

# Workshops by Science Centre Singapore

## Day 2, 22 November 2017 (1515 – 1645)

SCS Workshop 1

Crick Lab (Level 1)

### *Enzyme Kinetics*

Patrick WANG

#### **Abstract**

Enzymes are very sensitive to the environment and there are many factors that affect their rate of action. Join us as we go more in-depth into enzyme kinetics and use a spectrophotometer to measure rate of enzyme reaction. This workshop is suitable for upper secondary and tertiary teachers.

SCS Workshop 2

Faraday Lab (Level 3)

### *Fun with Electronics*

Wulf HOFBAUER, LI Zhen

#### **Abstract**

Electronics is the science of controlling electrical energy in the form of electrons, through circuits that are built with electrical components. These smart gadgets contribute significantly in building our 21<sup>st</sup> century technology. In this workshop, participants will be introduced to several basic electronic components (resistors, LEDs, switch, capacitors, potentiometer, transistors) and build electronic circuits exploiting their properties on a breadboard (prototyping board).

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SCS Workshop 3

Einstein Room, Digital Fabrication Space  
(Level 2)

### *Introduction to Digital Fabrication Space*

Kenny PHAY, Jonathan CHEN

#### **Abstract**

Digital Fabrication Space is a place where computer controlled tools like laser cutters, 3D printer and electronic circuit maker, etc. are available for users to turn their conceptual designs into real prototypes. Come and join this workshop for an informative session where all participants will have the opportunity to experience the power of modern digital design and fabrication. Participants will learn about the relation of digital fabrication and industry 4.0 evolution, and gain ideas for how generic digital skills like Programming and coding, electronic fabrication plus mechanical fabrication can empower individual to turn his/her dream product into reality.

SCS Workshop 4

Kitchen Lab, OmniTheatre

### *Delicious Scones*

NG Zhi Yan, ANG Che Wan

#### **Abstract**

Food, food, glorious food! Eating is a pleasure but do you want to know more about the food you are eating? What are the three main groups and why do we need them? You will also get the chance to put your culinary skills to practice and make delicious scones.

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SCS Workshop 5

E3 Exhibition

### *Inside the Human Body*

NG Mei Bao, ENG Sheng See

#### **Abstract**

Learning about the human anatomy but wondering how everything actually looks like inside? With medical technology and the latest visualisation software, we can do that without any invasive procedures to the human body. Dive into the human body to investigate how your body changes over time, and how different we are from our closest animal relatives.

SCS Workshop 6

Hall A, Scientist for a Day Exhibition

### *Learning the Scientific Method through a scientific experiment*

PANG Kian Tiong, Rajeswari BALASUBRAMANIAM, Archana CHOWLA

#### **Abstract**

Until recently, the “Scientific Method” has only been implicitly taught in class. Using Scientist for a Day, a permanent exhibition in Science Centre Singapore as a resource, we introduce and reinforce the learning of the Scientific Method by guiding participants through an experiment in the Exhibition’s Discover-It-Yourself (DIY) Lab. Participants range from 10 years to 1st year undergraduates. An experiment is selected (eg: the simple pendulum or Hooke’s Law related through a bungee jumping problem). The activity begins with a summary tour of the exhibition followed by a briefing of the selected experiment. The group is divided among 5 tables to do their own experiment – guided by roaming facilitators. The activity ends with a debriefing. Participants only need to bring their own stationery (pens/pencils). The DIY Lab is in the centre of the exhibition in Hall A, on the ground level of Science Centre Singapore. This session’s experiment will be on Centre of Gravity.

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SCS Workshop 7

Digital Design Studio  
(Level 1)

### *Learning Science with Video Games*

Ferry KURNIAWAN, TOH Kang Hui

#### **Abstract**

For decades, video games and education have gone together like oil and water. Teachers and educators alike have spent enormous effort to merge the two, in the hope of improving learning experience for the students. They work together with software developers to tailor-make educational games. This, however, does not seem to work as well as it is intended. The moment a game is marketed as “educational”, parents and teachers love it but students dislike it, seeing it as dull and boring. Recently, growing number of teachers and educators grow more eager to use video games as teaching tools but their approach is different than the traditional one. Instead of developing games from scratch and marketing it as “educational”, they simply take already popular games and convert it to teaching tools. Games like Minecraft and Kerbal Space Program have been proven to be useful to teach concepts like material and flight. The purpose of this workshop is to introduce video games to educators as powerful teaching tools. The workshop is intended for science teachers and educators. Topics that will be covered include: video games, materials, flight science. The workshop will include discussion, short hands-on with computer games and Q & A.

SCS Workshop 8

Pauling Lab (Level 3)

### *Chemistry of Cosmetics*

ONG Shu Yi, Jaslyn ONG

#### **Abstract**

Is it true that only women use cosmetics? This is a common misconception. Both men and women use them one way or another. In this workshop, participants will learn the science behind cosmetics and personalise their own scented shower gel.