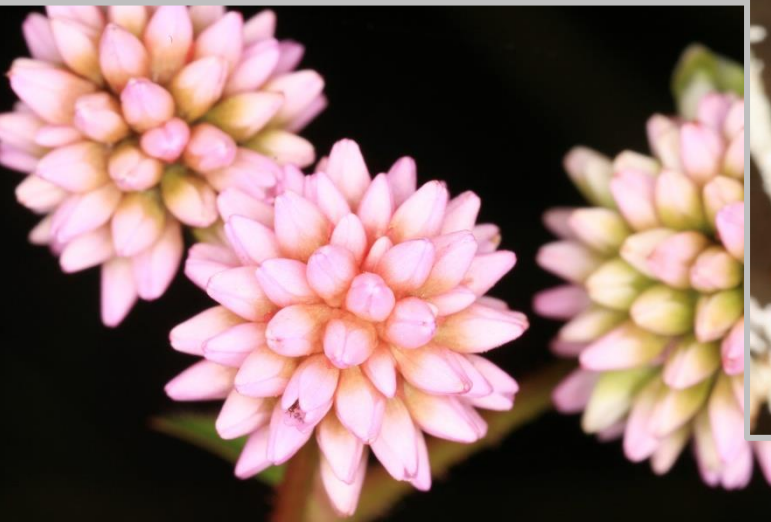


Ecology & Biodiversity



Dr. Benoit Guénard, School of Biological Sciences



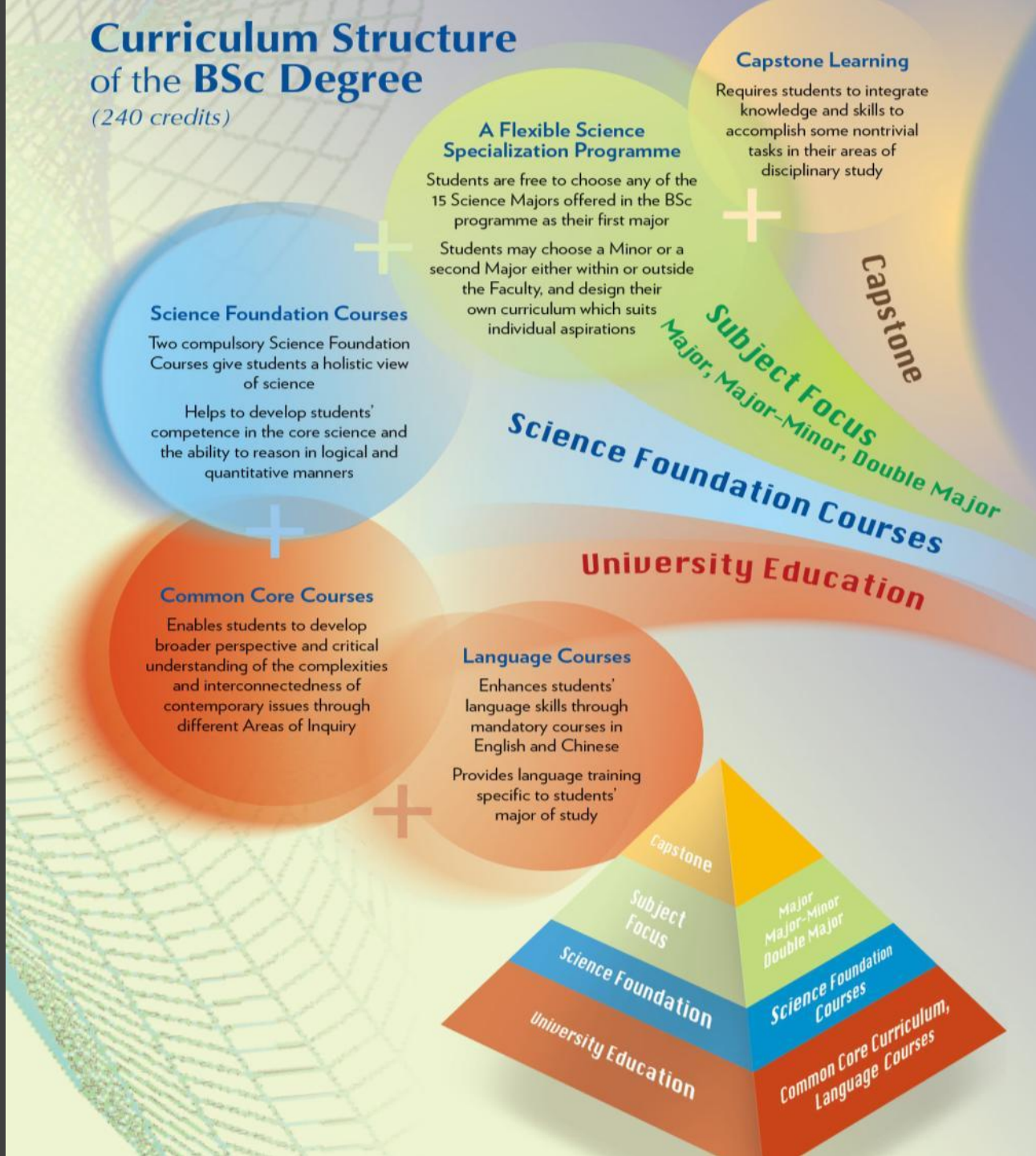
Curriculum Structure of the BSc Degree

(240 credits)



Capstone learning

Require students to
integrate knowledge and
skills to accomplish some
complex tasks in their areas
of disciplinary study

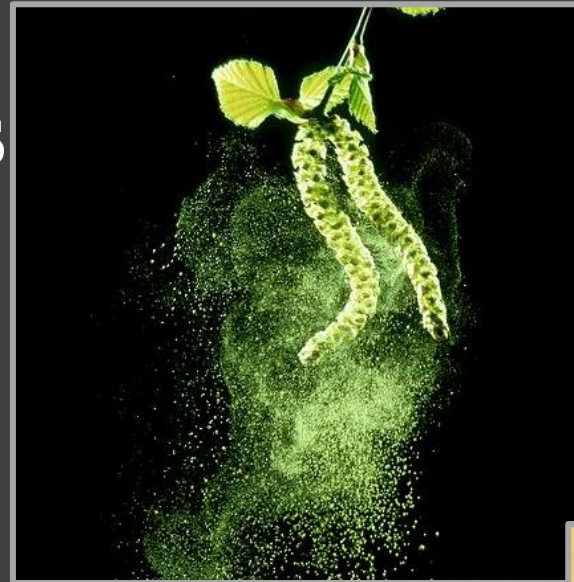


Ecology & Biodiversity (Intensive, Major & Minor)

4-year curriculum



- Diversity of species
- Interactions between species & their environment
- Regional & global threats on biodiversity





Why choosing this major?

Interest in Science

Curious about biology, nature & conservation

Enthusiast about exploring the natural world

Love fieldwork and/or laboratory work

Concerned about global environmental issues and protection of nature





What will you learn?

Broad knowledge in ecology, evolution and conservation

Skills to work independently & in team

Develop analytical and critical skills

Communication skills

Understanding of local & global environmental issues

Ecology & Biodiversity

Objectives:

1. *Research*

- Explore the biodiversity of living organisms (microorganisms, plants and animals) and their ecology, with particular reference to Hong Kong and Southeast Asia

2. *Teaching*

- Help students to understand:
 - biological diversity, the relationships between organisms and their environments
 - how humans interact with other organisms and the environment
 - the importance and need for biodiversity conservation

Major in Ecology & Biodiversity



1. Introductory level courses (48 credits)

Science Foundation Courses (12 credits)

SCNC1111 Scientific method and reasoning

SCNC1112 Fundamentals of modern science

Disciplinary Courses (36 credits)

BIOL1110 From molecules to cells

BIOL2102 Biostatistics

BIOL2306 Ecology and evolution

BIOL1309 Evolutionary diversity

ENVS2001 Environmental field & lab course

ENVS2016 Environmental data analysis

Major in Ecology & Biodiversity



2. Advanced level courses (42 credits)

BIOL3302 Systematics and phylogenetics

BIOL3301 Marine biology

BIOL3319 Tropical terrestrial ecology

Plus at least 30 credits (5 courses) selected from the following:

BIOL3101 Animal behaviour

BIOL3303 Conservation ecology

BIOL3305 Tropical & temperate marine ecology

BIOL3313 Freshwater ecology

BIOL3419 Insect ecology

BIOL4301 Fish and fisheries

BIOL4505 Oyster aquaculture

BIOL3314 Plant structure and evolution

BIOL3322 Marine invertebrate zoology

BIOL3318 Experimental intertidal ecology

BIOL4302 Environmental impact assessment

BIOL4304 Ecosystem functioning & services

ENVS3019 Urban ecology

ENVS3020 Global change ecology

BIOL3328 Nearshore marine & estuarine ecol.

Major in Ecology & Biodiversity



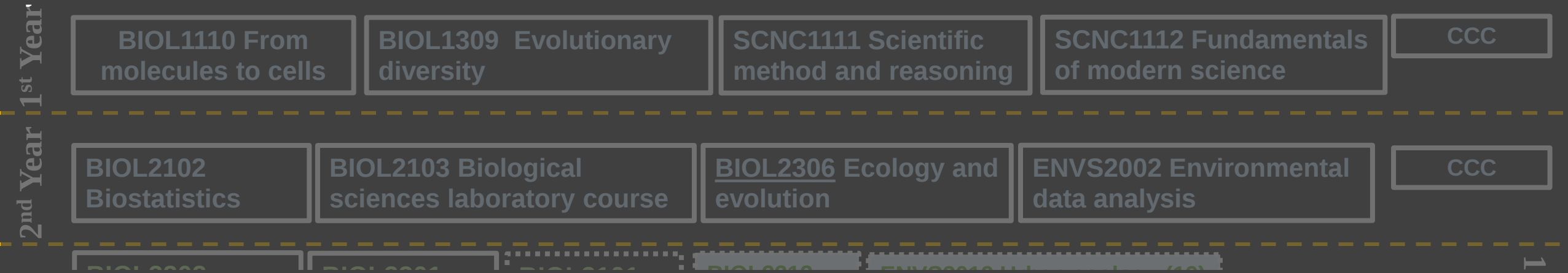
3. Capstone requirement (6 credits)

At least 6 credits selected from the following:

BIOL3991 Directed studies in ecology & biodiversity

BIOL4991 Ecology & biodiversity project

Total Major: 96 credits



20 core and elective courses

Small classes (12-25 students)

65% of courses with field components



Intensive Major in Ecology & Biodiversity

Accredited degree by the



Intensive Major in Ecology & Biodiversity



- **Diploma with increased international visibility & recognition**
- **Membership**
 - **Access to an international network of professionals**
 - **Discount on selected life science titles and professional development courses**
- **Insurance of excellency in teaching and learning**

1. Introductory level courses (60 credits)

Science Foundation Courses (12 credits)

SCNC1111 Scientific method and reasoning

SCNC1112 Fundamentals of modern science

Disciplinary Courses (48 credits)

BIOL1110 From molecules to cells

BIOL2102 Biostatistics

BIOL2306 Ecology and evolution

EASC1401 Blue Planet

BIOL1309 Evolutionary diversity

BIOL2103 Biological sciences laboratory course

ENVS2016 Environmental data analysis

One chemistry course: CHEM1041 or 1042

2. Advanced level courses (72 credits)

BIOL3302 Systematics and phylogenetics

BIOL3301 Marine biology

BIOL3319 Tropical terrestrial ecology

BIOL3101 Animal behaviour

BIOL3303 Conservation ecology

Plus at least 42 credits (7 courses) selected from the following:

BIOL3305 Tropical & temperate marine ecology

BIOL3313 Freshwater ecology

BIOL3314 Plant structure and evolution

BIOL3318 Experimental intertidal ecology

BIOL3419 Insect ecology

BIOL4301 Fish and fisheries

BIOL4505 Oyster aquaculture

BIOL3322 Marine invertebrate zoology

BIOL4302 Environmental impact assessment

BIOL4304 Ecosystem functioning & services

ENVS3019 Urban ecology

ENVS3020 Global change ecology

BIOL3328 Nearshore marine & estuarine ecol.

3. Capstone requirement (12 credits)

Core capstone course

BIOL4991 Ecology & biodiversity project

Elective capstone course (optional)

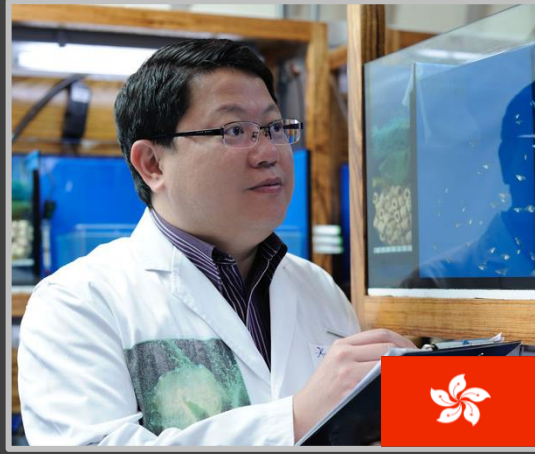
BIOL3991 Directed studies in ecology & biodiversity

Total Intensive Major: 144 credits

A diverse and international team



Prof. David Dudgeon
Freshwater Ecology



Prof. Kenneth Leung
Aquatic toxicology &
ecophysiology



Prof. Yvonne Sadovy
Marine biology &
conservation



Prof. Richard Saunders
Plant ecology & evolution



Prof. Gray Williams
Intertidal Ecology



Dr. Stefano Cannicci
Mangrove ecology

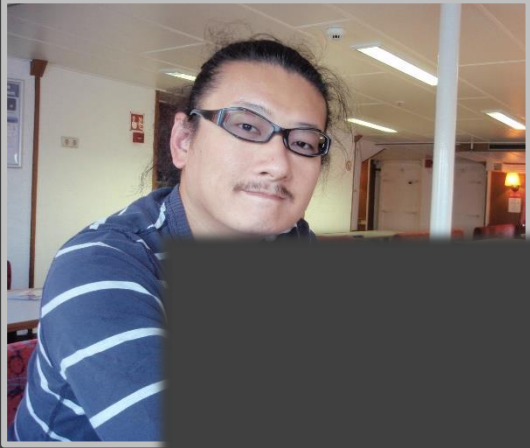


Dr. Rajan Vengatesen
Ocean acidification



Dr. Bayden Russell
Marine ecology

A diverse and international team



Dr. Mo
Deep s



gy

16 World-class researchers
(+ 2 joining soon)

> 1200 publications in ecology & conservation



Dr. J. D. Gaitán-Espitia
Ecophysiology & evolution



Dr. Benoit Guénard
Insect ecology



Dr. Billy Hau
Ecological restoration



Dr. Simon Sin
Animal Behaviour

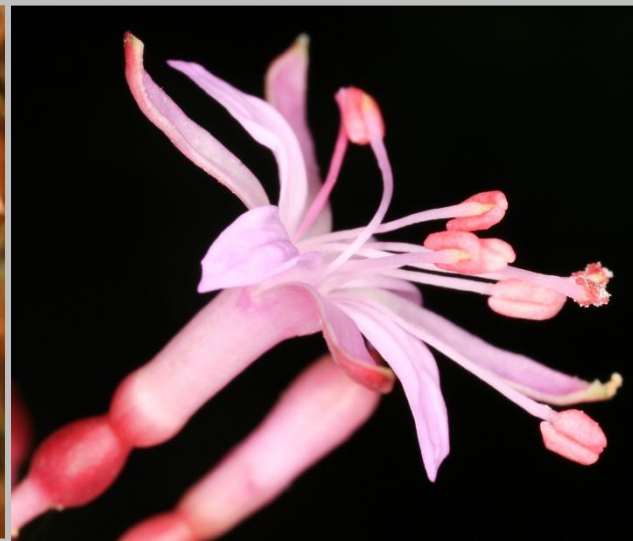
Major in Ecology & Biodiversity



Introductory Level Courses

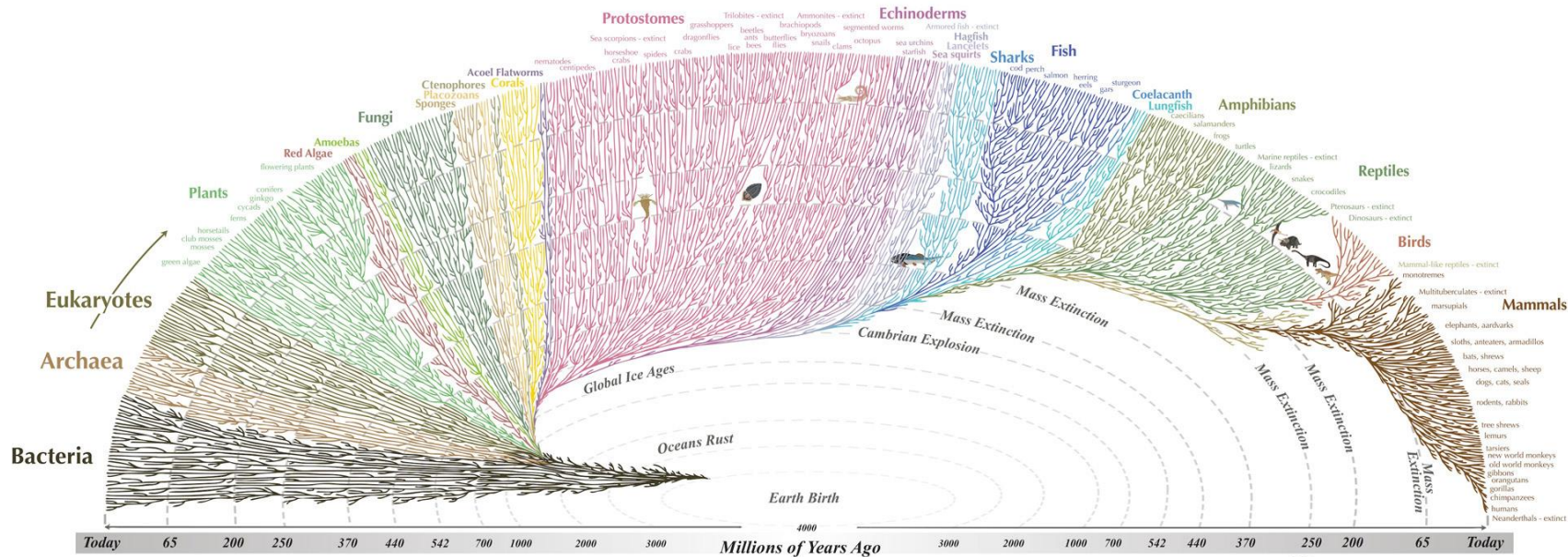
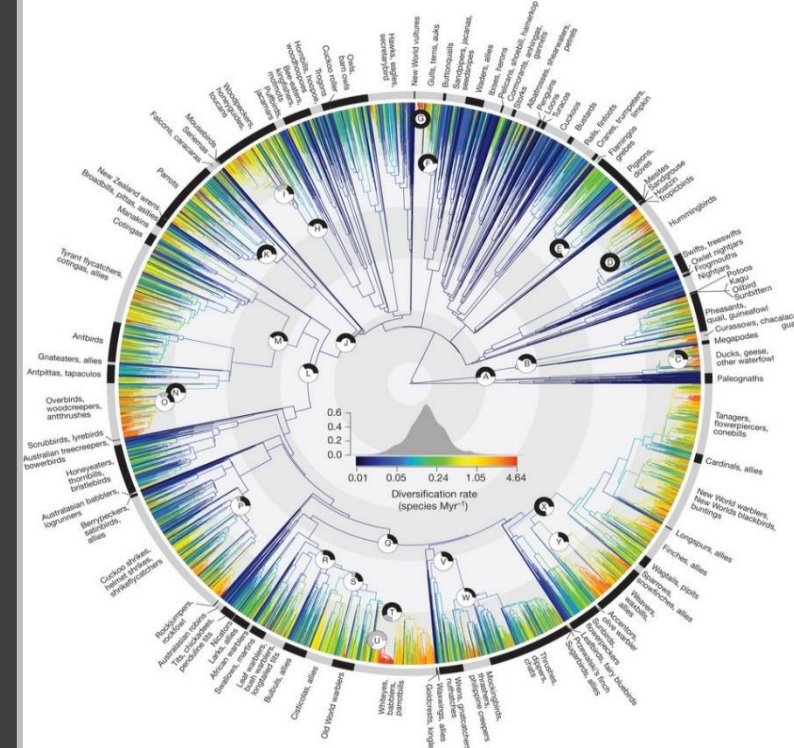
- *Evolutionary Diversity*
- *Ecology and Evolution*

Fundamental knowledge in Ecology & Biodiversity

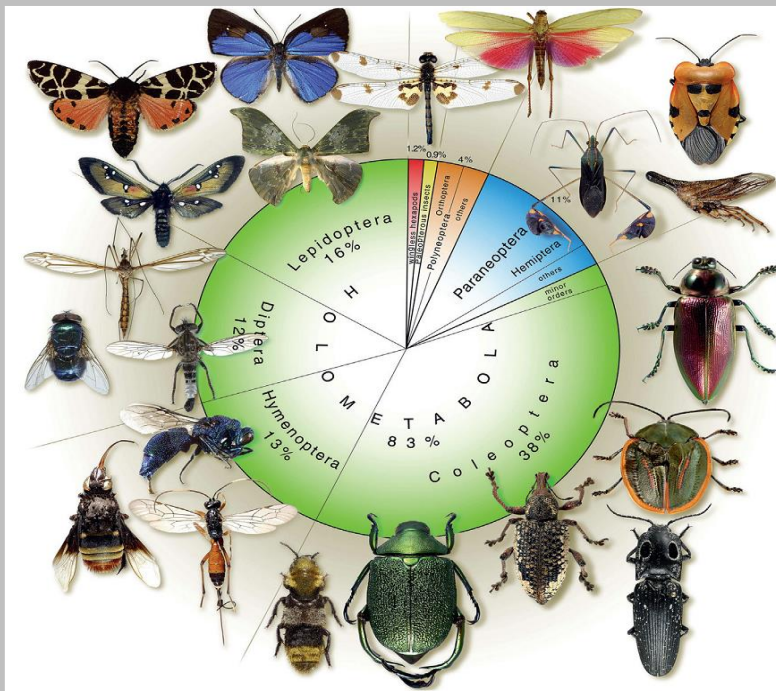


Evolutionary Diversity

- Introduction to the diversity of plant and animal life & their evolutionary history and relationships



All the major and many of the minor living branches of life are shown on this diagram, but only a few of those that have gone extinct are shown. Example: Dinosaurs - extinct



Ecology & Evolution

- Introduction to the interaction between organisms and their environment and the central role of evolution
- Understand and explain the significance of nature using scientific methods



Ecology & Evolution

- 5 days field course!
- Study both marine and terrestrial ecosystems & organisms of Hong Kong
- Familiarize with scientific methods to study organisms and their environments



Hands on learning

16 courses with field courses offered

Marine ecology

Terrestrial ecology

Coastal ecology

Freshwater ecology





Overseas field courses

- Australia
- British Columbia (Canada)
- Hainan (China)
- Malaysia
- Philippines
- Sri Lanka
- South Africa



Make an impact!

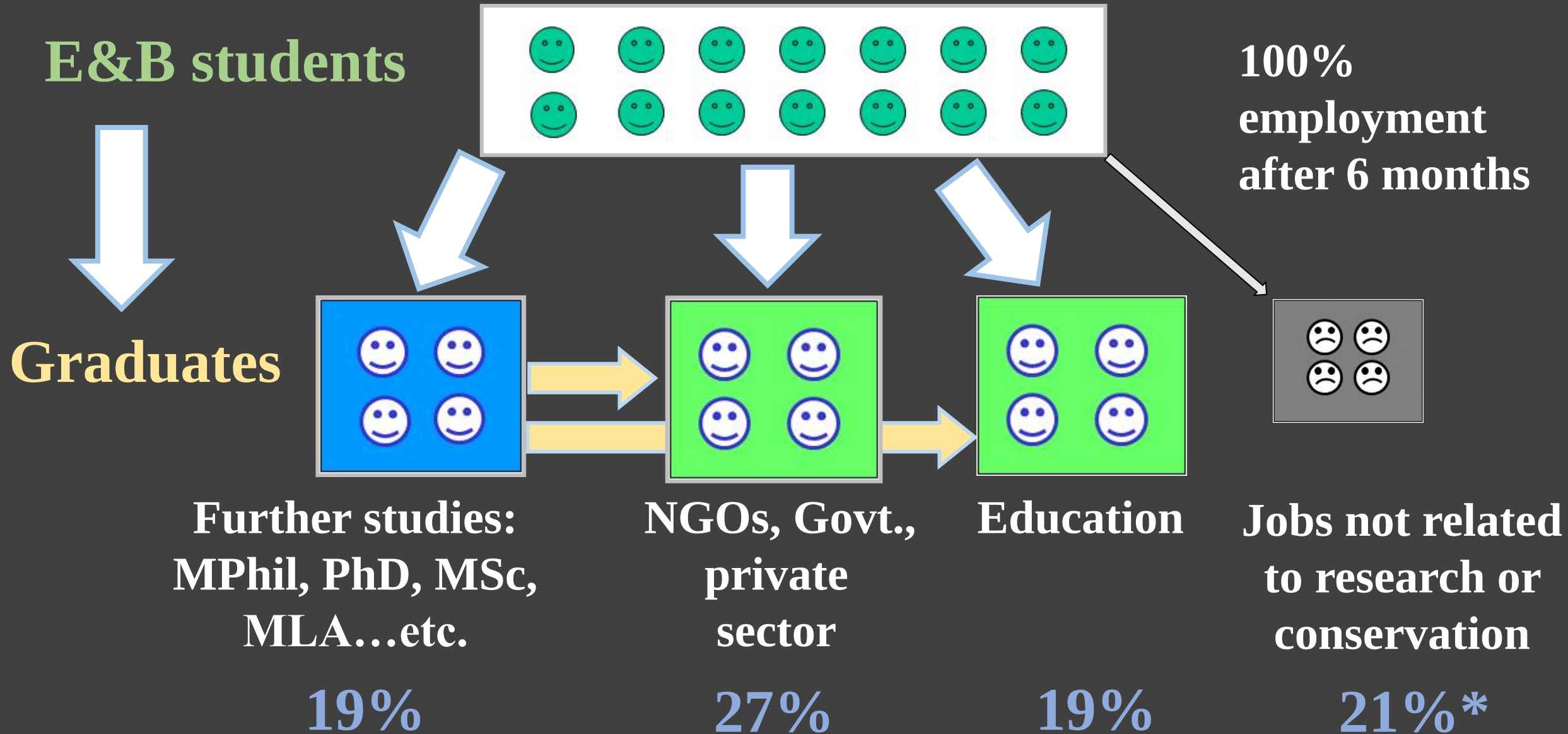
Many opportunities to engage into research as an undergraduate among one of 16 laboratories!



Swire
Institute of
Marine
Science



Building your future career



Student Peer Advisers in 2018-19

- **General roles**
 - **to offer advice in relation to academic studies to freshmen; and**
 - **to facilitate freshmen's smooth transition from secondary to university education**
- **You are highly encouraged to contact the following Student Peer Advisers (SPAs) if you have any questions about your study (their contacts can be found at the Faculty's website)**
 - **Mr TIN Kwan Yau (BSc Year 3)**



Thank you!



