

An Industry–Academia Partnership

Helping to Develop Japan's Biotech Future

by Geoff Hodge and Anders Fält

GE Healthcare Life Sciences recently launched a joint program with Osaka University to support future growth of the biopharmaceutical sector in Japan. Together, they offer students access to GE Healthcare's expertise in training and technologies for bioprocess research and manufacturing. The program is funded by Osaka University as part of its "Interdisciplinary Program for Biomedical Sciences" (IPBS), a government-funded commitment to graduate education.

The goal of IPBS is to educate young scientists to undertake global-scale collaborations to develop effective treatments for intractable diseases during their future research careers. The program recruits partners not only from academia (graduate schools of medicine, pharmaceutical sciences, engineering, frontier biosciences, science, and dentistry), but also from industry. That allows students to engage with scientists in cutting-edge interdisciplinary research. Of the 14 recent IPBS graduate students, four were given the chance to visit GE Healthcare Life Science's site in Uppsala, Sweden, for three weeks this past summer (19 August to 6 September 2013).

Aligning well with the goals of IPBS, GE Healthcare Japan has its own initiative to support the development of local researchers: "Life Sciences Academy" (LiSA) officially started up in April 2013. Program goals range from personal skill improvement for those researchers (through basic understanding of experimental skills and acquisition of practical experimental techniques) to networking (by providing tools for opinion exchange and interaction).

THE INTERNSHIP EXPERIENCE

While at GE Healthcare in Uppsala, the Osaka University students experienced day-to-day life in a research and development (R&D) laboratory. They worked closely with scientists and engineers, thereby discovering how high-tech instrumentation and operational excellence must go hand-in-hand for a company to be successful.

Their first two weeks focused on obtaining first-hand experience in protein-interaction analysis and laboratory-scale protein purification. They learned to use instruments such as Biacore and MicroCal systems for label-free protein analysis as well as ÄKTA pure chromatography systems for purification.

During the third week, the students were introduced to GE Healthcare's advanced bioprocess technologies. This allowed them to work on a large-scale manufacturing project that they independently planned, executed, and evaluated. The results of such a project interested GE Healthcare because they could potentially help shorten analysis times and thus reduce lead times and improve customer satisfaction. Meanwhile,

the students enjoyed the rare opportunity to participate in a troubleshooting project intended not only to benefit the scientific community, but also have direct commercial impact.

Much of the training offered to these students during their visit was based on GE Healthcare's hands-on workshops already offered to customers through the global network of FastTrak centers based in Germany, the United States, India, and China. This strategic collaboration between GE Healthcare and Osaka University provided an opportunity to take that knowledge and expertise to a wider audience while inspiring some of the life-science researchers and manufacturing professionals of tomorrow.

The students — Ryo Iwamoto, Yuichi Ninomiya, Shin Jihoon, and Takero Miyagawa — had this to say: "Overall, we learned that through collaboration with industry, there is an alternative way to contribute to society. We believe this opportunity has broadened our minds to our future careers." Joined by their professor, world-renowned immunologist Masayuki Miyasaka, they met with scientists at the Karolinska Institute, one of the largest medical universities in Europe. In doing so, they visited SciLifeLab, a facility that offers state-of-the-art technologies for high-throughput bioprocesses.

WORKING TOGETHER FOR THE FUTURE

Kiyoshi Takeda, MD, PhD, is coordinator of Osaka University's IPBS. "Our program seeks to educate young life scientists to play an active role at the front lines of global-scale research collaborations in the industry, academic, or government sectors," he explains. "We strongly believe that our students will gain valuable experience from the internship at the GE Healthcare Life Sciences R&D Center in Uppsala." He calls the joint program with GE Healthcare "an excellent example of cooperation between university and industry, a collaboration that has not been possible in the traditional Japanese education system." And he concludes, "We hope that such a collaborative educational program will strengthen relations between academia and industry for the coming generations, leading the way to advanced treatment research for intractable diseases." 🌐

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We'd love to hear about how other companies are working with academic programs to help mentor young scientists. Contact Anne Montgomery (amontgomery@bioprocessintl.com) with your story!