Novel Educational Programme

A Chemist Entrepreneur
Business Aspect

- Protected exposure to the business world.
- Insight to how businesses are structured.
- Incorporate thoughts about important functional cooperation within and between different departments.
- Experiencing problems of project management and customer relations.
Scientific Aspect

- Conducting literature and patent searches.
- **Process development** for clients from within NUS as well as for industrial customers.
- “Learning By Doing” to build up technical knowledge to hone individual scientific skills.
Possible Company Spin Off

Innovative Programme Model

Applied Chirality Tigers
Exploiting Nature’s Toolbox

For Production of Chiral Fine Chemicals
Innovative Programme

1. Acting as a platform to create solutions through Research & Development to address clients’ needs with respect to speed, cost and risk.

2. Creating a whole process development that includes the research, development, scale-up, engineering design, and economic analyses up to pilot scale production. (One Stop Shopping)

3. Comprises of Biochemical Production processes (Synthesis of Chiral chemicals) and Downstream processes (Automation and Prototypes)

4. Main focus is to create synergy between academic institutions and industry (faster time to market) for process development of fine chemicals.
Current Research and Production Team

TAN EE SANG
Project Director
Bio-Catalyst Research

TAN YI JIANG
Production Manager
Bio-Catalyst Research

BONG SIEW FANG
Production Manager
Product Development

LIM BOON TIONG
Project Director
Product Development

JESSICA
Human Resource
Product Development

LEE MING JING
Human Resource
Analytical Research

HOH WENG YAN, JOSHUA
Project Director
Analytical Research

Associate Professor
DR JAENICKE, STEPHAN
Academic Mentor

Professor
DR LI FONG YAU, SAM
Academic Mentor

Active Alumni Advisory Board

FOW KAM LOON
Chief Scientific Officer

SIM SIANG TZE, VICTOR
Chief Executive Officer

JIAN MING XIAN
Head
Marketing, Upstream Process, Production

WON JUN YI
Head
Human Resource, Downstream Process

Scientific Advisory Board

Associate Professor
DR JAENICKE, STEPHAN
(Chairman)

Professor
DR CHRISTIAN WANDREY
(Invited)

DR IVY TAN
(Invited)

External Liaisons

LESTER POON (Head)
Undergraduate, University of British Columbia

IDA WONG
Undergraduate, University of British Columbia

Applied Chirality Tigers
Specialized Human Resources

- 3 main groups of employees
  - **Professors** acting as Non-Executive Directors (Job Scope is *Project Approval* and assisting in Industry Liaison)
  - **Graduate Students** acting as Project Manager (Job Scope is *Professional Guidance* and *Supervision of Projects*)
  - **Undergraduates** acting as Project Officers (Job Scope is *Industry Liaison*, *Process Development with Innovation* and *Economical Analysis*)

*New recruitment every 6-12 months, 1 month transition period*

*The people are the key to success!*
Attractiveness of Innovative Programme

Programme Benefits

- Non-Monetary Benefits (Main Push Factor)

- Monetary Benefits (Bonus)
  - To be introduced later.
Non-Monetary Benefits

Everyone Benefits

- National University of Singapore & Faculty of Science
- Professors
- Graduate Students
- Undergraduate Students
- Outside Industry
Innovative Programme

- Differences between NUS-Industry Collaboration Laboratory and Innovative Programme
  
  - **Low cost** involved in personnel and equipment except for a nominal grant to cover purchasing of chemicals purchase and maintenances of equipment.
  
  - More **development oriented** of bringing research to actual pilot plant scale manufacturing capabilities.
  
  - **Promoting leadership** among students.
  
  - **Enhancing innovation** to help industry in a more efficient manner.

Innovative Programme: Providing low cost development process that promotes entrepreneurship and enhances innovation
Innovative Programme

- **Primary Aim:** Custom synthesis of small amounts (grams to kilograms) of chemical entities, literature, patent searches and process development of fine chemicals.

- **Secondary Aim:** Students to recognize how businesses are structured through an exposure to the business world and to problems of project management and customer relations.
Thank You