

Fall 2017

Translational Medicine 轉譯醫學

Program: Translational Medicine PhD Program

Place: IBMS Building, B1B

Language: English

Time: Wednesday, 09:30~12:30

Credit: 3, graded

Office hour: 8:30-9:30 am, Wednesday

Instructors: Dr. Patrick C.H. Hsieh (謝清河), phsieh@ibms.sinica.edu.tw

Dr. Yu-Ting Yan (顏裕庭), yyan@ibms.sinica.edu.tw

Dr. Ching-Feng Cheng (鄭敬楓), cfcheng@ibms.sinica.edu.tw

Dr. Yi-Chang Chang (張以承), b83401040@gmail.com

Dr. Yungling Lee(李永凌), leolee@ntu.edu.tw

Course Objectives:

1. Understanding mechanisms of human diseases and relevant research models;
2. Learning the development process of new drugs or theranostics for diagnosis, prevention and treatment of human diseases;
3. Learning bioethical issues and regulatory guidelines relevant to human research.

Course Modules:

Introduction, translational research, animal models, prodrug design & development, preclinical & clinical development, IP/VC & biotech start-up, and special lectures & student presentation of final projects.

Course evaluation:

Class attendance & participation (50%), and final proposal (50%).

References:

1. Horig H et al. "Obstacles and opportunities in translational research". *Nat. Med.*, 2005;11:705.
2. Zerhouni EA. "Translational and clinical science--Time for a new vision". *NEJM.* 2005;353:1621.
3. Cressey D. "Talking up translation". *Nature.* 2010;463:422.
4. Class handouts.

Syllabus:

Week	Date	Time	Topic	Lecturer	Moderator
Introduction					
1	09/13	09:30-10:50	Pharmacogenomics & translational medicine	陳垣崇	謝清河
		11:00-12:20	Effective scientific communications	謝清河	謝清河
Translational research					
2	09/20	09:30-10:50	Huntington's disease: clinical trials and drug development Classroom room changed to B1A	陳儀莊	顏裕庭
		11:00-12:20	microRNA translational research Classroom room changed to B1A	卓夙航	顏裕庭
3	09/27	09:30-10:50	NGS applications and precision medicine	蔡世峯	顏裕庭
		11:00-12:20	Glycomedicine and human diseases	謝世良	顏裕庭
Animal models					

4	10/11	09:30-10:50	The use of animal models in translational research	王繼廣	顏裕庭
		11:00-12:20	Molecular imaging and cancer biology in animals	蕭培文	顏裕庭
5	10/18	09:30-10:50	Preclinical toxicology and safety pharmacology	陳筱苓	顏裕庭
		11:00-12:20	GMA, CMC, scale up and formulation	顧曼芹	顏裕庭
<i>Prodrug design & development</i>					
6	10/25	09:30-10:50	Discovery and lead optimization of small molecule drugs	陳孟炘	鄭敬楓
		11:00-12:20	Pharmacokinetics and ADME in drug development	謝興邦	鄭敬楓
7	11/01	09:30-10:50	Transgenic mice and translational research	林淑華	鄭敬楓
		11:00-12:20	Development of biologics	阮大同	鄭敬楓
<i>Preclinical and clinical development</i>					
8	11/08	09:30-10:50	Clinical research design, monitoring and data collection	許 駿	鄭敬楓
		11:00-12:20	Regulatory approval for clinical trials	林志六	鄭敬楓
9	11/15	09:30-10:50	Quantitative Reasoning in Clinical Research	陳建煒	李永凌
		11:00-12:20	IRB and conflict of interests	郭英調	李永凌
10	11/22	09:30-10:50	Critical paths from drug discovery to clinical development	甘良生	李永凌
		11:00-12:20	PK/PD/PG Based Drug Development and Examples in Taiwan	胡幼圃	李永凌
<i>IP, VC and biotech start-up</i>					
11	11/29	09:30-10:50	Technology transfer/ incubation center	梁啟銘	張以承
		11:00-12:20	VC and financial management in biotech industry	李世仁	張以承
<i>Special lectures</i>					
12	12/06	09:30-10:50	Cancer metabolism and therapies	龔行健	張以承
		11:00-12:20	The Taiwan Biobank Project	沈志陽	張以承

13	12/13	09:30-10:50	Nanomedicine for cancer treatment	羅傳倫	李永凌
		11:00-12:20	Translational cancer biology	張智芬	李永凌
14	12/20	09:30-10:50	Dengue & Translational Medicine	林宜玲	張以承
		11:00-12:20	EMT and hypoxia in translational medicine	吳國瑞	張以承
15	12/27	09:30-10:50	Antibody engineering and targeted therapy	吳漢忠	張以承
		11:00-12:20	Targeted and individualized therapy of cancer	楊泮池	張以承
<i>Student final projects</i>					
17	01/03	09:30-12:20	Student presentation (I)	謝清河	謝清河
18	01/10	09:30-12:20	Student presentation (II)	謝清河	謝清河