

# Molecular Biotechnology Programme

分子生物技術學課程

**Academic Counseling Session  
2012**



Under the UV light there are some different!

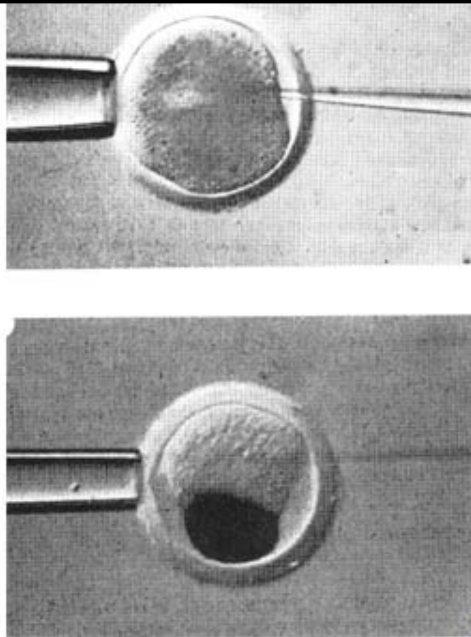
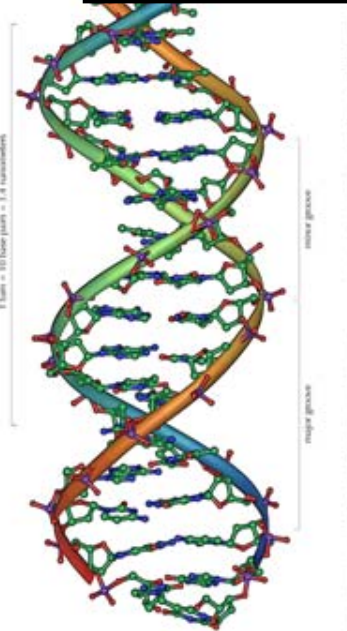


# Molecular Biotechnology

between tg and non-tg cloned calves from the same donors



## Emphasis: From Science to Technology



Engineering Rice for Beta-Carotene, Vitamin E, Iron, Protein and Iron and Zinc Bioavailability

Multi-Nutrient Stacking:

Vitamin E

Iron

Zinc

Lysine/  
High-quality protein

"Golden Rice"



Pro-vitamin A

Nutrient-rich rice (ProVitaMinRice) for humanitarian use



# ***Molecular BioTechnology Programme***

## ***分子生物技術學課程***

### **Our missions**

**High quality education in preparing for R & D in biotechnology**  
**Training in scientific way of knowing and problem solving**



**Cell biology**  
**Genetics**  
**Biochemistry...**



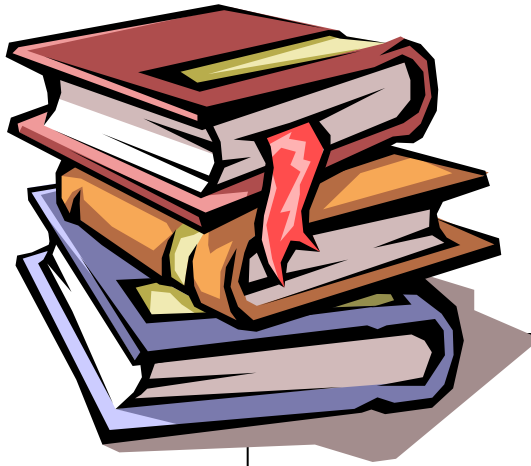
**Animal Biotechnology**



**Plant Biotechnology**



**Microbial Biotechnology**

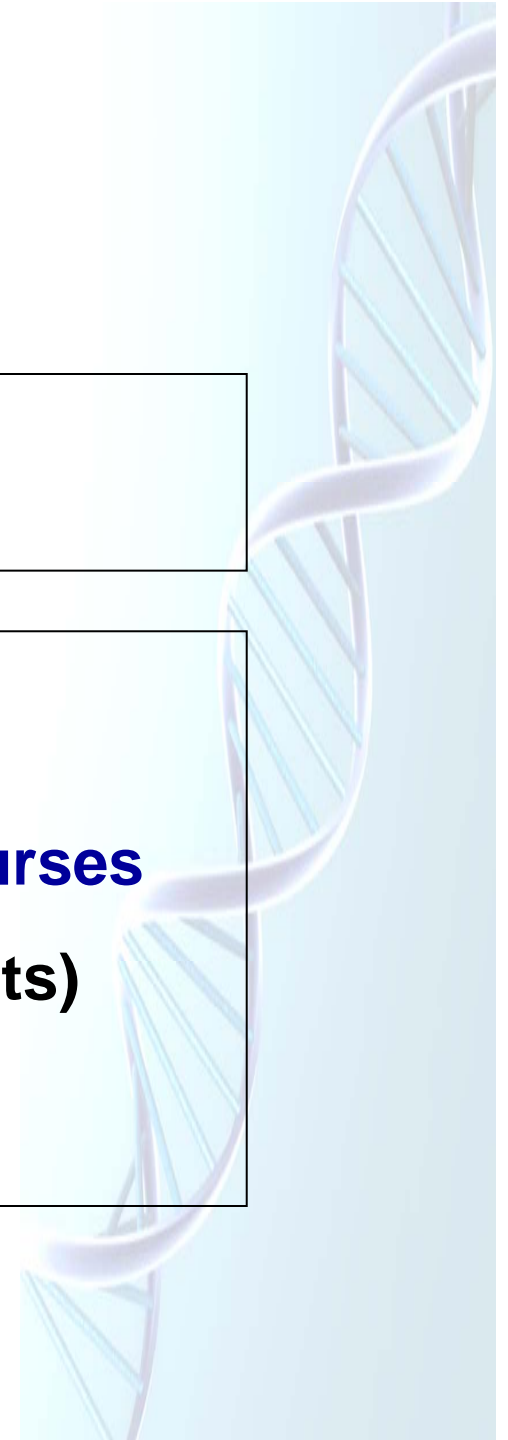


# ***MBTE Curriculum***

**Major courses (60 units)**

**Required courses  
(48-50 units)**

**Elective courses  
(10-12 units)**



# Recommended Course Pattern

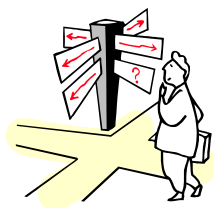
📎 First Year of Attendance                      **17 units**

📎 Second Year of Attendance    **21/23 units**

📎 Third Year of Attendance            **17/19 units**

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**Total: 60 units**



A student shall **NOT** take less than 12 units nor more than 21 units of courses in a term

# Academic Advisory System

- **An academic advisor to each student**
- **To provide academic counseling, personal guidance and help in his/her study**
- **To provide consultation on other academic matters, such as failure in course, academic probation etc.**
- **To meet students every term to discuss their programme of studies and review the study schemes with them on the course selection**



# ***MBT Curriculum ( the 2nd Year)***

## **Required Courses:**

### **1<sup>st</sup> Term**

- **BIOL3410 General Microbiology (3)**
- **MBTE4320 Genetic Engineering (3)**
- **MBTE4033 Methods in Molecular Biotechnology Lab I (2)**

### **2<sup>nd</sup> Term**

- **BCHE3030 Methods in Biochemistry (3)**
- **BCHE4010 Molecular Biology (2)**
- **MBTE4034 Methods in Molecular Biotechnology Lab II (2)**

### **Summer Term**

- **MBTE4800 Research in Molecular Biotechnology(2) (optional)**

## **MBT Major Elective Courses: (4-6 Units)**

### **1<sup>st</sup> Term**

 **MBTE4510 Plant Biotechnology (3)**

### **2<sup>nd</sup> Term**

 **MBTE4520 Animal Biotechnology (3)**

 **MBTE4530 Microbial Biotechnology (3)**



# ***MBT Curriculum ( the 3rd Year)***

## **Required courses:**

- **MBTE3000 Business and Social Aspects of Biotechnology(3)**

## **Final Year Project courses (2-6 units):**

- **MBTE4830/4840 Literature Senior Seminar I/II (2/2)**
- **MBTE4850/4860 Senior Experimental Project I/II (2/2)**

## **Elective Courses: (15 units)**

- **See next page**





# ***MBT Curriculum ( 2nd - 3rd Year)***

## **Elective Courses:**

### **1st Term:**

***BCHE3040 Proteins and Enzymes (3)***  
***BCHE3080 Metabolism and Bioenergetics (3)***  
***BCHE3680 Metabolism and Bioenergetics Lab (2)***  
***BCHE4030 Clinical Biochemistry (3)***  
***BCHE4060 Basic and Applied Immunology (3)***  
***BIOL3630 Animal Physiology (3)***  
***BIOL4120 Developmental Biology (3)***  
***CMBI4001 Protein Trafficking (1)***  
***CMBI4002 Protein Folding (1)***  
***CMBI4003 Signal Transduction (1)***  
***CMBI4201 Genomics (1)***  
***CMBI4202 Transcriptomics (1)***  
***CMBI4203 Metabolomics (1)***  
***MBTE4510 Plant Biotechnology (3)***

### **2nd Term:**

- ***BIOL3530 Plant Physiology (3)***
- ***BIOL4032 Physiological investigations (2)***
- ***BIOL4330 Bioinformatics and Proteomics (3)***
- ***CMBI4101 Cancer Cell Biology (1)***
- ***CMBI4102 Stem Cell Biology (1)***
- ***CMBI4103 Neuronal Cell Biology (1)***
- ***CMBI4301 Current Topics in Cell Biology (1)***
- ***CMBI4302 Current Topics in Molecular Biology (1)***
- ***CMBI4303 Current Topics in Biotechniques (1)***
- ***MBTE4520 Animal Biotechnology (3)***
- ***MBTE4530 Microbial Biotechnology (3)***
- ***STAT3210 Biostatistics (3)***
- ***BMEG2130 Introduction to Biomedical Engineering (3)***

# ***You can experience and learn through.....***

- Lectures
- Laboratories
- Tutorials
- Project discussions
- E-learning
- Visits



## **Experimental Senior Project/Literature Senior Seminar**

- ❖ You can undertake an individual research/ literature review project in the final year of study
- ❖ Under the supervision of a professor from (BCH, BIO, Medicine & overseas)
- ❖ With flexibility: 2-4 units  
Half-year to one year  
Starts at summer or Sept
- ❖ Project proposal, written report and oral presentation





# Biotech Companies visits



DNA Clips Co. Ltd.



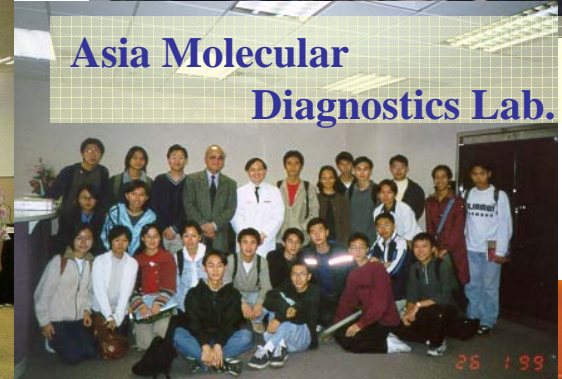
HKIB



Shenzhen Kexing Bioproducts Co., Ltd



CK life Sciences



Asia Molecular Diagnostics Lab.



Hong Kong Institute of Biotechnology Ltd



Institute of Chinese Medicine



# **MBT** broadens students' horizons.....

## **Summer Internship Programme**

- **Objectives**  
To learn and experience biotech research and business operation in **overseas** labs and companies
- **Period**  
2<sup>nd</sup> year, summer
- **Some of the placement organizations**
  - School of Medicine, University of California, **USA**
  - M.D. Anderson Cancer Center, Texas, **USA**
  - Donald Danforth Plant Science Center, **USA**
  - University of Oklahoma Health Sciences Centre, **USA**
  - Law Offices of Albert WK Chan, New York, **USA**
  - Toronto Western Research Institute (TWRI), **Canada**
  - University of Heidelberg, Heidelberg, **Germany**
  - University of Regensburg, **Germany**
  - Health Research Institutes, **Taiwan**

### **Together with the active participation in the University Exchange Programme**

- Around 30 % of **MBT** students enriched their university life with these valuable **overseas** experiences in the last 3 years





# We have plenty of Internship and Exchange opportunities



Law Offices of Albert Chan, New York



# Visiting Examiner meeting students

**Prof. Jane E. Aubin**  
University of Toronto, Canada  
10 - 20 April 2004



The students are confident in their abilities, can source, assimilate and analyze information critically, and effectively communicate their ideas

**Prof. Virginia Walbot**  
Stanford University, USA  
17 to 28 Feb, 2001



MBT Programme is a high-class offering that is competitive internationally

**Prof. J Derek Bewley**  
University of Guelph, Canada  
19 - 31 May 2008; 6-14 April 2010



MBT is attracting students who are very strong academically and who are willing to work hard to achieve the prescribed learning objectives





# Renowned Scientists visiting



**Symposium in Biotechnology for the 21st Century: Applications and Training**



**Prof. Virginia Walbot "Regulation of Mu Transposons in Maize and Their Utility in Gene Tagging and Cloning"**

**Symposium In Molecular Biotechnology**



**The Nobel Laureate, Dr. Richard Roberts "My life in Scientific Research"**



**Prof. Jane E. Aubin "Regulation of Bone Formation"**



# ***MBT*** graduates go to.....

## **Further studies: (68%)**

- **Local and overseas Institutes**
  - USA (e.g. Yale University, UC Berkeley)
  - Canada (e.g. University of British Columbia )
  - Europe (e.g. Cambridge, Oxford )

## **Research (Post-doctoral fellowship):**

- (e.g. University of Washington, University of Cincinnati, New England Bio Labs)

## **Government, Education, Publication:**

- A.O., E.O., secondary school teachers,...

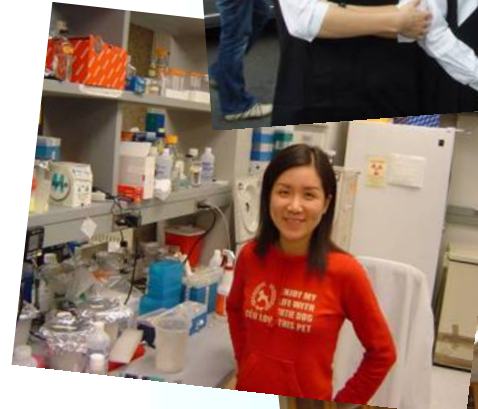
## **Medicine & Pharmacology:**

- Manager, clinical research associate, representatives, ...

## **Business & Finance:**

- Management trainee, H.R. officer, P.R. officer, ...

***And more ~ .....***

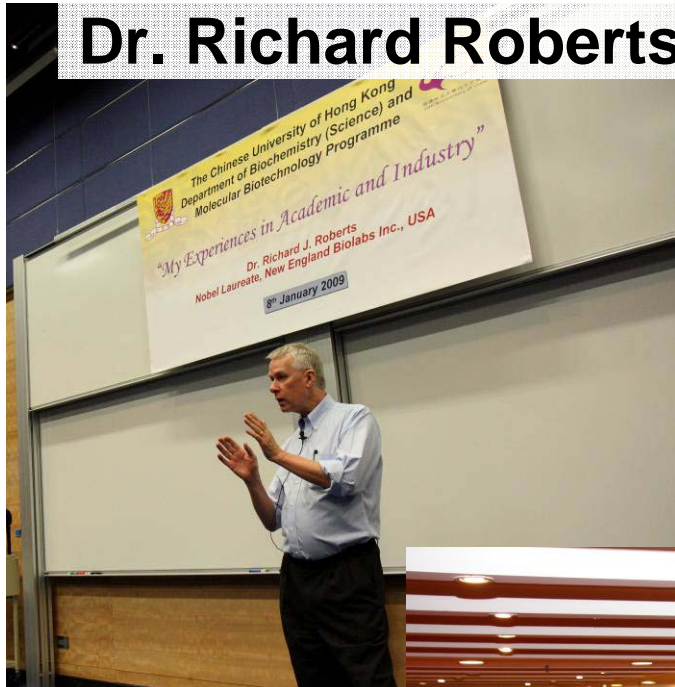




# MBT 10<sup>th</sup> Anniversary in 2008

## Seminar of Dr. Richard Roberts

## Symposium “Molecular Biotechnology in the 21<sup>st</sup> Century”



## 10<sup>th</sup> Anniversary Reunion Banquet





# Welcome to MBT!!

