Form B-2
(FY2021)
Must be typed

Date（日付）
 16/06/2021 　　　（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）:　　 Baltieri Manuel 　　　　　　　（ID No.　P19809 　）

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

- Participating school（学校名）:　 Fukushima Prefectural Fukushima High School
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・　- Date （実施日時）:　 15/06/2021 　　　　　　　（Date/Month/Year:日/月/年）

- Lecture title（講義題目）:
　　 Research and fundamental questions 　　　　　　　　　　　　　

- Lecture format（講義形式）:
　　◆□Onsite ・ ☒Online (Please choose one.)（対面 ・ オンライン）（（どちらか選択ください。））
　　◆Lecture time（講義時間） 50 　　min（分）, Q&A time（質疑応答時間） 15 　　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））
　　　 Slides with a lot of visual material (videos, images, etc.) 　　　　　　

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

In this presentation I will cover some of my personal experience with the world of research: what I believe research is, why I find it interesting and what I believe it can provide to people outside of this field and that perhaps don't know what research is about.

I will then introduce some topics that slowly got me into this field, initially fascinated by things I wanted to learn more about. These topics are a mix of ideas from different branches of science and engineering: computer science, physics, mathematics, biology and neuroscience. I really enjoy to combine several different subjects in order to learn something new!

More specifically, I will cover some ideas related to:
- **Emergence** (創発) and swarm intelligence (群知能), how the combination of many simple systems (for example, many ants) can create very complex behaviour (for example, an

ant colony)

- **Artificial intelligence** (AI), what does it mean to create a new intelligence? How are people using "neural networks" nowadays to study AI?
- **Artificial life**, or how we try to understand what living systems are (for example, 1) what are the differences between a robot and a dog? 2) can we create an artificial dog that behaves like a real one?)

Homeostasis (恒常性), or the idea that life can only exist in very specific situations (for example, if it's too cold or too dark living systems cannot survive, but they also cannot survive if it's too hot or too bright, so how do we explain what is good and what is not?)

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

- Impressions and commnets 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。）: