高次視覚情報システム研究室　1

１）当該研究室の研究成果について

　　( ) Excellent　(*) Very Good　( ) Good　( ) Fair　( ) Poor

　　　Scientific reports や Journal of Vision など当該分野では高インパクトファクターの学術誌にコンスタントに掲載されており、大変活発な研究成果を出していると判断する。

２）当該研究室構成員の学会活動について

　　(*) Excellent　( ) Very Good　( ) Good　( ) Fair　( ) Poor

　　　国際学会および国内学会に活発に発表を行っている。

３）当該研究室構成員の社会貢献について

　　( ) Excellent　( ) Very Good　(*) Good　( ) Fair　( ) Poor

　　　学会役員などの活動は相対的に多いとは言えない。また企画運営も RIEC Sympo が多い。高校訪問などのアウトリーチ活動は活発に行っている。

４）当該研究室の競争的資金の獲得状況について

　　(*) Excellent　( ) Very Good　( ) Good　( ) Fair　( ) Poor

　　　少人数ながら毎年複数の研究助成を獲得しており、科研費以外では外部資金を獲得しにくい基礎研究分野にしては受託研究も多数ある。

５）国際共同研究・連携研究・連携教育活動の実績について

　　( ) Excellent　(*) Very Good　( ) Good　( ) Fair　( ) Poor

　　　様々な国の研究者と活発に交流して共同研究を実施し、成果発表を行っている。

６）共同利用・共同研究拠点活動の実績について

　　( ) Excellent　(*) Very Good　( ) Good　( ) Fair　( ) Poor

　　　本研究室が拠点となる共同研究を活発に実施している

７）その他、 総合的なコメント

　　　人間の高次脳機能に関して、心理物理学実験および脳機能測定など多角的アプローチで活発な研究を展開している。同じ視覚認知分野であるがメンバーは各々独自のベクトルを持ち活躍している。一方で、全員参画＋学外の研究プロジェクトが企画・実施できれば、国際的な研究拠点となると考えられる。

高次視覚情報システム研究室　2

1. How would you evaluate the research activities in this period?

　　(*) Excellent　( ) Very Good　( ) Good　( ) Fair　( ) Poor

The visual cognition and systems lab has published 50 journal Articles in the past five years, 10 per year on average. Topics include a wide range of visual research and mostly published in top-tier journals. Almost double/triple the amount for conference presentations, Indicating that the lab members have been actively participating international and domestic conferences.

2. How would you evaluate the activities of the members in the laboratory for the academic societies?

　　(*) Excellent　( ) Very Good　( ) Good　( ) Fair　( ) Poor

The lab members were actively participating activities and committees of various kinds of academic societies, and have been chairs in important domestic and international conferences/symposiums. The lab PI, Prof. Shioiri, especially, has been served as organizer/chair at important symposia, showing that he's active in helping the lab and the scientific community to act as active participants. A true leader with great leadership.

3. How would you evaluate the contribution of the laboratory to society?

　　(*) Excellent　( ) Very Good　( ) Good　( ) Fair　( ) Poor

Usually it is not easy to evaluate the contribution of a lab that's working on basic research to society because the impacts of basic research sometimes are obscure and cannot be easily seen. Having said that, I would say that this lab has had done some very important basic studies that would have big impact on issues like color and language, multiple stages of attentional processing, head-eye coordinate, and abstract rule learning through simultaneous multisensory integration. They have served to educational activities outside university and provided instruction and education for industry and public education. They also actively organize various kinds of outreach activities for high school students. This is a lab that connects to the society and continues to show so.

4. How would you evaluate the lab's level of funding?

　　(*) Excellent　( ) Very Good　( ) Good　( ) Fair　( ) Poor

I am not very familiar with Japanese funding system, but according to the report, the total amount of JPSP grant was 66,930k JPY from 2013-15, and 31,350k JPY from 2016-8, and these add up to 98,280k JPY. They were granted yet from other research grant that add up to similar amount. Compared to the level of funding to my own country, the level of funding is high.

5. How would you evaluate the lab's collaborative research, including international joint research and collaborative education?

　　(*) Excellent　( ) Very Good　( ) Good　( ) Fair　( ) Poor

In the past five years, this lab has organized 18 international meetings and had 12 international collaboration projects. In the past three years they published eight journal articles from international collaborations. That is, 2-3 international projects/meetings/international publications per year. This is a very active lab.

6. RIEC is one of Japan's "Joint usage/Research Center" or "Nation-wide Cooperative Research Projects" institutes. How would you evaluate the achievements of work done under this framework?

(*) Excellent ( ) Very Good ( ) Good ( ) Fair ( ) Poor

In terms of "investigating the theory and application of universal science and technology to realize communication, to the enrichment of humanity", this lab aims to understand human brain and mind and has done quite well in this direction. Their findings help understanding human visual functions in natural environments through head-eye coordination and this paper, together with series of papers led to a two-stage model of spatial attention with broad spread at an early stage and local selection at a later stage have been well cited. The color categories for prelinguistic infants and Japanese color lexicon had attracted much attention from media and color vision community.

7. Additional or overall comments

In general, the visual cognition and systems lab has done a great job in the past five years in basic studies, international collaborations, and outreach activities.

高次視覚情報システム研究室　3

1. How would you evaluate the research activities in this period?

　　(*) Excellent　( ) Very Good　( ) Good　( ) Fair　( ) Poor

Members of the Visual Cognition and Systems Research Laboratory and their colleagues have published some 50 papers in refereed journals during the past 6 years, which is very impressive given that there are only 4 Faculty, one of whom was only appointed in May 2018. Just as impressive are the 93 papers in refereed conference proceedings, many of which are likely to be converted into papers during the coming years, and the 48 papers in domestic conferences. In particular, I am very familiar with the Shioiri's research, knowing him personally and having read many of his papers, and I regard him as a highly-respected figure in the field of vision research.

2. How would you evaluate the activities of the members in the laboratory for the academic societies?

　　(*) Excellent　( ) Very Good　( ) Good　( ) Fair　( ) Poor

I am assuming that "academic societies" refers to the activities of members of the laboratory at national and international conferences. Once again, I was very impressed by both the number and the quality of the work presented at the 3 major international conferences in the field of vision and cognition - namely the Asia Pacific Conference on Vision (APCV); the European Conference on Visual Perception (ECVP); and Vision Sciences Society (VSS) in the USA. Their presence at these conferences means that the names of Shioiri, Kuriki and Tseng have become well-known and highly-regarded figures in the international community.

3. How would you evaluate the contribution of the laboratory to society?

　　( ) Excellent　(*) Very Good　( ) Good　( ) Fair　( ) Poor

I was impressed by the number and range of activities that demonstrate the contribution of the laboratory to society, including the popular lectures given in Hong Kong and China; the research lectures and seminars to industry; and the lectures given to high school students. The topics of vision and visual cognition lend themselves to popular audiences and those lectures and seminars play an important role in encouraging young people to study vision, visual cognition and artificial vision systems as important scientific subjects in their own right as well as helping them to appreciate the applications of these fields in a modern technological society.

4. How would you evaluate the lab's level of funding?

　　(*) Excellent　( ) Very Good　( ) Good　( ) Fair　( ) Poor

It is difficult for me to make a truly objective assessment of the lab's level of funding without an appropriate benchmark for comparable laboratories in Japan. However, the information provided in the Research Laboratory Reference Data shows that 2 of the Faculty - Shioiri and Kuriki - are extremely well-funded by a range of sources including the KAKENHI, MEXT and JST Crest. I would hope and expect that Tseng's extensive funding from before he arrived at Tohoku University will soon be replaced by grants from Japanese sources.

5. How would you evaluate the lab's collaborative research, including international joint research and collaborative education?

　(*) Excellent ( ) Very Good ( ) Good ( ) Fair ( ) Poor

Once again, I was very impressed by the number and range of the lab's collaborative research, both within Japan and overseas. This was very evident in the number of papers and the range of authors in the publication list. In particular, I was struck by the well-established links and collaborations of the laboratory with Taiwan and Hong Kong and the collaborative research involving distinguished overseas colleagues including Cavanagh, Spillmann and Sperling.

6. RIEC is one of Japan's "Joint usage/Research Center" or "Nation-wide Cooperative Research Projects" institutes. How would you evaluate the achievements of work done under this framework?

　( ) Excellent (*) Very Good ( ) Good ( ) Fair ( ) Poor

This question is particularly difficult for an outsider to answer and all I can do is to make some comments on the list of RIEC Cooperative Research projects. In this respect, it would appear that all 3 of the established Faculty (Shioiri, Kuriki and Tseng) are involved in an impressive range of projects using both psychological, physiological and modelling techniques, either as Principal Investigators or Co-investigators. In my view, these cooperative research projects are extremely important for the understanding the mechanisms of human, animal and artificial intelligence systems. (My evaluation score of 4 is simply due to my lack of knowledge of the these schemes).

7. Additional or overall comments

My evaluations of the Visual Cognition and Systems Research Laboratory are based principally on the extensive documentation provided by members of the lab. In addition, I am familiar with much of the research undertaken by members of the lab and I have read of a number of their major publications. I was also fortunate in being able to visit the laboratory last November and see for myself the facilities and the research done by members of the lab. My overall evaluation is that the Visual Cognition and Systems Research Laboratory is an impressive, productive and thriving research group.