

## Action to build a base for breakthrough study by young researchers

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For the future breakthrough study, the further improvement of base for upbringing of the next-generation researcher is expected. In this presentation, the activity of the New Year School is introduced.

The New Year School (hereinafter, "NYS") is held every year in January. A plan and the administration of NYS are carried out by the volunteer activity by young researcher including graduate students mainly.

In NYS, a lot of invited lectures related to various fields of the earth science are planned. Participants can get information about the basics of study theme, latest results, future development, etc. of each lecture.

Furthermore, concepts of NYS include a theme to "present ideas and opinions, share them among participants, and then grope for a new ideas further". It is intended that the NYS plays a role as a chance to make "the opportunity" that participants can discuss among researchers of various fields, and make a new idea of future studies.

It is annual that NYS is held for two days. About invitation lectures, two categories of the standard lecture and the Ex lecture usually exist. In the standard lectures are given by invited lectures who are playing an active part in the front line of each field. In addition, in the Ex lecture, invited lectures about the activity in conjunction with research activities. In the past, activities concerning edition of the scientific information magazine, education, outreach activity, etc. were presented in the Ex lectures. As for the standard lecture and Ex lecture, from four to six lectures are usually carried out, respectively.

In addition to these lectures, the group work (roughly ten persons per every group) for one to two hours is carried out by all the participants. In this group work, participants can get deepening of each study consciousness, make the cooperation between future fields through discussions and brainstorming related to the cooperation between various fields and each lecture theme. The invited lectures also participate in this group work, to encourage and promote the group work discussions.

A lecture notebook is distributed to a participant of NYS. In a lecture notebook, many useful contents for graduate students and young scientists are included, e.g, abstract of each invited lecture, descriptions of now-how and experience about article writing, a presentation at conference, making of study proposal, the situation to surround the young researchers, observation cruises and the study abroad, etc. NYS reached the tenth in this year.

The activity content of NYS has been reviewed with several years interval, in association of the constitution change of the core members NYS office. Thus, there is a possibility that activity of continuation of the NYS is further development in future. The activity of NYS is supported by a young researchers and students' volunteer, and the participant in NYS is also mainly consisted from young researchers and graduate students. However, a number of students entering a graduate school tends to decrease in many fields of the earth science recently. It is required to avoid further decreasing in number of the graduate school student to sustain activities like NYS and to promote future break-through study.

In the presentation, I will show a further introduction of the NYS activity, and also possible outreach activity and industry-academia-government-citizen cooperation that can contribute to the long-term study base construction for breakthrough study in future as well as next generations of researchers.

Keywords: Build a base for breakthrough study, New Year School (NYS), cooperation between multi fields, Encouragement of next generation, outreach