

(For JSPS Fellow)

Form B-2
(FY2018)

Date (日付)
13.03.2019 (Date/Month/Year: 日/月/年)

Activity Report -Science Dialogue Program-
(サイエンス・ダイアログ事業 実施報告書)

- Fellow's name (講師氏名) Bogna Ignatowska-Jankowska
(ID No. P17388)

- Participating school (学校名): Kyuyo SHH High School, Okinawa

- Date (実施日時): 27.02.2019 (Date/Month/Year: 日/月/年)

- Lecture title (講演題目): ***Understanding mouse behavior: from 3D motion capture to behavioral transcriptomics***

- Name and title of your accompanying person (講義補助者 職・氏名)
N/A

- Lecture format (講演形式):

◆Lecture time (講演時間) 60 min (分), Q&A time (質疑応答時間) 30 min (分)

◆Lecture style (ex.: used projector, conducted experiments)

(講演方法 (例: プロジェクター使用による講演、実験・実習の有無など))

Power Point presentation including videos

- Lecture summary (講演概要): Please summary your lecture 200-500 words.

Behavior is an expression of the brain function, and its importance in providing insight into physiology is still growing. While there are many reliable methods to assess behavior, some aspects of behavior have been difficult to study. One common limitation of automated behavior measurement is video analysis, and for complex behaviors standard 2D video-tracking methods are not sufficient. We have demonstrated how high-resolution 3D movement tracking allows analysis of variety of behaviors without losing precision. Such tools for assessment of motor function could be extremely useful in research on neurological and pain-related disorders as well as decoding emotional states. On the other hand, internal, subjective aspects of animal experience can be approached not only by complex classical methods (e.g. operant conditioning) but also by new method of behavioral transcriptomics, which allows for direct linking recent experiences of an animal with simple transcriptional signatures uniquely characterizing each experience. This tool allows for decoding past experiences and infer about internal state

of an animal but also provides a simple method to identify new genes and brain regions involved in particular behaviors and allowing to manipulate them. These tools provide whole spectrum of new possibilities in studying both motor and subjective aspects of behavior that could be applied both in basic and translational research and will likely contribute to exciting discoveries in biology and medicine.

- Overall advice or comments to future participants in the program (今後の講師へのアドバイス):

N/A

- Other noteworthy information (その他特筆すべき事項):

N/A

- Impressions and comments from the accompanying person (講義補助者の方から、本事業に対する意見・感想等がありましたら、お願いいたします。)

N/A