

Form B-2  
(FY2020)  
Must be typed

Date (日付) **25.12.2020**  
(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): **Haney Samir Mohamed Mohamed Sayed Ahmed** (ID No. **P19101**)

- Name and title of the accompanying person (講義補助者の職・氏名)

**Professor Gen Watanabe, professor and head of physiology laboratory, Tokyo Nokodai**

- Participating school (学校名): **Suwa-Seiryu High School**

- Date (実施日時): **17 December 2020** (Date/Month/Year: 日/月/年)

- Lecture title (講義題目):

**Roles of Animals in our Lives**

- Lecture format (講義形式): **PowerPoint**

◆Lecture time (講義時間) **90 min** (分), Q&A time (質疑応答時間) **30 min** (分)

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

(講義方法 (例: プロジェクター使用による講義、実験・実習の有無など))

**Online using zoom**

- Lecture summary (講義概要): Please summarize your lecture within 200-500 words.

Animals have imperative roles in our lives. Animals play an important role in the ecological balance of the earth. An animal's value as a companion might be more difficult to measure. Small pets such as dogs can help to reduce anxiety in psychiatric patients and induce improvements in cognitive and social functioning. Besides, helping the blind, old, and individuals with other physical challenges. Food animals are an important source of foods (meat, milk, and by-products), and other industrial products (hide, wool, hair, and silk). Bees, bats, and birds are important pollinators that are responsible for the pollination of around 35 percent of crops that feed the entire human population. Different animals are used to discover the efficacy and safety of many vaccines and medicines before human use. Covid-19 Vaccine was designed by experiments on mice and monkeys. Chimpanzees were used for discovering the hepatitis B vaccine. Dogs were used for the discovery of insulin in the early 20th century; this has saved and improved the lives of millions of diabetics worldwide. Also, many advances in breast cancer, malaria, multiple sclerosis, and tuberculosis are directly attributable to animal experimentation. All the experiments on animals should follow the guidelines of animal ethical organizations. Nowadays, as technology moves forward, there is an urgent need to reduce the number of animals for experiments by using some alternatives such as cell lines and organoids that mimic the internal environment of organs. Goats

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are important animals for research and production. The goat was the first farm animal to be domesticated. Goats are a good experimental model for cardiovascular research of humans because of the vertical orientation of the heart and the relative heart size similar to humans. Our research group studied very important physiological rationales using the goats as an experimental model. Using recent diagnostic imaging such as color Doppler ultrasonography, and recent diagnostic microRNAs biomarkers, we investigated important physiological events. Melatonin, the hormonal product of the pineal gland, was studied extensively by our groups, and its roles for superovulation, embryo production, and alleviating the heat stress conditions were investigated. Melatonin is the strongest antioxidant inside our body and acts to save the body against heart diseases, cancer, and Alzheimer's disease (AD). Research can promote a better world to live in. Animals are very important in our lives. Humans can not survive without animals as animals contribute to nature in ways that we will never be able to.

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

**None**

- 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。):

**Very interesting**

**Very enthusiastic**