

Fall 2015

Translational Medicine 轉譯醫學

Program: Translational Medicine PhD Program

Place: TIGP Building, Auditorium 207

Language: English

Time: Wednesday, 09:30~12:30

Credit: 3, graded

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

Instructor: Dr. Patrick C.H. Hsieh (謝清河), phone 02-27899074, email phsieh@ibms.sinica.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	Speaker
Introduction				
1	09/16	09:30-10:50	Pharmacogenomics & translational medicine	陳垣崇
		11:00-12:20	Drug development and translational medicine	胡幼圃
Translational research				
2	09/23	09:30-10:50	Glycomedicine and human diseases	謝世良
		11:00-12:20	microRNA translational research	卓夙航
3	09/30	09:30-10:50	The use of animal models in translational research	萬灼華
		11:00-12:20	Huntington's disease: clinical trials and drug development	陳儀莊
4	10/7	09:30-10:50	Antibody engineering and targeted therapy	吳漢忠
		11:00-12:20	Translational cancer biology	張智芬
Animal models				
5	10/14	09:30-10:50	NGS applications and precision medicine	蔡世峰
		11:00-12:20	Preclinical toxicology and safety pharmacology	陳筱苓
6	10/21	09:30-10:50	Molecular imaging and cancer biology in animals	蕭培文
		11:00-12:20	Transgenic mice and translational research	林淑華
Prodrug design & development				

7	10/28	09:30-10:50	Discovery and lead optimization of small molecule drugs	陳孟炘
		11:00-12:20	Pharmacokinetics and ADME in drug development	謝興邦
8	11/04	09:30-10:50	GMA, CMC, scale up and formulation	顧曼芹
		11:00-12:20	Development of biologics	阮大同
<i>Preclinical and clinical development</i>				
9	11/11	09:30-10:50	Clinical research design, monitoring and data collection	許駿
		11:00-12:20	IRB and conflict of interests	郭英調
10	11/18	09:30-10:50	Critical paths from drug discovery to clinical development	甘良生
		11:00-12:20	Statistical considerations in clinical translational research	陳珍信
11	11/25	09:30-10:50	Integrated national strategy for branding Taiwan- Si ₂ C approach	陳恆德
		11:00-12:20	Regulatory approval for clinical trials	林志六
<i>IP, VC and biotech start-up</i>				
12	12/02	09:30-10:50	Technology transfer/ incubation center	梁啟銘
		11:00-12:20	VC and financial management in biotech industry	李世仁
<i>Special lectures</i>				
13	12/09	09:30-10:50	The Taiwan Biobank Project	沈志陽
		11:00-12:20	Medicine-lab bench to bedside & bedside to lab bench	張子文
14	12/16	09:30-10:50	Translational nanomedicine	閻雲
		11:00-12:20	EMT and hypoxia in translational medicine	吳國瑞
15	12/23	09:30-10:50	Translational Research and Precision Medicine	陳建仁
		11:00-12:20	Targeted and individualized therapy of cancer	楊泮池
16	12/30	09:30-10:50	Galectins & translational medicine	劉扶東
		11:00-12:20	Effective scientific communications	謝清河
<i>Student final projects</i>				
17	01/06	09:30-12:20	Student presentation (I)	謝清河
18	01/13	09:30-12:20	Student presentation (II)	謝清河