The one-week CARD-IP Cryocourse, sponsored by ISTT, was held at the Institut Pasteur between October 24th and 28th 2016. This workshop initially planned in June 2016 had to be postponed to October following major earthquakes in Japan in the Kumamoto region where the CARD center is located. Most trainees pre-selected for the June session were able to attend the October session. Twenty-four trainees and twenty-one lecturers and instructors were hosted by Naomi Nakagata (Kumamoto University-CARD center) and Jean Jaubert (Institut Pasteur). Trainees came from worldwide institutions in the following countries: Australia (1), Belgium (1), Cuba (1), Denmark (1), France (7), Germany (2), Italy (1), Netherlands (1), Portugal (1), Spain (2), Switzerland (1), UK (1), Uruguay (1) and USA (3). This was the 10th course on mouse cryopreservation organized by the CARD under the supervision of Dr Naomi Nakagata and Toru Takeo, and the 3rd overseas. Ten Japanese members from Kumamoto University and Kyudo Co. LTD pharmaceutical company (including its president Mitsutoshi Tsuruta), came to assist the trainees. The course was organized with a first day mainly dedicated to lectures and the 4 following days of intensive hands-on training with some interspersed lectures.

Didactic lectures were given on various topics including why the mouse model has been so successful (by Jean-Jacques Panthier), the European regulatory framework protecting the animals used for science (by Xavier Montagutelli), history of transgenesis methods (by Michel Cohen-Tannoudji), historic and scientific perspectives of embryo and sperm cryopreservation (by Jorge Sztein), shipping mice, frozen or refrigerated embryos/sperm across the world (by Toru Takeo and Hidetaka Yoshimoto), breeding, genotyping and back-ups of genetically modified animals (by Jean Jaubert and...
Franck Bourgade), vitrification of oocytes and their use for IVF (by Naomi Nakagata), the CARD center (by Naomi Nakagata), superovulation and ultrasuperovulation (by Toru Takeo), development of database for managing mouse banking system (by Shuuji Tsuchiyama), CRISPR/Cas9 engineered models and freezing down these new models (by Lluís Montoliu), managing embryo/sperm banking and the role of archiving centers (by Lluís Montoliu), Institut Pasteur mouse genetic engineering centre: overview and perspectives for a transgenesis platform (by Francina Langa Vives).

Hands-on sessions were intense and trainees learned to perform the exact and latest CARD techniques. Trainees were taught the latest techniques in sperm cryopreservation and cold-storage, embryo and oocytes vitrification, in vitro fertilization with fresh, cold-stored or frozen sperm and with fresh or vitrified oocytes. Surgical techniques including male vasectomy and embryo reimplantation in the oviduct were also taught, and Barbara Stone (Paratechs) provided training in using the NSET method of embryo uterine implant (non-surgical method). All female oocyte donors used during the training were ultrasuperovulated following the latest IASe method (thanks to Franck Bourgade, Gyuèné K’Ouas and Grégoire Mauny who performed a lot of work behind the scene). A guided tour of Institut Pasteur’s museum and a visit of the Transgenesis platform (headed by Francina Langa Vives) with a live demonstration of micro-injection were also included in the program. On Thursday evening of the workshop all participants enjoyed an exceptional gala dinner-cruise on the Seine (arranged by Jean Jaubert) with incredible views of Paris monuments and Eiffel Tower illuminated by night.

In all, it was an exceptional workshop, with all participants achieving very good results in most of the practicals. A new freezing/thawing method was also developed during the workshop, with indeed very good results, as an accidentally frozen microphone (see pictures) still worked after slow thawing!

Jean Jaubert, as host, would like to acknowledge not only all lecturers, but also his colleague Franck Bourgade who handled most of the logistic, and the CARD team members who under the supervision of Dr Naomi Nakagata assisted the students during all hands-on, including Shuuiji Tsuchiyama (who also realized an artistically detailed seat assignment plan and set-up two detailed web sites post-workshop), Toru Takeo, Mari Iwamoto, Ayumi Mukunoki, Hidetaka Yoshimoto, Yukie Haruguchi, Tomoko Kondo, Yuko Nakamuta, Tomoko Umeno, and the CARD “adoptees”—Kristy (Kinchen) Williams (USA) and Jorge Sztein (Spain).

The workshop was fortunate to have generous vendor support, including our gold sponsors: Charles River Laboratories (who supplied all of the mice used in the course), Kyudo Co., LTD who provided support for the CARD instructors as well as all reagents, and the ISTT who gave us financial support and contributed to reduce fees; our gold sponsors: Nikon who supplied part of the scopes for the workshop, Zeiss who supplied part of the scopes for the workshop, Paratechs for sponsoring Dr. Barbara Stone’s participation, AFSTAL for course support, Envigo for course support, Transnetyx for course support, Cryo Bio System for course support; our bronze sponsors: Hamilton Thorne for course support, Anesteo for course support, Euromedex for course support, Tecniplast for course support, Leica Microsystems who provided some microscopes, CosmoBio who provided course support as well as printed documents and usb keys. Finally, we thank all our participants for their hard work, their questions and dedication to bring the newest assisted reproductive, cryopreservation and transgenesis technologies back to their institutions.

Post-workshop websites:
CARD cryopreservation training course at Institut Pasteur
http://cardipmouse2016.weebly.com/
CARD cryopreservation courses taught overseas