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The 10th Anniversary of the Research Center for Applied Perceptual Science: ReCAPS' Aims and Achievements*

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Abstract

Founded in 2013, the Research Center for Applied Perceptual Science (ReCAPS) of the Faculty of Design, Kyushu University is celebrating its 10-year anniversary. The purpose of this article is to describe the aims of ReCAPS and to give an overview of its activities and its functioning as an open platform for scientific exchange in the field of perception.

1 Introduction: ReCAPS

This year, the Research Center for Applied Perceptual Science (ReCAPS) celebrates its 10th anniversary.¹⁾ ReCAPS was founded in 2013, by Prof. Emeritus Yoshitaka Nakajima, built on the foundations of three earlier organizations: the 21st Century COE Program “Design of Artificial Environments on the Basis of Human Sensibility” (2003-2008) led by Prof. Emeritus Yutaka Tochihara, the Center for Applied Perceptual Research (2010-2012), and the Interdisciplinary Base for Perceptual and Cognitive Research (2012-2014).

The mission of ReCAPS is to function as a platform for research activities related to perceptual science. As such, it brings together researchers active in multidisciplinary fields related to perceptual psychology (e.g., visual perception, auditory perception, haptics, and the perception of taste and smell), cognitive science, brain science, signal processing, mathematical science, and information technology. The core of its members is active at Kyushu University's Ohashi campus, (i.e., the Faculty of Design), with members from the Departments of Acoustic Design, Media Design, Design Futures, and Environmental Design. Other members are active at Ito campus (i.e., the Faculty of Human-Environment Studies, the Faculty of Information Science and Electrical Engineering, and the Faculty of Humanities) and at RIKEN. Since 2017, ReCAPS has a special collaboration with the Research and Development Center for Five-Sense Devices, at Ito campus.

With its members active in many different fields at many different locations, an important function of Re-

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CAPS is to bring them together for scientific exchange pertaining to any field related to (applied) perception. Scientific exchange is achieved mainly through so-called “Perceptual Frontier Seminars”, in short, “PFS”. Within its 10 years of existence, the PFS has been held 63 times, comprising more than 400 scientific presentations. Details of each PFS are provided in the yearly ReCAPS annual reports,²⁾ which are available via the Kyushu University Repository. In this report, we provide a coarse overview of the PFS series, based on which one can identify the main aims of ReCAPS:

- To exchange research ideas and results among ReCAPS members, their students (including postdoctoral, graduate, and even undergraduate students), and visiting (international) researchers;
- To exchange research ideas and results in English, as preparation for journal paper writing and to practice English presentations for (international or domestic) conferences;
- To provide guidance to students and their research progress via discussion and answering questions from researchers who are not their own supervisors.

2 Overview of ReCAPS activities: the Perceptual Frontier Seminars (2013-2023)

2.1 Method

The data source of the PFS series is the “Schedule” pages on the ReCAPS Website,³⁾ which has announced and archived all the activities at ReCAPS. In addition to PFS, the presentations made at the English sessions in the Auditory Research Meeting were included on the Website because ReCAPS has cosponsored the meetings, and ReCAPS members have been deeply involved in the organization. Similarly, the presentations at “The 22nd Virtual Reality Psychology International Conference” and two poster symposiums were included. These past data have been compiled in the Annual Report of ReCAPS and archived at the Kyushu University Library with the publication lists of the members.²⁾ The first authors of presentations were sorted into the following categories and counted with JMP Pro.⁴⁾

1. International guests.
2. Domestic guests.
3. Faculty members on Ohashi campus.

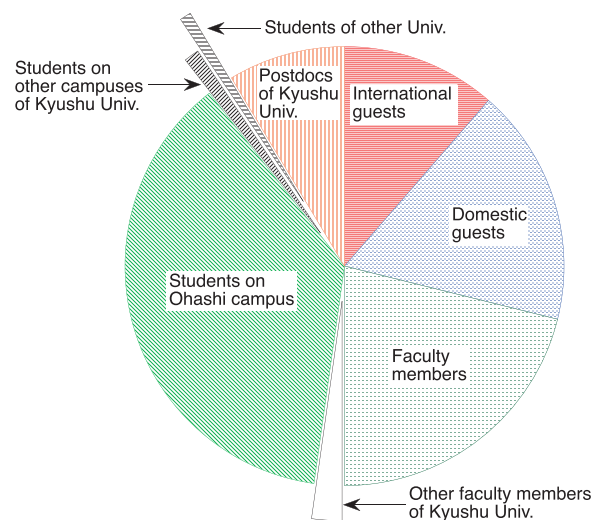


Fig. 1 Percentages of presentations represented in a pie chart. The total number of presentations was 405.

4. Faculty members on other campuses of Kyushu University.
5. Students on Ohashi campus.
6. Students on other campuses of Kyushu University.
7. Students of other universities.
8. Postdoctoral fellows of Kyushu University.

Lists of conferences cosponsored by ReCAPS and special lectures were also produced from the same data source.

2.2 Results

The number of presentations in each fiscal year is summarized in Table 1. The percentages of presentations (bottom line of Table 1) are depicted in Fig. 1. Figure 1 shows that about half of the presentations were done by professional researchers and international guests. Some of the international guests repeatedly visited us as shown in Fig. 2.

At the same time, the other half of the presentations were provided by students and postdocs. In line with the PFS aims mentioned above, it is evident that the Seminars have worked as an ideal platform for exchanging new ideas among researchers and guiding students and postdocs. To stimulate in-depth discussion, poster sessions have been held regularly, for example, during the 63rd PFS held to commemorate the 10th Anniversary of ReCAPS (Figs. 3 and 4).

Table 1 The number of presentations in each category per fiscal year (as of 15 November 2023).

Fiscal year	International guests	Domestic guests	Faculty members	Other faculty	Ohashi students	Other campuses	Other Univ.	Postdocs	Subtotal
2013	8	20	16	2	9	2	2	7	66
2014	9	4	11	0	9	1	0	6	40
2015	2	1	4	0	2	0	0	3	12
2016	6	2	14	1	23	0	1	7	54
2017	1	6	9	0	16	0	0	3	35
2018	11	7	9	3	35	1	0	2	68
2019	5	7	3	0	22	0	0	1	38
2020	0	1	0	0	1	0	0	1	3
2021	0	4	3	1	2	0	0	3	13
2022	4	10	5	0	16	0	0	1	36
2023	0	9	11	2	16	1	0	1	40
Total	46	71	85	9	151	5	3	35	405
(%)	11.4	17.5	21	2.2	37.3	1.2	0.7	8.6	100

Table 2 List of cosponsored meetings.

Date	Meeting title
12 October 2013	The 22nd Virtual Reality Psychology International Conference
28 January 2014	Kickoff Symposium: Research and Development Center for Taste and Odor Sensing
21 November 2014	Kickoff Symposium: Physiological Anthropology Research Center
20–21 December 2014	Auditory Research Meeting, the Acoustical Society of Japan
27 January 2015	The 1st Physiological Anthropology Seminar
3 February 2015	The 2nd Physiological Anthropology Seminar
5 February 2015	The 3rd Physiological Anthropology Seminar
6–8 March 2015	The 48th Colloquium on Perception and the International Five-Sense Symposium
13–15 November 2015	The 7th International Conference on Soft Computing and Pattern Recognition (SoCPaR 2015)
12–13 December 2015	The 2nd Annual Meeting of the Society for Bioacoustics
14–15 May 2016	Spring Meeting of the Japanese Society for Music Perception and Cognition
17–18 December 2016	Auditory Research Meeting, the Acoustical Society of Japan
27 July to 1 August 2017	The 8th International Conference on Swarm Intelligence (ICSI 2017) & The 2nd International Conference on Data Mining and Big Data (DMBD 2017)
22–26 October 2017	Fechner Day 2017: The 33rd Annual Meeting of the International Society for Psychophysics
20 December 2017	Joint Seminar: Five Senses
14–15 December 2019	Auditory Research Meeting, the Acoustical Society of Japan
17–18 December 2022	Auditory Research Meeting, the Acoustical Society of Japan

Cosponsored conferences have been held regularly as well, as listed in Table 2, while special lectures are in Table 3. It should be noted that ReCAPS has cosponsored some important international conferences in the areas of experimental psychology, visual perception, auditory per-

ception, music perception, acoustics, bioacoustics, and informatics.

Table 3 List of special lectures.

Date	Lecture	Lecturer
13 December 2013	Evolutionary Computation: Tutorial and Panel Discussion	Hideyuki TAKAGI
9 January 2014	Multivariate Analyses for Perceptual Science	Kohei ADACHI
24 June 2014	Non-negative Matrix Factorization	Hirokazu KAMEOKA
17 July 2014	Bioacoustics: Acoustical environment analysis and innovative measurement techniques applied to auditory research	Hiroshi RIKUIMAROUX
11 August 2014	An Introduction to Independent Component Analysis (ICA)	Noboru MURATA
8 June 2015	An Introduction to Some Topics on Blind Signal Processing (BSP)	Xizhi SHI
7 October 2016	Lecture by Dr. Hidemi KOMATSU	Hidemi KOMATSU
25 January 2018	Applied Perceptual Science Lecture	Hirohisa YAGUCHI

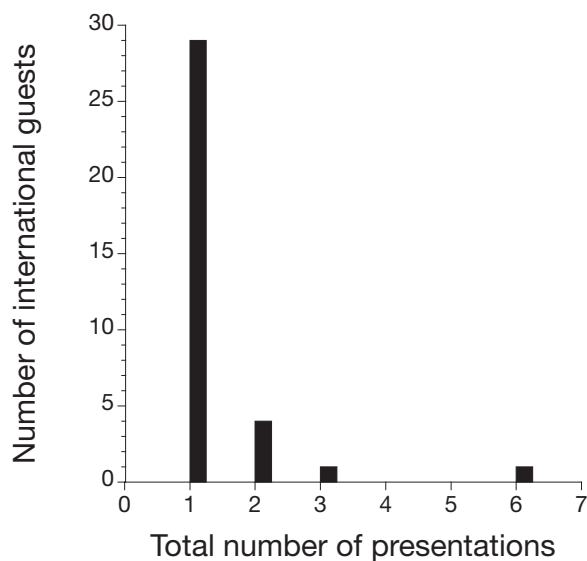


Fig. 2 A histogram showing the number of international guests (frequency) categorized according to the total number of presentations by each person during the first 10 years of ReCAPS.

3 Final notes

Overall, ReCAPS and the Perceptual Frontier Seminars so far have strongly contributed to the development of research ideas on perceptual science at Kyushu University, and the Ohashi campus in particular. ReCAPS will continue to promote scientific exchange in fields related to perception in the future, ideally with the same level of activity as in the past 10 years. The key to this is to organize events that are easily accessible for both professional researchers and students. Scientific discussion should be more important than formal appearance, professional status, or even one's level of scientific English. As commented on by ReCAPS founder Prof. Emeritus Yoshitaka



Fig. 3 Impression of the oral presentations (top) and the poster session (bottom) held during the “ReCAPS 10th Anniversary” PFS (11 November 2023).

Nakajima: “In our Seminars, presentations consisting of just ideas or half-baked research plans are fine, guests are valuable, and the atmosphere should be relaxed and informal. Since most of us are not native speakers of English, ‘bad’ scientific English is fine, as long as the meaning of each sentence is clear enough.”⁵⁾

The current director of ReCAPS, Prof. Hiroyuki Ito



Fig. 4 Group photo taken during the “ReCAPS 10th Anniversary” PFS (11 November 2023).

once stated, “One of our important policies is that each member of ReCAPS should analyze a problem from viewpoints of multiple disciplines. We are open to any potential collaborators who would like to enjoy studies in perceptual science.”⁶⁾ In the spirit of this, ReCAPS encourages its members and their students also in the coming years to collaborate internationally and to report their findings at international conferences and peer-reviewed journals. As such, ReCAPS wishes to further advertise Kyushu University as one of the leading research-oriented universities in Japan and abroad.

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References and notes

- 1) Research Center for Applied Perceptual Science. (2023). *Annual Report 2022-2023*. https://catalog.lib.kyushu-u.ac.jp/opac_detail_md/?lang=1&opkey=B170114064857904&srvc=0&amode=MD100000&bibid=6795103
- 2) Kyushu University Library. (2023, November 15). *Research Center for Applied Perceptual Science Annual Report*. https://www.lib.kyushu-u.ac.jp/en/publications_kyushu/recaps
- 3) Research Center for Applied Perceptual Science. (2023, November 15). *Schedule*. http://www.recaps.design.kyushu-u.ac.jp/plan_e_2023-11.html
- 4) SAS Institute Inc. (2023). *JMP Pro* (Version 17.2.0) [Computer software].
- 5) His message was actually followed by “The key idea of ReCAPS is that high-level research and basic education should stay together in a proper university. Some people try to spend much time and energy just for one of them, and this may enable them to work efficiently, but only for a limited period within a narrow circle. If there are opportunities for (reasonably) diligent students and leading researchers to communicate in a casual but well-motivated atmosphere, they will be productive for a long period, and this attracts new students and collaboration partners. All scientifically flourishing groups in the world offer such opportunities. The PFS is an attempt to create our own place for such scientific communication at Ohashi Campus, which is still on the way to making its research powerfully visible. The present statistics show that the PFS somehow worked. Some guests visited our place twice or more. However, the decrease of foreign guests and international conferences or seminars after the pandemic indicates a challenging phase, probably requiring new impulses.”
- 6) Ito, H. (2020). *Greetings*. http://www.recaps.design.kyushu-u.ac.jp/greetings_e.html