

# SUMMER COURSE

## on Environmental Life Sciences Engineering

6-25 July, 2015

At **SCELSE**

Singapore Centre for Environmental Life Sciences Engineering, Nanyang Technological University, Singapore.

The Singapore Centre for Environmental Life Sciences Engineering (SCELSE) is a unique interdisciplinary Research Centre of Excellence (RCE) established to explore and translate the life of microbial biofilms into environmental solutions and significant environmental, health and industrial benefits by engineering microbial communities. SCELSE's unique interdisciplinary approach is at the forefront of the emerging field of environmental life sciences engineering (ELSE).

SCELSE is offering an intensive and highly interactive course on which unites fields such as engineering and microbial ecology through the commonalities of biofilms.

Graduate and postgraduate researchers are invited to participate in this international Summer Course designed to bridge environmental engineering and contemporary life sciences in the context of microbial biofilm-driven processes.

### Course Aims

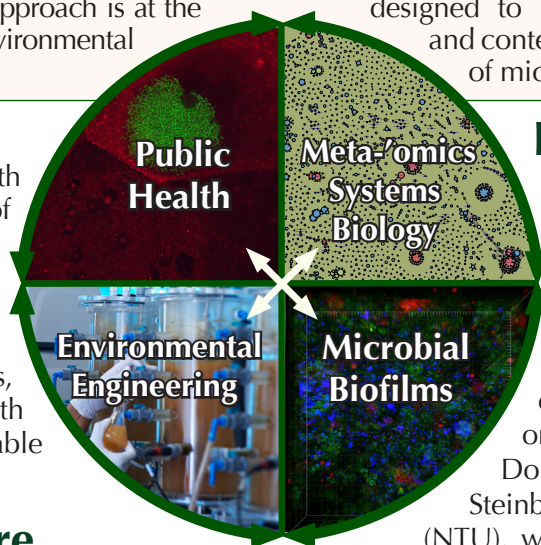
1. Familiarise participants with our current state of knowledge of microbial systems.
2. Enhance understanding of the biofilm mode of microbial life to harness microbial activities to efficiently recycle natural resources, provide pure water, control health risks and ensure a sustainable environment for future generations.

### Course Structure

Learning outcomes involve understanding mechanisms and processes using quantitative approaches. This knowledge will be used to design experiments that can yield information for developing new technologies or solving problems in the engineered environments.

The course consists of: structured core lectures; topical seminars; guided discussions on specialised topics and case studies; international and regional perspectives; exposure to Singapore's advanced water resource management through field trips.

*Participants of SCELSE's 2014 Summer Course came from around the globe, including Thailand, Singapore, India, USA, Japan, Germany, Spain, Belgium, Sweden, Malaysia, China and Vietnam.*



### High-Profile Teachers

This two-week course brings together world-renowned scientists and engineers including SCELSE scientific leaders, as well as visiting experts in the fields of microbial physiology and ecology, environmental engineering, meta-/omics and systems biology, such as Donald Bryant (PennState U), Peter Steinberg (UNSW) and Sven Petersson (NTU), with Ken Nealson (USC) and Gerard Wong (UCLA) joining the teaching team for 2015. Participants interact with these experienced mentors in their interdisciplinary approach in both practical and tutorial settings.

### Student comments

*"Top marks for this course...I highly recommend it!"*

*"The lectures gave me a broad view of biofilm studies, in diverse research fields ranging from physiology and ecology to medical and environmental engineering."*

*"The course was intense but highly enjoyable."*

*"The interactive nature of the course enabled me to establish networks with lecturers and fellow students."*



Applicants will be selected based on their strong and demonstrated interest in exploring interdisciplinary approaches to address complex scientific scenarios.

The course is open for students worldwide currently pursuing graduate programs or those graduated within the last three years in engineering or other sciences.

### Application information

Admission to the course is competitive with a restricted number of places. Successful applicants will receive housing, meals and some allowances including partial financial support for travel.

Students and early career professionals from Asia are highly encouraged to apply.

To apply, go to the Summer Course link on the SCELSE web address listed below.

<http://www.scelse.sg>

SCELSE is hosted by the Nanyang Technological University in partnership with the National University of Singapore.