Workshop on human iPSC Derivation, Maintenance, Differentiation, and CRISPR/Cas9 Gene Editing in iPSCs

May 14-18, 2018 at the University of Pennsylvania iPSC Core Facility

This five-day course includes short lectures by expert Penn faculty and hands-on training and demonstrations.

Lecture Topics:
- Introduction to stem cells
- Reprogramming methods and characterization of iPSCs
- Gene editing methodologies and CRISPR/Cas9 design and construction
- Hepatocyte differentiation from PSCs and fibroblast to hepatocyte trans-differentiation
- Cardiomyocyte differentiation and characterization
- Hematopoietic cell differentiation

Hands-on Training Topics:
- Isolation and expansion of PBMCs from blood for reprogramming
- Reprogramming of PBMCs using Sendai viral vectors
- Feeder-dependent and feeder-free PSC culture
- Characterization methods for reprogrammed iPSCs
- PSC gene editing using Cas9 and guide RNA plasmid DNA transfection via nucleofection
- Plating iPSCs for monolayer directed differentiation into cardiomyocytes and hepatocytes; selection and passaging of differentiated cardiomyocytes

Prerequisite: Familiarity with general mammalian cell culture techniques and a strong interest in working with iPSCs. Students interested in directed differentiation into cardiac and hepatic lineages are encouraged to apply.

Registration fee: $500- academic and non-profit organization; $3000- Industry and for-profit organization. Fee includes all course materials and lunches for the 5 days. Participants are responsible for travel and lodging (information on lodging will be sent upon registration)

To register, please contact Wenli Yang, Ph.D, iPSC Core director: wenliyan@pennmedicine.upenn.edu. Space is limited to 10 students.

This workshop is also supported by: