



SCIENCE LITERACY

Seminar Leader: **Miranda Tyson**

House Leader: **Akinori Shimizu**

Course Description

This course aims to introduce students to the concept of “science literacy.” A skill that everyone should have, science literacy uses critical thinking to analyze everyday situations, so one is not swayed by the media’s portrayal of scientific concepts. One does not need to be a scientist to think scientifically; thus, this seminar is designed for people of all backgrounds, no matter your level or interest in actual science! By the end of the seminar, students will have the skills to analyze scientific events, and will have methods to determine whether something is likely to be true or not. As examples of science in the media, we will discuss vaccines, genetically modified organisms (GMOs), and alternative medications.

Schedule

Day 1: *Introduction to Concepts*

On the first day, we will aim to understand the meaning of scientific literacy. Through our discussion about the video “Battling Bad Science,” we will gain tools to analyze arguments presented in the media about the efficacy and safety of vaccines.

Day 2: *Alternative Medication*

We will aim to understand how and why alternative medicine and “miracle cures” might be met with more caution, and to understand how the media portrays that kind of medication. We will examine specific examples of advertising miracle cures in the Japanese media, and discuss what kind of role the media should play in science and medicine.

Day 3: *Genetically Modified Organisms (GMOs)*

We will aim to understand the benefits and drawbacks of the use of genetically modified organisms in food production. We will discuss why some people are afraid of GMOs, how we can do research to better understand them, and finally we will analyze how the media and government often portrays them in both America and Japan.

Day 4: *Presentations: Case Studies*

Finally, students will have an opportunity to show their ability to analyze everyday events in a scientifically literate way. We will provide you with case studies of science in the media, similar to those discussed in the first three days, for you to present to the class. In your presentation you will analyze the case study, thinking critically using what we learned about past cases to understand them better (see next section).



Final Exercise

Analyze and discuss case studies provided by the instructors. Discuss how we can apply critical thinking and research to everyday life and become more scientifically literate.

Pre Assignments and Reading List

- “Battling Bad Science” by Ben Goldacre
https://www.ted.com/talks/ben_goldacre_battling_bad_science (Japanese transcript available under video)
- Name 2 ways that scientific studies are manipulated so they show favorable results (i.e., only testing the result against a placebo and not against a competing medication).

Message from the House Leader

Hi, everyone. I’m Akinori Shimizu, a senior of the University of Tokyo and majoring chemical engineering. I’m from Nagasaki, which is the westest prefecture in Japan and has many many mountains and heavy storms in rainy season. The theme we will deal with is “Science Literacy” which sounds really difficult, and it is certainly difficult issue in this era. We’re surrounded by many technologies and science behind such technologies. Without appropriate knowledge and ability to think whether something is true or not, we cannot judge rationally and suffer a loss. In this lesson, through using some case studies related to technologies and science, we’ll improve our literacy towards science. Please feel free to join!!

Message from the Seminar Leader

I’m Miranda, and I will be the seminar leader for Science Literacy! Though I care a lot about science and enjoy taking classes in it, my main focus in school is East Asian Studies and that is why I am studying both Japanese and Korean. I also say terrible 親父ギャグ all the time, and you’ll probably hear some of them in your time here! Outside of school, I figure skate and work at a ramen shop. よろしくお願ひします!