

### **Developmental biology workshop for high school students**

*February 16, 2015*– The RIKEN CDB co-hosted a two-day developmental biology workshop for high school students on December 25 and 26, 2014, with the Japanese Society for Developmental Biologists (JSDB) and the Hyogo Prefectural High School Biology Teachers Association. Twenty students signed up to attend the workshop, which was organized to offer them an opportunity to learn about the process of animal development and cell differentiation through lectures as well as performing actual lab experiments. Seven science teachers from local high schools, all of whom participated in a workshop for high school biology teachers held in October 2014, were also on hand as teaching assistants to impart what they learned in the workshop to the students. Ms. Yoshina Usui, a biology teacher at Suma Higashi High School assisted with the planning and running of the workshop.



Scenes from the workshop

Prior to attending the two-day workshop, the students took part in a special tutorial at their respective schools, which covered the fundamentals of genes, cell differentiation, and the process of development, to ensure that they were all on equal footing. On the first day of the workshop, after breaking the ice and learning about the CDB, the students were led to a laboratory for the practical part of the program. Makoto Mochii, an associate professor at Hyogo Prefectural University, first gave an overview of embryonic development of the chicken. The students were then instructed on how to handle chicken embryos that had been incubated for seven to nine days, and also where to locate major organs within the embryo. In the afternoon, they extracted tissues from quail embryos, and learned how to prepare primary cell cultures from those tissues.

On day two, CDB research scientist Satoru Okuda (Laboratory for Organogenesis and Neurogenesis) gave a lecture on the mechanistic processes at work in cell populations undergoing morphogenesis to form tissues and organs, supplementing his talk with movies of simulations based on actual research data. Afterwards, the students headed back to the lab to examine the cell cultures they prepared the previous day and note the differences in morphology among the different cell types making up the tissues and organs. The same cultures were also used later to perform some experiments looking at cell-cell adhesion. The workshop wrapped up with a group discussion, with the students exchanging views on the characteristic morphology and behavior of each cell type and how those features are linked to the cell function.