

THE FIRST HALF YEAR OF THE SCIENCE INTERPRETER TRAINING PROGRAM AT  
THE UNIVERSITY OF TOKYO:  
FROM THE VIEWPOINTS OF GRADUATE STUDENTS

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### Abstract

The Science Interpreter Training Program (SITP) in the Graduate School of Arts and Sciences at the University of Tokyo in Japan was launched in October 2005. This paper describes this program from the viewpoints of the graduate students enrolled in the program after the first half year of the eighteen-month program.

The word “interpreter” includes the meaning of providing insight on science, technology, and society to the public and to researchers. The faculty of the program comes from many different graduate schools and institutes of the university and also includes journalists, artists, NPO personnel, etc. The fourteen students are from nine different graduate schools. Their (our) motives for the program and impressions vary greatly. By using the opportunity to get together, the students are beginning collaborating projects.

The future goals of the students are also diverse. The experience of learning skills and attitudes for science and technology communication here will help them in many situations even outside science and technology communication.

Keywords: science interpreters, training program, graduate students, Japan

## 1. Introduction

In Japan, the national government is now pushing ahead with science and technology (ST) communication. This has followed a sequence of events in Japan and internationally in the last decade, such as the Science and Technology Basic Law enacted in Japan in 1995; the Science and Technology Basic Plan (Phase 1: 1996 to 2000, Phase 2: 2001 to 2005, Phase 3: 2006 to present); the World Conference on Science (Budapest Conference) in 1999, declaring “science in society and science for society”; the establishment of the National Museum of Emerging Science and Innovation (Miraikan) in Tokyo in 2001; and The White Paper on Science and Technology 2004, subtitled Science and Technology and Society in the Future [1].

## 2. Establishment of the Program

### 2.1 Science “Interpreter” Training Program

In May 2005, three of eight plans for training ST communicators were funded for five years as the Programs for Fostering Talent in Emerging Research Fields, Special Coordination Funds for Promoting Science and Technology, by the Ministry of Education, Culture, Sports, Science and Technology (MEXT).

The Science Interpreter Training Program at the University of Tokyo is one of the three programs funded by MEXT. It aims to train ST “interpreters” who will be able to not only adapt and communicate matters related to ST, but also understand them and provide insight for ST and society [2].

This course is offered as a sub-major degree for about ten graduate students or postdoctoral researchers in the university who have their own research specialties in the natural sciences or other disciplines. Each student is required to get more than twenty units in the one-and-half-year course. They will work on a final project under a supervisor from the faculty, possibly including presentations of their own research in any media.

### 2.2 Faculty

This is one of earliest attempts at the University of Tokyo in which so many faculty from several schools of the university have cooperated and offered courses.

Several dozen faculty have got together for the program. It consists of seven core faculty members and about ten other professors from the university, two invited professors (a prominent science writer and a professor emeritus in science and technology studies) and other instructors from outside the university, such as a director of an NPO, TV producers, artists, a planetarium producer, novelists, and journalists. The full-time staff consists of two research associates who arrange the courses.

Table 1. Members of Faculty

Professors of the university	Department
MATSUI, Takafumi	Graduate School of Frontier Sciences
ISHIURA, Shoichi	Graduate School of Arts and Sciences
KURODA, Reiko	Graduate School of Arts and Sciences
KOMIYAMA, Susumu	Graduate School of Arts and Sciences
HIRONO, Yoshiyuki	Graduate School of Arts and Sciences
FUJIGAKI, Yuko	Graduate School of Arts and Sciences
NAKASUKA, Shinichi	Graduate School of Engineering
SAKURA, Osamu	Graduate School of Interdisciplinary Information Studies
OHIMA, Mari	Institute of Industrial Science
SUZUKI, Yoichiro	Institute for Cosmic Ray Research
KOU, Tsuneo	University Museum
Tom GALLY	College of Arts and Sciences
Invited instructors	Occupation
MURAKAMI, Yoichiro	International Christian University
TACHIBANA, Takashi	Journalist
UEDA, Akifumi	NPO, Citizens' Science Initiative Japan
OHIRA, Takayuki	Planetarium producer
SAKAI, Mariko	Edogawa University
SENA, Hideaki	Novelist
TAKADA, Yoichi	Artist
TAKASHI, Mariko	Asahi Shimbun
MATSUMOTO, Toshihiro	NHK (Japan Broadcasting Corporation)

### 2.3 Students (Trainees)

From among forty-two applicants, fourteen passed the paper test and interview in September 2005. They are eight master's students and six doctoral students from nine different graduate schools of the university:

- Graduate School of Humanities and Sociology
- Graduate School of Arts and Sciences
- Graduate School of Science
- Graduate School of Engineering
- Graduate School of Agricultural and Life Sciences
- Graduate School of Medical Science
- Graduate School of Pharmaceutical Sciences
- Graduate School of Mathematical Science
- Graduate School of Frontier Sciences

## 3. Classes

### 3.1 Lectures and Discussion in Classroom

The classes of the first semester from October 2005 to March 2006 were held from Monday to Saturday as shown in Table 2. In the second semester, no classes were offered on Tuesday and Thursday for the convenience of students coming from other campuses (Table 3).

Table 2. Classes of the first semester

Course title	Key words	Faculty
ST Interpreter I	not only “how to interpret?” but “what to interpret?”; group presentations on energy, bioethics, etc.; ST policy, GMO, environmental information	Prof. KURODA, Reiko and invited lecturers, including government officials and other professors
ST Expression I	media literacy; broadcasting, museum, film	MATSUMOTO, Toshihiro (NHK) SAKAI, Mariko (Edogawa University) (TV producers)
Practice of ST Expression I	workshop, art and science, planetarium	OHIRA, Takayuki, planetarium producer Prof. OSHIMA, Mari TAKADA, Yoichi, artist
Practice of ST Writing I	“why interpret?,” newspaper articles, interviews, business	SENA, Hideaki, novelist TAKAHASHI, Mariko (Asahi Shimbun), journalist and other novelists, writers, and CEO
ST Writing I	essays, TV programs, websites	Prof. TACHIBANA, Takashi, journalist and visiting lecturers such as editor and TV producers
Practice of ST Interpreter I	writing, science and pseudo-science, magazines	Prof. HIRONO, Yoshiyuki Prof. ISHIURA, Shoichi Prof. SAKURA, Osamu and a visiting lecturer (journalist)
Contemporary ST I	earth sciences, seismology, astronomy, meteorology	Prof. MATSUI, Takafumi and other professors
ST Literacy I	citizen science, history of science, science, technology, and society	Prof. MURAKAMI, Yoichiro UEDA, Akifumi (NPO, Citizens’ Science Initiative Japan)
Foundations of ST Communication I	scientific organizations, academic societies; science, technology, and society; discussion	Prof. FUJIGAKI, Yuko Prof. HASEGAWA, Toshikazu Prof. KOMIYAMA, Susumu Prof. MATSUI, Takafumi Prof. OSHIMA, Mari Prof. SAKURA, Osamu

Table 3. Classes of the second semester

Course title	Faculty Practice
of ST Writing II (English)	Prof. Tom GALLY
Contemporary ST II	Prof. KOMIYAMA, Susumu Prof. NAKASUKA, Shinichi
Foundations of ST Communication II	Prof. HIRONO, Yoshiyuki Prof. ISHIURA, Shoichi Prof. KURODA, Reiko Prof. MURAKAMI, Yoichiro Prof. OSHIMA, Mari Prof. TACHIBANA, Takashi
ST Literacy II	Prof. FUJIGAKI, Yuko Prof. MURAKAMI, Yoichiro UEDA, Akifumi
ST Writing II	Prof. TACHIBANA, Takashi
Practice of ST Interpreter II	Prof. HIRONO, Yoshiyuki Prof. ISHIURA, Shoichi
Practice of ST Communication II	Prof. HASEGAWA, Toshikazu Prof. SAKURA, Osamu

### 3.2 Products of the Program

In the classes, students made several products such as writings, workshops, and so on. Among them, a series of three interviews with faculty members on being an “interpreter” and a collection of essays by students is planned to be published on the Web and in other forms.

### 3.3 Other Activities

#### 3.3.1 Field Trip to Super-Kamiokande

To experience the real on-site research, a field trip to Super-Kamiokande (Super-KAMIOKA Neutrino Detection Experiment, a large water Cherenkov detector for cosmic particles) was held in November 2005.

#### 3.3.2 Workshop with School Children

To experience the real field of communication, a workshop of science communication with art was held with an artist in March 2006.

#### 3.3.3 Museum Trip

As class activities, students had trips to the National Museum of Emerging Science and Innovation (Miraikan) in February 2006 and the National Science Museum in March 2006.

### 3.4 Activities by Students Themselves

Outside the classes, students have begun several projects.

#### 3.4.1 Website

A website for ST communication is now being constructed by several students.

#### 3.4.2 Science Communicator Meeting of Youth on 18 February 2006

At a meeting organized by several students, forty-two participants from various institutions introduced their activities on ST communication to each other.

#### 3.4.3 Science Café in April 2006

As one of the events for Science and Technology Week in Japan, several students held a talking event with a researcher, called Science Café, in Sapporo, Hokkaido, in collaboration with others.

#### 3.4.4 Other Activities

Some students have performed as interpreters in their own fields. For example,

- writing columns in newspapers and talking at schools and a company about a student satellite project,
- writing “science literacy quizzes” for a journal,
- interviewing researchers for the website of an institute of the university,
- assisting with the editing of a book on climate change,
- working as ST interpreters at a museum,
- preparing a summer camp for high school students,
- holding reading sessions on ST studies.

Seeing their fellow students do activities like the above, other students have been inspired to join them.

## 4. After the First Half Year

We summarized brief interviews with fourteen students in March 2006, at which point the program had run for half a year. The questions are divided into roughly three categories: motive for enrolling in the program, impressions of the first half year of the course, and their own future goals.

### 4.1 Motive

- I wanted to feel the beauty of science as field work at Super-Kamiokande.
- I wanted to learn good ways to explain to people what I am doing.
- I wanted to know the value systems of people who are not scientists.
- I wanted to consider science and society from a viewpoint between them.
- I wanted to consider my own ST communication activities.
- I wanted to consider the quality of mass media.
- I wanted to work as a science journalist.
- I was interested in ST education.
- I wanted to have connections to the larger society.

- I wanted to explore the possibility of keeping in touch with science not as a researcher.
- I wanted to deepen the perspectives towards people and society, as an environmental researcher looking at nature.
- I wanted to meet people who are prominent in ST communication.
- I wanted to get techniques such as writing skills.

## 4.2 Impressions of the Course

- I think my writing and communication skills have improved.
- I could meet other students and faculty who share the ambition in ST communication and so on.
- I felt the great zeal of faculty members who are prominent at the forefront of society.
- I learned that there are many standpoints, and I could see myself in relation to others.
- I learned the view of the media.
- I saw some politics among ST.
- I learned the discussions among Science, Technology, and Society and the Public Understanding of Science (PUS).
- By meeting people at the cutting-edge in ST communication, I felt it was exciting and also tough.
- At job applications and interviews, the experience of the classes like writing and interviewing greatly helped me.

## 4.3 Future Careers

- For example, national government, consultant firm, exhibition company, university, research institute, mass media, writer, journalist, etc.
- My preference is to establish a company that will make and sell kits for scientific experiments.
- I want to produce a website of ST communication.
- I want to continue doing science communication especially in the field.
- In the future I want to go into university administration.
- With this human network constructed here, I want make something happen.
- In the near future, maybe I will not act as an ST interpreter.

## 5. Potential of Science and Technology Communicator Training Programs

From the remarks of the brief interviews above, we may draw the following tentative conclusions about ST communicator training programs in general.

### 5.1 Training Programs for Graduate Students

SITP provides a great opportunity for various graduate students to get together. As seen in the remarks above, students could see themselves in new ways, through discussions with people from different disciplines, backgrounds, and future visions.

At the same time, students share similar concerns about one particular topic, here ST and society, nurtured for many years in their individual disciplines.

Even though the graduate students work on their own research, they also come together frequently, even for midnight meetings.

### 5.2 Diversity of Science and Technology Communication

The reason that the program has interested many graduate students and faculty members is that it deals with ST communication. Universities are rich in human resources for science and technology, and also science and technology studies. In addition, many guest instructors from the outside can come to universities.

As seen from their remarks, the students came to the program with various motives. Some of them are interested in the beauty of science, while others are a little bit skeptical about ST in relation to society. The future goals that students have are not limited to the narrow meanings of ST communication, like mass media or science writing, but are also directed to their own career vision. They do not participate in the program just to be ST communicators, but to use the experience here for each stage of their professional development.

This variety of the students represents the variety of ST communication. The ST communication we are now learning has many levels. At the most superficial level, the students are developing their skills such as writing, speaking, producing, etc. Moreover, through the discussions, the students consider their attitude or perspective towards ST communication such as accountability, social responsibility, and other wider social viewpoints.

### 5.3 Science and Technology Communicator Training for Future Leaders

Where such training programs and ST communication meet, the programs will provide opportunities for graduate students to think in wider perspectives with students from other disciplines and with professional ST communicators. That will help them in many situations in society in the decades ahead.

## 6. Conclusion

SITP provides a great experience as a sub-major course for graduate students. Like other programs, SITP will be used as an opportunity for individual development. Such programs with wider perspectives including practitioners of ST communication will help graduate students achieve various future goals. As the graduate students pursue their careers, the continuing advances in ST communication aided by SITP will contribute to many areas of society.

### References:

- [1] Ministry of Education, Culture, Sports, Science and Technology (MEXT), White Paper on Science and Technology 2004: Science and Technology and Society in the Future, National Printing Bureau, Tokyo, 2004.
- [2] R. Kuroda, Kagaku o Hagukumu (Nurturing Science), Chuokoron-shinsha, Tokyo, 2002.