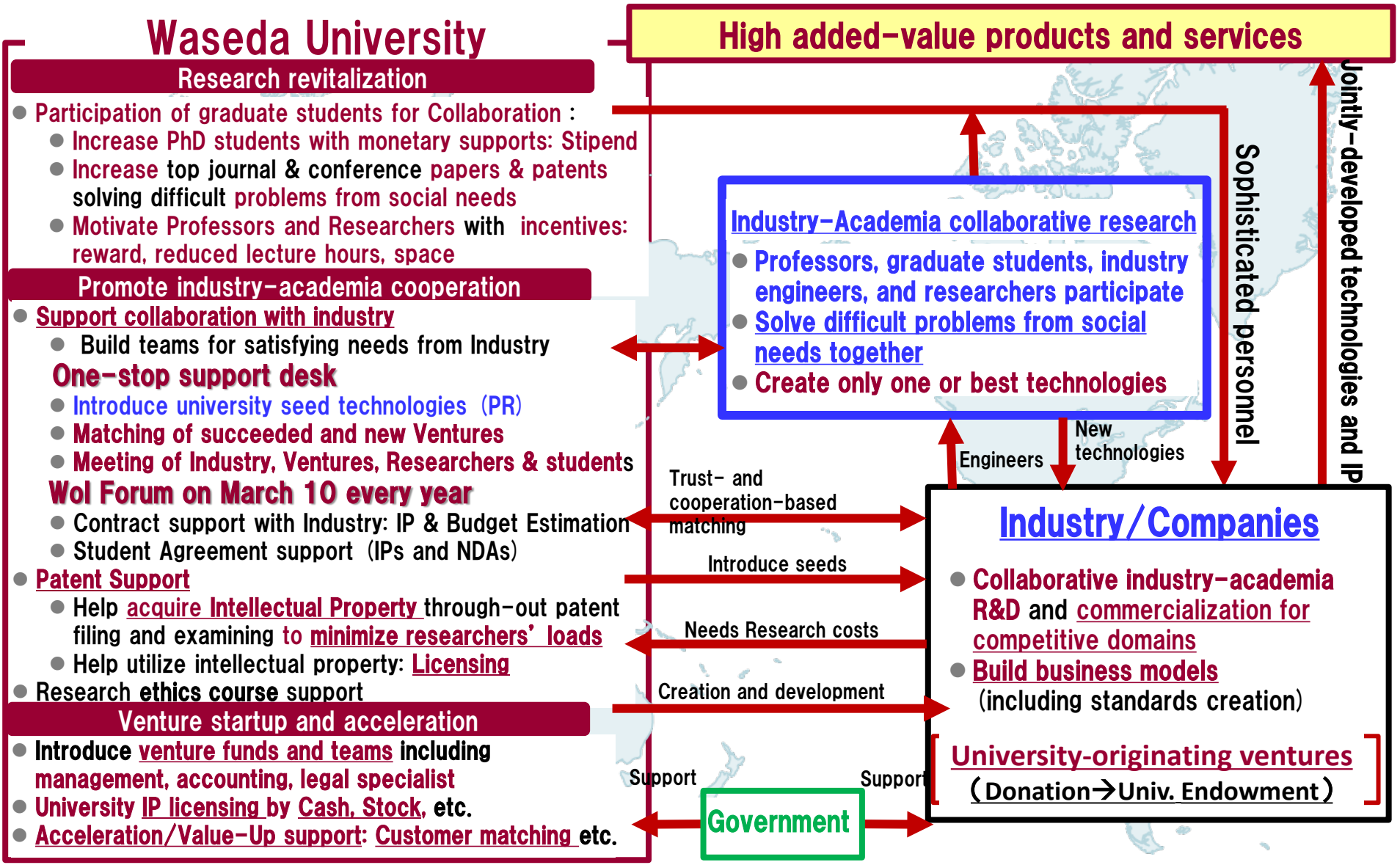
168
Countries with CS Members

634
Chapters

ACM/IEEE SC (SuperComputing) 19, Denver, Nov.17-22, 2019

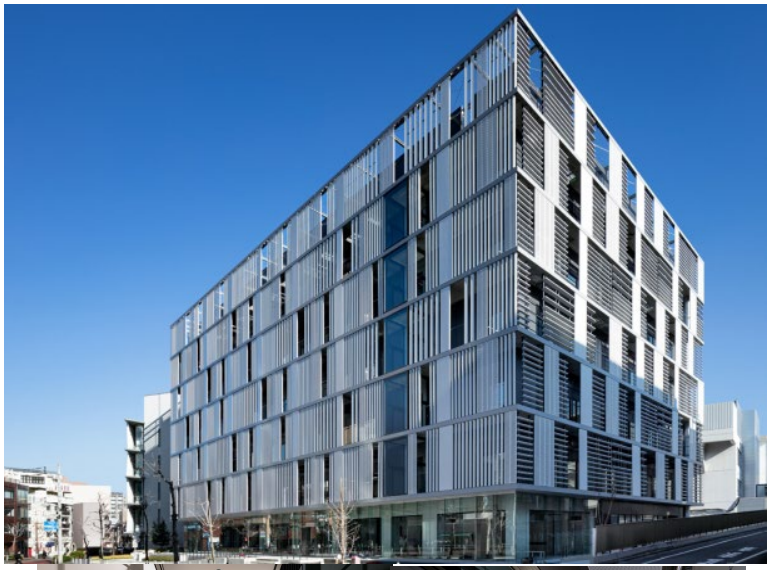
Cornel Univ. Prof. Steven Squyres: Mars Exploration、CalTech. Dr. Katie Bouman: Visualization of Black Hole

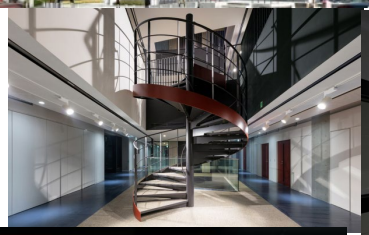
Waseda Open Innovation Ecosystem



Waseda Research Innovation Center
Supporting for Ventures, IP, Collaboration

Ex-Director
Hironori Kasahara
SEVP
Waseda Univ





Research Innovation Center (June 2020～)
Hub of Waseda Open Innovation Ecosystem

Research Strategy Center — Strategy for Open Innovation

Waseda TLO — IP Creation, Licensing, Contract

Waseda Center for Entrepreneurship — Venture Startup, Acceleration

Open Innovation Research Project with Industry Supported by MEXT — Industry Collaboration

- Energy
- Environment
- Recycle
- ICT
- City Design
- Life
- Automotive
- etc.

Gallery for Ventures: with TULLY'S Coffee Shop

Waseda Open Innovation Valley Project

To provide an Innovation Environment where students, professors, and staff can make challenges.

- Research Innovation Center to be completed in March 2020
- Industry Academia Collaboration One Stop Desk, Research Support and Strategy, TLO, Contract Support, Venture Start-up Support

Waseda Main Campus

New Research Innovation Center (Open: April 2020)

March 10, 2021 in Waseda Arena
Waseda Open Innovation Forum (WoI) 2021
(Matching among Leading Professors & Researchers, Industry, Ventures, Students)

Toyama Campus

Supported by METI

Supported by MEXT Open Innovation Project

Waseda Arena with roof garden: Collaboration in Sport Science

Green Computing Center for Industry Collaboration

Mar. 9-10, 2021, Online(2300 Participats)

WOI: Waseda Open Innovation Forum
Executive Committee Chair
Prof. Hironori Kasahara, SEVP, Waseda Univ.

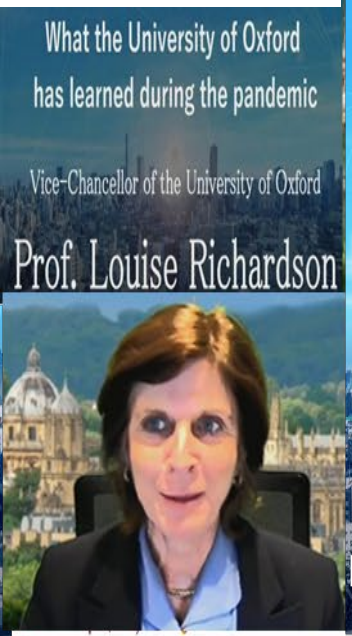
笠原博徳

WOI'21

WASEDA OPEN INNOVATION FORUM 2021

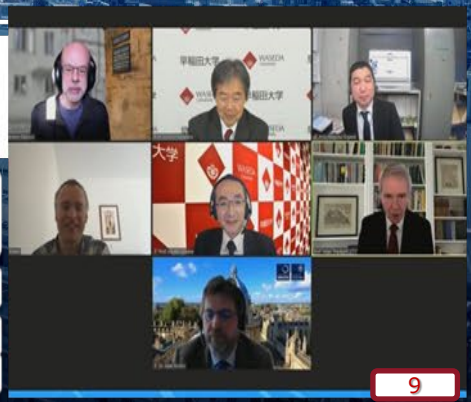
早稲田オープン・イノベーション・フォーラム2021

Univ. of Oxford,
VC Prof. Loise Richardson



IEEE
World Largest Society

文部科学省 大臣官房審議官(科学技術・学術政策局担当)　梶原 将 氏
経済産業省 大臣官房審議官(産業技術環境局・福島復興担当) 萩原 崇弘 氏



グリーン・コンピューティング・システム研究機構
10周年記念講演会

Oxford-Waseda
Computer Science Symposium
(オックスフォード大学との大学間協定両大学トップ研究者の講演)

研究院・研究機構の取り組み紹介

早稲田知財活用ベンチャー紹介

研究成果展開事業 社会還元加速プログラム(SCORE) Demo Day

学生の発表 (EDGE-NEXT、ビジネスコンテスト優勝者、DSコンペティション優秀賞受賞者の講演)

Waseda University Carbon Net Zero Challenge –2021.11.1

https://www.waseda.jp/netzero/

PROGRAM プログラム

15:30 - 15:34 開会挨拶 竹内 淳 研究院長

15:34 - 15:41 早稲田大学 カーボンニュートラル研究宣言 田中 愛治 総長

15:41 - 15:50 ロボティクス・ICTのシステムインテグレーションによるCN貢献
菅野 重樹 理工学術院長
次世代ロボット研究機構

カーボンニュートラルの企業方針、早大との共同研究、今後の産学連携研究の方向性

コーディネーター 林 泰弘（スマート社会技術融合研究機構長）

15:50 - 16:10 電力ネットワーク
～次世代エネルギーマネジメントで実現するカーボンニュートラル～
岡本 浩氏 東京電力パワーグリッド株式会社 取締役 副社長執行役員
林 泰弘教授 スマート社会技術融合研究機構

16:10 - 16:30 グリーントランスフォーメーション
～次世代型エネルギーサプライチェーンの構築～
宮田 知秀氏 ENEOS株式会社 常務執行役員 水素事業推進部・FCサポート室・中央技術研究所管掌
本間 敬之教授 ナノ・ライフ創新研究機構

16:30 - 16:50 通信ネットワーク・ICT
～IOWN構想と産学連携 –カーボンニュートラルに向けて–～
川添 雄彦氏 日本電信電話株式会社 常務執行役員 研究企画部門長
戸川 望教授 グリーン・コンピューティング・システム研究機構

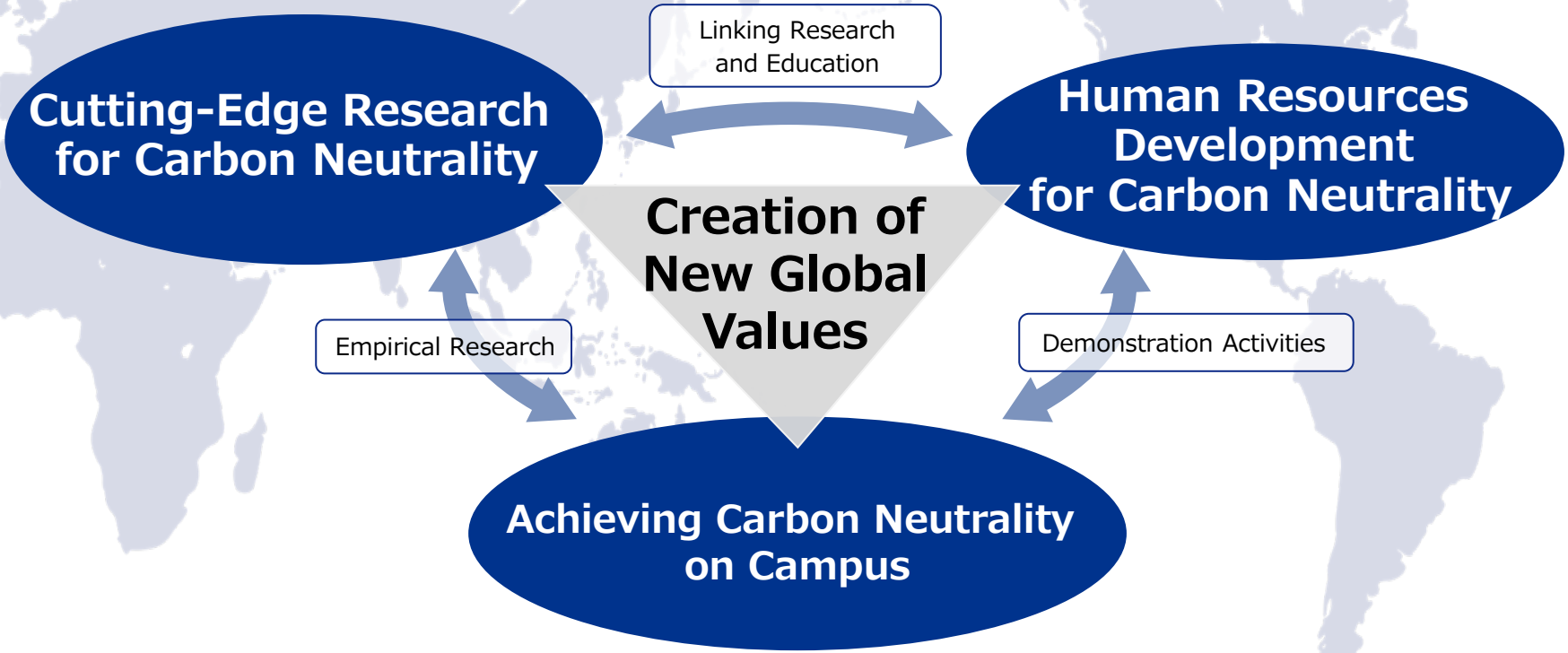
16:50 - 17:10 EV
～カーボンニュートラル実現のための日産の電動化戦略～
平井 俊弘氏 日産自動車株式会社 専務執行役員
草鹿 仁教授 次世代自動車研究機構

17:10 - 17:30 建築・建設
～住宅・建築・都市のカーボンニュートラル～
小野島 一氏 株式会社大林組 執行役員 建築本部副本部長（建築設備・リニューアル担当）兼 技術本部副本部長
田辺 新一教授 スマート社会技術融合研究機構

お問合せ
早稲田大学研究院事務所 kenkyuin_forum22@list.waseda.jp

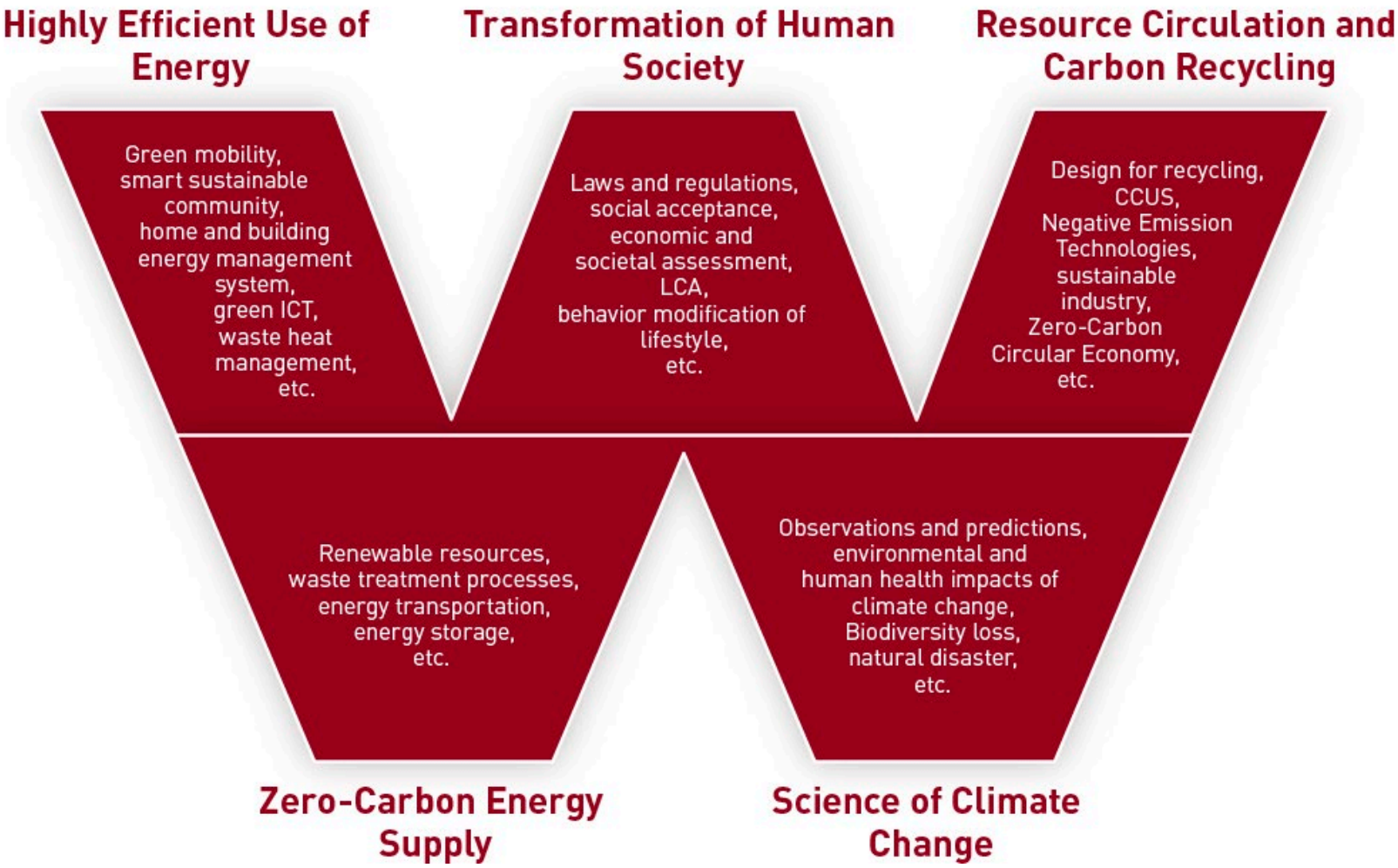
WASEDA Carbon Net Zero Challenge 2030s

At Waseda University, we will contribute to the realization of carbon neutrality on campus, in the local community, in Japan, and globally, by focusing on further enhancing our ability to conduct cutting-edge research that can transform the future and the fostering of human resources that will pave the way to a new era.



Researchers Making an "All-Waseda" Effort to Promote Carbon Neutrality

The Waseda Carbon Net Zero Challenge connects All Waseda researchers and researcher projects that contribute to climate change or carbon neutrality, and brings together research on new technological innovations and expertise in policy / business management.



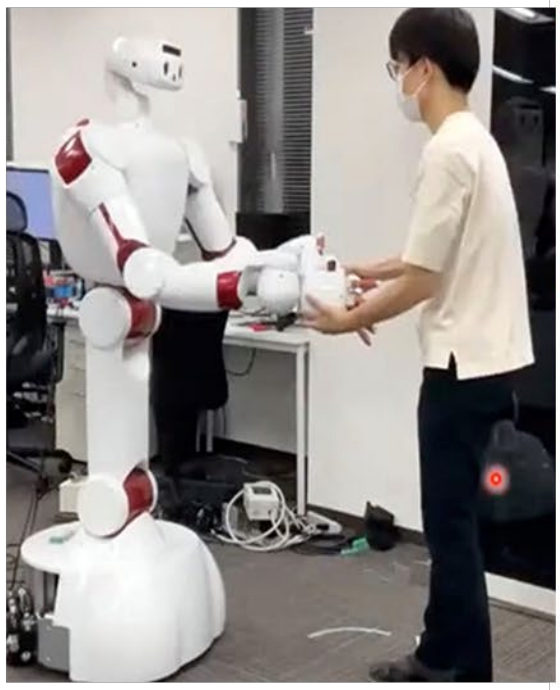
https://www8.cao.go.jp/cstp/english/moonshot/sub3_en.html

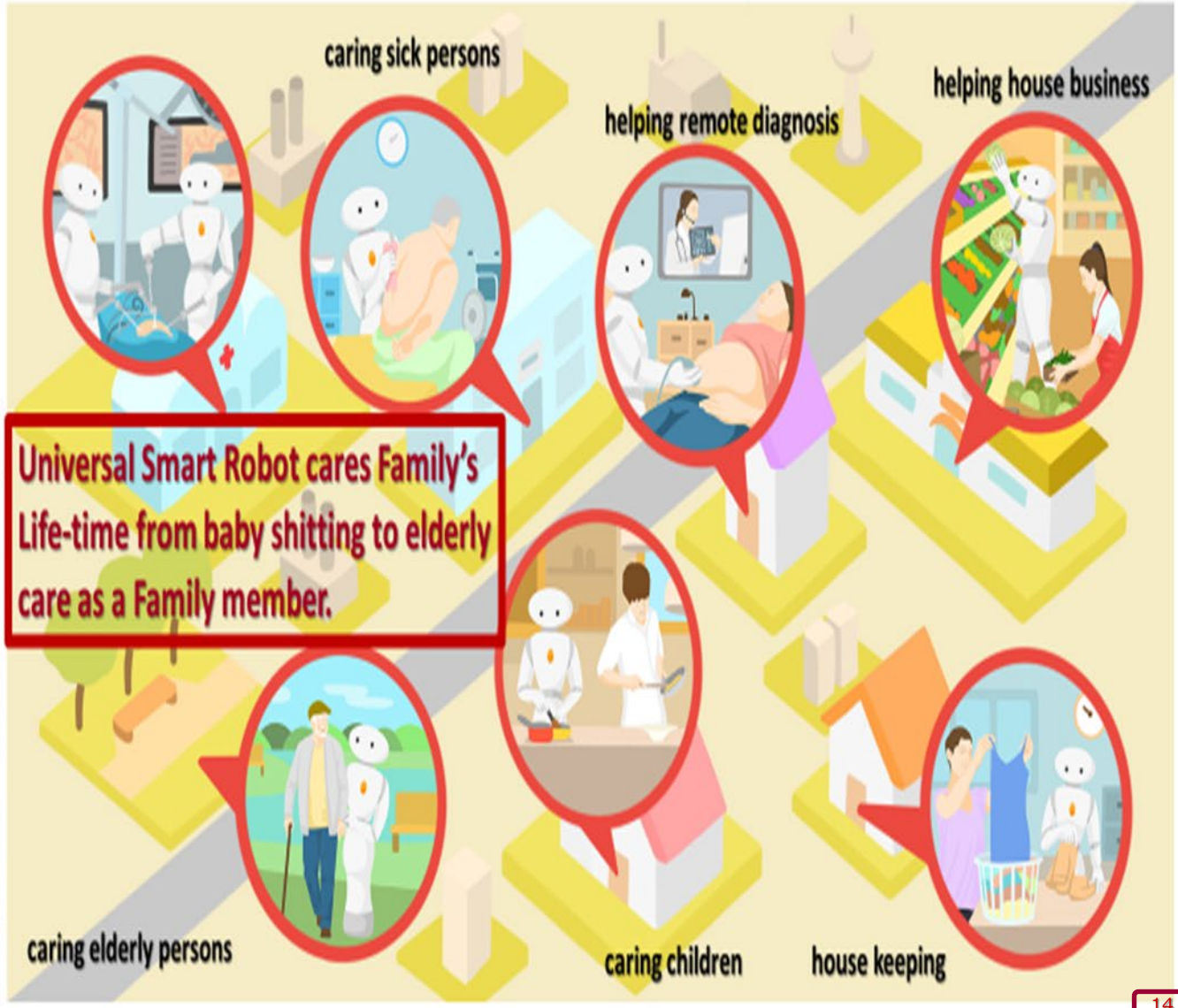
Cabinet Office

MOONSHOT
RESEARCH & DEVELOPMENT PROGRAM

AIREC (AI-driven Robot for Embrace and Care) Led by Prof. Sugano

Supported by Japanese Government "Moonshot" Project from 2020





Demo of NEDO Green Multicore Processor for Real Time Consumer Electronics at Council of Science and Engineering Policy on April 10, 2008

http://www8.cao.go.jp/cstp/gaiyo/honkaigi/74index.html

第74回総合科学技術会議【平成20年4月10日】

第74回総合科学技術会議の様子(1)

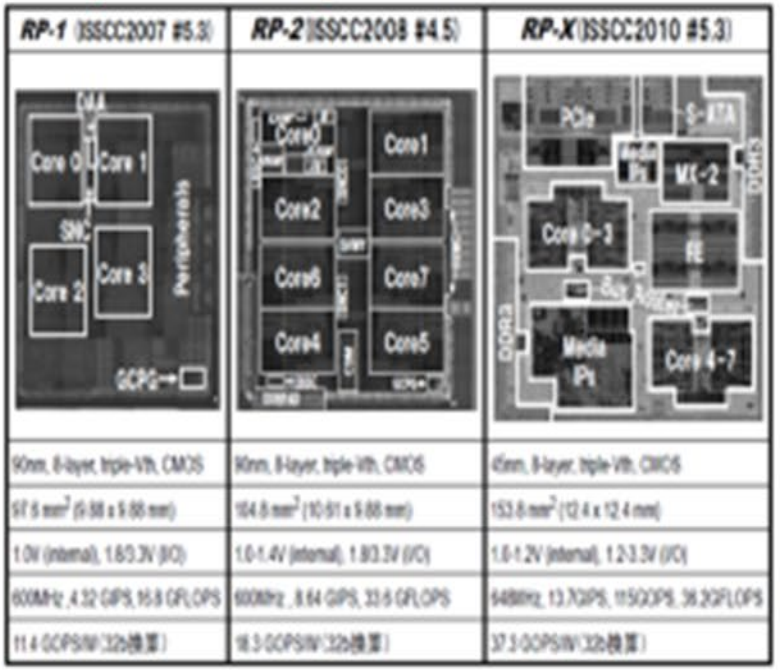
第74回総合科学技術会議の様子(2)

第74回総合科学技術会議の様子(3)

第74回総合科学技術会議の様子(4)

Codesign of Compiler and Multiprocessor Architecture since 1985

4 core multicore RP1 (2007), 8 core multicore RP2 (2008) and 15 core Heterogeneous multicore RPX (2010) developed in NEDO Projects with Hitachi and Renesas



Prime Minister FUKUDA is touching our multicore chip during execution.

Future Multicore Products with Automatic Parallelizing Compiler

Next Generation Automobiles

- Safer, more comfortable, energy efficient, environment friendly
- Cameras, radar, car2car communication, internet information integrated brake, steering, engine, moter control

Smart phones

-From everyday recharging to less than once a week
- Solar powered operation in emergency condition
- Keep health

Advanced medical systems

Cancer treatment,
Drinkable inner camera

- Emergency solar powered
- No cooling fun, No dust , clean usable inside OP room

Personal / Regional Supercomputers

Solar powered with more than 100 times power efficient : FLOPS/W

- Regional Disaster Simulators saving lives from tornadoes, localized heavy rain, fires with earth quakes

World Top Computer Symposium ACM/IEEE ISCA 2025 will be held at Waseda University on June 21-25, 2025.

Co-Chairs: Prof. Jean-Luc Gaudiot (IEEE CS President 2017, UCI)

Prof. Hironori Kasahara (IEEE CS President 2018, Ex-SEVP, Waseda)

It is also well-known that the ACM Turing Award Lectures are held at the ACM/IEEE ISCA (International Symposium on Computer Architecture).