

[Professoriate Staff]

TEACHING FILE

[LI, GANG 李剛]

COURSE AND TEACHING EVALUATION (CTE) RESULTS

In April 2009, I have been recruited by CUHK ORT department to take up a non-clinical professorship. My main duty is to develop the stem cell and regenerative medicine research program in ORT and SBS. Because ORT department has limited teaching sections to undergraduate medical students, and all of these teaching sections are taken up by the clinical professors, I had limited teaching opportunities. However, I am very keen to offer teaching and participated in teaching programs in ORT for undergraduate medical students, providing student selected modules (SSM) since 2010 till now. I have taught two SSMs for year 2 and 3 medical students since 2010 [SSM2489: Tissue engineering principles for musculoskeletal tissue regeneration; SSM248- What is distraction osteogenesis and how to make people to grow taller?] These two SSMs are all journal paper based with student discussion and tutorials, and they are all well received by the students. I have actively participated in the postgraduate teaching programs on Stem Cells and Regeneration program in School of Biomedical Sciences, since 2009 to now. My lecture “Circulating stem cells and their clinical implications” is very popular among the postgraduate students in SBS. Since 2015, I have offered teaching for postgraduate course in Biomedical Engineering program organized by Prof. Arthur Mak [BMEG5150 Principles of Biomechanics and Biomaterials], and I taught 4 lectures: “Stem Cells Basics & Applications”; “Principles of Tissue Engineering”; “Tissue Engineering in Cartilage, Bone and Tendon” and “Distraction Histogenesis”. These lectures are very inspiring to the BME students and I received good oral feedback from the students and course coordinator Prof. Arthur Mak (the formal teaching evaluation report is pending). In addition, I have supervised 2-3 final year student projects for BME (Biomedical Engineering) program every year since 2012; I have supervised 4 taught master students (2012-2013); 2 taught master students in 2013-2014 and 2014-2015 respectively for Sport Medicine and Rehabilitation Postgraduate Program (ORT-Course coordinator Prof. Kai-Ming Chan). I have also accepted one exchange PhD student from National University of Singapore in 2011 and one undergraduate student from Canada in 2014 for summer replacement, both were under the CUHK-OAL International exchange student programs.

Since 2010 till present, I have volunteered myself and offered undergraduate teaching in School of Biomedical Sciences [UGEB2791: PERSPECTIVES IN CLINICAL SCIENCES; Course coordinator Dr. Dr Rebecca K Y Lee, School of Biomedical Sciences] and taught since 2010, to teach “Stem cell biology and their clinical applications in musculoskeletal systems” to year 1-2 undergraduate students.

The teaching evaluation scores of all the undergraduate teaching I have offered in CUHK since 2009-2014 are as following (Provided by Ms. Samantha Sin; Faculty of Medicine; samanthasin@cuhk.edu.hk):

Teaching Evaluation Scores Recorded:

Acad Year	teacher	Staff ID	UG / PG (U or P)	Study Year	Format	Course code	Title	mean	adjusted mean	No. of Student	Response Rate
2009	LI Gang	393977	U	2	Report writing	SSM2481	Selected Study Modules Year 2 - 2-Day Journal Paper Analysis	4.4	4.8		
2010	LI Gang	393977	U	2	Report writing	SSM2489	Selected Study Modules Year 2 - 2-Day Journal Paper Analysis	4.25	4.25	4	0
2010	LI Gang	393977	U	2	Report writing	SSM2488	Selected Study Modules Year 2 - 2-Day Journal Paper Analysis	4.25	4.25	4	0
2010	LI Gang	393977	U	5	Small Group Teaching	UGEB2791	Lecture: stem cells biology and clinical applications	3.48	3.74	52	0
2011	Li Gang	393977	U	1	Small Group Teaching	UGEB2791	Lecture: stem cells biology and clinical applications	4.38	4.61	34	0.00%
2011	Li Gang	393977	U	2	2-Day Journal Paper Analysis SSM	SSM2488	What is distraction osteogenesis how to make people to grow taller?	4.00	4.22	10	0.00%
2011	Li Gang	393977	U	2	2-Day Journal Paper Analysis SSM	SSM2489	Tissue engineering principles for musculoskeletal tissue regeneration	0.00	0.00	0	0.00%
2012	Li Gang	393977	U	2	2-Day Journal Paper Analysis SSM	SSM2488	What is distraction osteogenesis and how to make people to grow taller?	5.00	5.17	0	100.00%
2013	Li Gang	393977	U	2	Selected Study Modules II	SSMU2000	Selected Study Modules Year 2 - 2-Day Journal Paper Analysis	4.47	4.69	15	100.00%
2013	Li Gang	393977	U	1	Lecture	UGEB2791	Perspectives in Clinical Sciences	4.24	4.58	32.00	100.00%
2014	Li Gang	393977	U	1	Lecture	UGEB2791	Perspectives in Clinical Sciences	5.24	5.40	43.00	79.00%

Scales: 1=strongly disagree; 2=disagree; 3=slightly disagree; 4=slightly agree; 5=agree; 6=strongly agree.

POSTGRADUATE SUPERVISION AND EXAMINATION (SINCE 2009.04)

Graduated Students

Graduated PhD students (Total: 6)

Graduated MPhil students (Total: 0)

PhD Students Supervised By Prof. Gang LI (as Principle Supervisor) and Graduated at The Chinese University of Hong Kong since 2009 (Total : 5)				
Year	Degree	Name	Thesis Title	Current Position
2009–2012	PhD	Ming Ni 倪明	Tenogenic Differentiation of Tendon-Derived Stem Cells (TDSCs) and Application for Tendon Repair	Orthopaedic Surgeon, Beijing 301 Hospital, Beijing, China.
2009–2012	PhD	Liangliang Xu 徐亮亮	Roles of CRBP1, N-cadherin and SOX11 in Differentiation and Migration of Bone Marrow-derived Mesenchymal Stem Cells	Research Associate, Chinese University of Hong Kong
2010–2014	PhD	Nan Li 李楠	The role of Smad7 in bone remodeling and osteoporosis	Postdoctoral RA in the USA
2010–	PhD	Huang Shuo	The use of systemic	Postdoctoral RA in

2014		黃碩	administration of allogenic MSCs in fracture repair and osteoporosis	the 3 rd Military Medical University, Chongqing, China.
2011-2014	PhD	Wang Kuixing 王魁興	Studies of stem cells secretion factors in musculoskeletal regeneration	Postdoctoral RA in Zhejiang University School of Medicine
2012-2015	PhD	Sien Lin 林思恩	The use of de-chondrogenic reprogrammed MSCs for cartilage repair and cartilage tissue engineering applicaitons	Postdoctoral RA in Department of Orthopaedics and Traumatology, CUHK

Current Students

Current PhD Students (Total: 6)

Current MPhil Students (Total: 0)

PhD Students Currently Supervised by Prof. Gang LI as Principle Supervisor at The Chinese University of Hong Kong (Total: 6)			
Year	Degree	Name	PhD Study Subjects
2012-2016	PhD	Yang Liu 劉洋	The role of CFTR in tendon development and diseases
2013-2016	PhD	Yuxin Sun 孫育新	Epigenetic regulations during distraction histogenesis (DH) and novel applications of DH
2013-2016	PhD	Tianyi Wu 吳天一	The use of fetal MSCs for tendon regeneration and repair
2013-2016	PhD	Yuanfeng Chen 陳元峰	Studies the roles of SDF-1 and joint distraction in osteoarthritis
2014-2017	PhD	Bin Wang 王彬	Studies the use of embryonic tissues and cells for tissue regeneration and health-maintenance
2015-2018	PhD	Shi Liu 石柳	Neuronal factors regulating bone formation

OTHER INFORMATION/ CONTRIBUTIONS

Summary of teaching activities and duties of Prof. Li Gang (04/2009-06/2014)

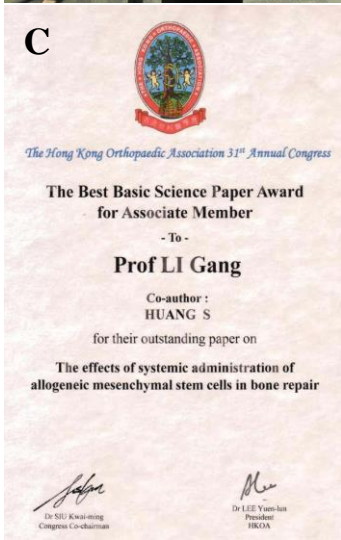
- Prof. Li has participated in teaching programs in ORT for undergraduate medical students, and provided student selected modules (SSM) since 2009. Prof. Li have taught two SSMs for year 2 and 3 medical students since 2010 (as shown in the teaching evaluation form). These two modules [SSM2489 Tissue engineering principles for musculoskeletal tissue regeneration; SSM248- What is distraction osteogenesis and how to make people to grow taller?] are well received by the students.
- Prof. Li has participated in undergraduate teaching in SBS since 2010, to teach “Stem cell biology and their clinical applications in musculoskeletal systems” to year 1-2 undergraduate students.

- Prof. Li has participated in the postgraduate teaching programs on Stem Cells and Regeneration in School of Biomedical Sciences, since 2009. His talk “Circulating stem cells and their clinical implications” is very popular among the postgraduate students.
- Prof. Li has supervised 2-3 final year student projects for BME (Biomedical Engineering) program every year since 2012.
- Prof. Li has supervised 4 taught master students on Sport Medicine and Rehabilitation for their research projects in 2012-2013 and 2 taught master students in 2013-2014.
- Prof. Li has accepted one exchange PhD student from National University of Singapore in 2011; one undergraduate student from Candidate in 2014 for summer replacement.
- Prof. Li is currently supervising 6 full time PhD students as principle supervisor.
- Some of Prof. Li’s past and current PhD students’ research work received awards at international and national conferences, and visited overseas university as exchange students (details list below).
- Prof. Li has joined a delegation with Prof. H. K. Ng, Prof. S Kumta, the Associate and Assistant Dean of Education, Faculty of Medicine, CUHK to attend the 4MMU and CUHK Forum on Medical Education Reform, 12 July 2012, and gave a talk entitled: “Student-cantered teaching UK and HK experiences”.
- Prof. Li has been acted as external examiners and external examiners for BSc, MPhil and PhD students for various departments in CUHK such as ORT, SBS, Biomedical Engineering, School of Chinese Medicine, CUHK; Hong Kong University of Science of Technology; University of Hong Kong; and several mainland universities; University of Western Australia; University of Cork, Ireland, etc.

Achievements of Prof. Li Gang’s Postgraduate Students

1. Ni Ming, PhD student (2008-2012) won the Webster Jee (Best Paper) Traveling Award at the 2012 Orthopaedic Research Society Meeting, 4-7 February 2012, San Francisco, USA. His research work entitled: Ni Ming, et al. Tendon-derived Stem Cells (TDSCs) Cell Sheet Produced by Connective Tissue Growth Factor (CTGF) and Ascorbic Acid for Tendon Tissue Engineering.
2. Xu Lingliang, PhD student (2009-2012), his paper entitled “Liangliang Xu; Fanbiao Meng; Gang Li. The Role of Cellular Retinol Binding Protein 1 (CRBP1) in Regulating Function of Mesenchymal Stem Cells” was selected as the finalist paper for the Young Investigator Award (among 40 out of 800 papers), at the 2012 Orthopaedic Research Society Meeting, 4-7 February 2012, San Francisco, USA.

3. Huang Shuo, PhD student (2010-2014), his paper entitled “Shuo Huang and Gang Li. The effects of systemic administration of allogeneic mesenchymal stem cells in bone repair” won the Best basic science paper award at the 2011 Hong Kong Orthopaedic Association Meeting, November 25-26, 2011.
4. Li Nan, PhD student (2010-2014), her paper entitled “Nan Li and Gang Li. The role of Smad7 in bone development and MSCs characterizatrion” won the Best Student paper award (only two such awards) the 1st CUHK International Symposium on Stem Cell Biology and Regenerative Medicine, 6 December 2011, Hong Kong.
5. Zhang Ting, PhD student (2010-2013), her paper entitled “Bone Marrow-derived Mesenchymal Stem Cells Promote Vascularization and Growth of Breast and Prostate Tumors” won the Best Student Paper award (only two such awards) at the 2nd CUHK International Symposium on Stem Cell Biology and Regenerative Medicine, 19-21 November, 2012, Hong Kong.
6. Liu Yang, PhD student (2012-2015), her paper entitled: "Effects of Sclerostin Antibody on Promoting Fracture Healing in Rats with Established Osteopenia” won the Best Student Paper award (only two such awards) at the 2nd CUHK International Symposium on Stem Cell Biology and Regenerative Medicine, 19-21 November, 2012, Hong Kong.
7. Liu Yang, PhD student (2012-2015), her paper entitled: “Examine the Role of CFTR on Tenogenic Differentiation” won the Best Student Paper award (only two such awards) at the 3rd CUHK International Symposium on Stem Cell Biology and Regenerative Medicine, 13-14 November, 2013, Hong Kong.
8. Liu Yang, PhD student (2012-2015) has received a visiting scholarship from OLA office, CUHK to enable her to have 1 month replacement at the Department of Orthopaedics, Karolinska Institute, Sweden.



- A. Mr. Xu Liang Liang and Prof. Li Gang at the 2012 Orthopaedic Research Society Meeting, 4-7 February 2012, San Francisco, USA.
- B. Ms. Li Nan received the best student poster award at the 1st CUHK International Symposium on Stem Cell Biology and Regenerative Medicine, 6 December 2011, Hong Kong.
- C. The certificate of Best basic science paper award at 2011 HKOA meeting.
- D. Ms. Liu Yang received the best student poster award at the 2nd CUHK International Symposium on Stem Cell Biology and Regenerative Medicine, 19-21 November, Hong Kong.
- E. Ms. Zhang Ting received the best student poster award at the 2nd CUHK International Symposium on Stem Cell Biology and Regenerative Medicine, 19-21 November, Hong Kong.



4MMU and CUHK Forum on Medical Education Reform, 12 July 2012. Prof. G Li (4th on the left); Prof. H. K. Ng (6th on the left), Associate Dean of Education, Faculty of Medicine, CUHK; and Prof. S Kumta, Assistant Dean of Education, Faculty of Medicine, CUHK (4th on the right).

REFLECTION/ SELF-EVALUATION/ OTHER FEEDBACK

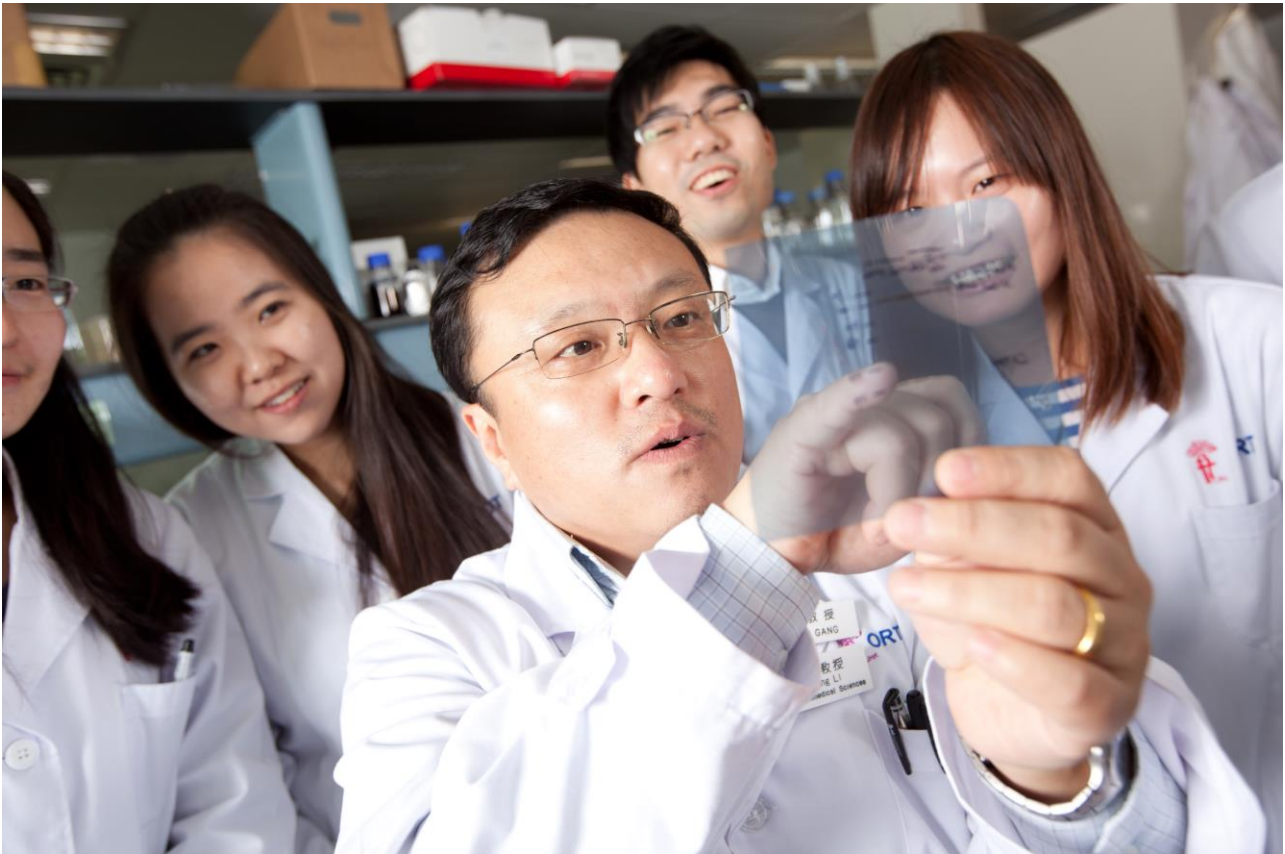
My teaching philosophy is to inspire and motivate the students. The teachers shall be reflective and facilitator to students' learning processes. Below are the key points of my understanding of teaching:

1. **Formal teaching is effective only when students are getting involved and the teacher is reflective.** Nowadays, quite a lot of doubts hang over the effectiveness of lectures (formal teacher-centred lectures) as a mean of helping students to learn. In fact, much of the time during formal lecture, only a fraction of the students is really listening on what is being lectured. In fact, not much learning actually happens in most lectures, but happens somewhat later. It is true, the moment we felt learning something is actually when we want to learn and need to learn, rather than the time we are passively told to learn! The activities that teachers need plan should be “controlled” through monitoring, assessing and adjusting processes. Teaching is, in effect, the systematic series of activities through which the teacher seeks to interpret his specific tasks in relation to modification of the learner's state of knowledge. Therefore, the teacher has to be the reflective practitioner. Be able to response to surprise is crucial for a successful classroom management. The most useful way to get feedback from the students perhaps is to establish an easy communication channel between the teacher and the students.

2. **Student-centred teaching and learning are the best approaches to meet the educational objectives.** Student-centred learning also encourage co-operative learning. Relative to students taught traditionally - i.e., with instructor-centred lectures, individual assignments, and competitive grading - cooperatively taught students tend to exhibit higher academic achievement, greater persistence through graduation, better high-level reasoning and critical thinking skills, deeper understanding of learned material, greater intrinsic motivation to learn and achieve, more positive and supportive relationships with peers, more positive attitudes toward subject areas, and higher self-esteem. Teacher, as a facilitator is to facilitate students' learning, acting as their coach in the learning process.

3. **Teacher shall act as a manager.** In the modern teaching practice, teacher is no longer a "controller" or "communicator", rather becomes a "facilitator" or in a sense, a "manager". The teacher is considered as the manger of teaching, involving the planning, direction and coordination of student activities. To meet the modern development of teaching and learning demands, a teacher not only must have a thorough knowledge of subject matter, he or she also need to develop management skills. As planner, teacher has to define the learning objectives based on what ought to be achieved and what can be achieved. As organizer, he has to determine a teaching strategy based on his objectives and resources. As director, he has to carry out strategic tasks to motivate and encourage students. As controller, he has to monitor and assess his students' progress and adjust his teaching so that objectives can be attained.

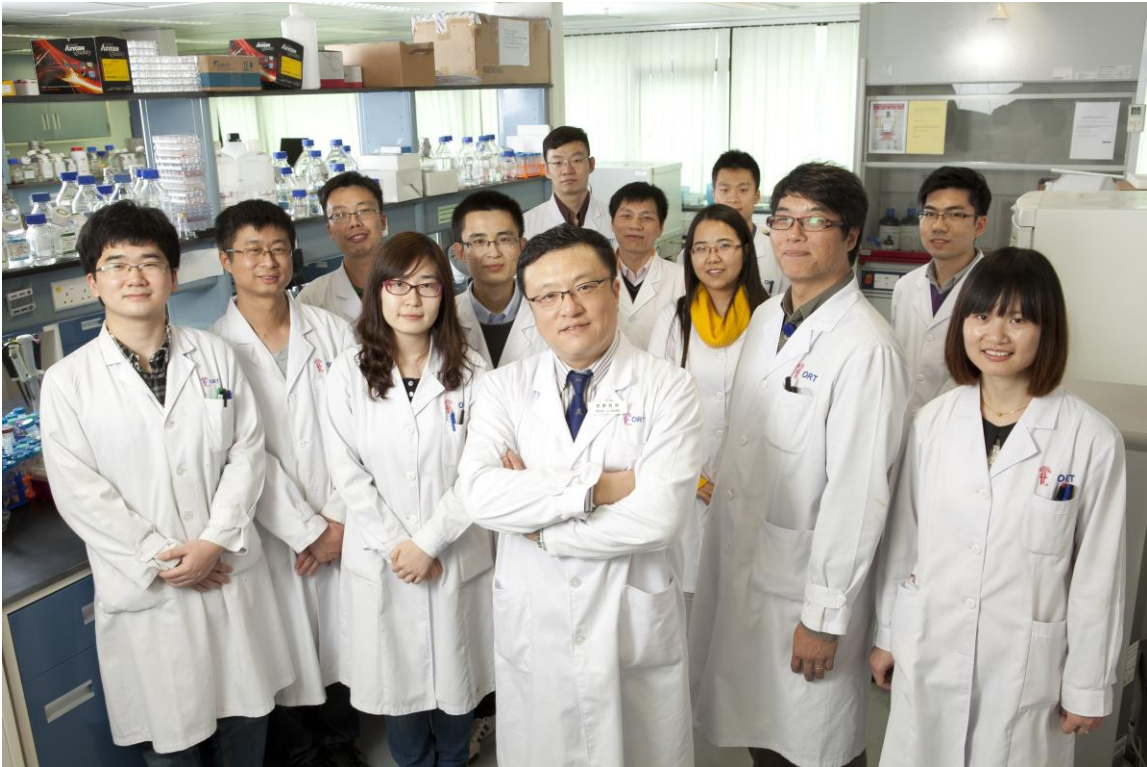
I have supervised 12 PhD students since August 2009; 6 of them have successfully completed PhD studies; they have won awards and traveling scholarship 8 times (as stated above). More than 30 peer-reviewed papers have been published resulting from the PhD students' work.



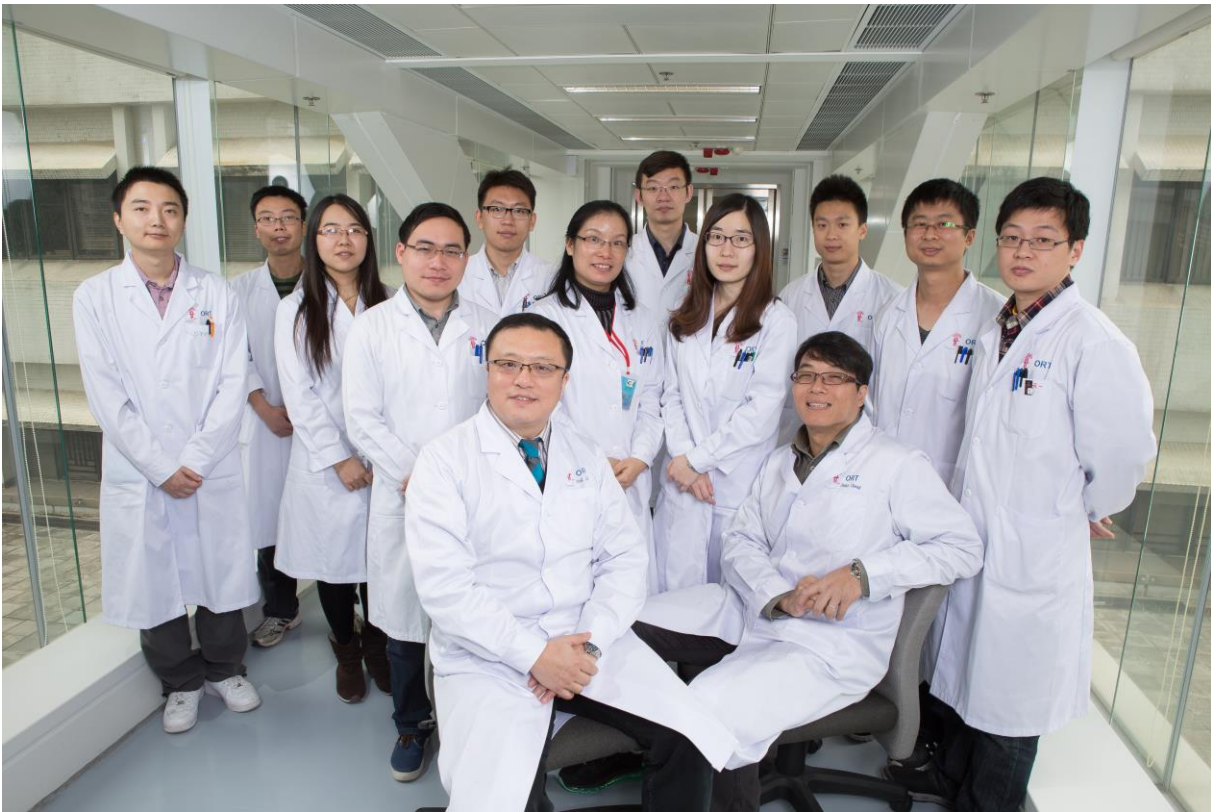
Photos of Gang Li's laboratory meeting, this is a happy team.



Prof. Gang Li's laboratory and happy students.



Gang Li's team members at December 2012.



Gang Li's team members at December 2014.



Dinner party for celebrating PhD students' graduation, August, 2014.