# HKUST

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香港科技大學 THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

# International Research Enrichment HKUST School of Science



# What is IRE Program?

- Launched in 2013, tailor-made for students with particular interest in pursuing *research career* in science
- It offers outstanding science students an *early opportunities* to nurture their research abilities by participating in *international research* 
  - IRE Program is an independent and separate program choice — JUPAS Program Code: JS5101
- Intake quota: 21 per year

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- Students can apply for IRE Program through:
  - Direct program choice in JUPAS or direct entry; OR
  - Transfer from the Science (Group A) (JS5102) or Science (Group B) (JS5103)
    programs to the IRE Program after the first year of study

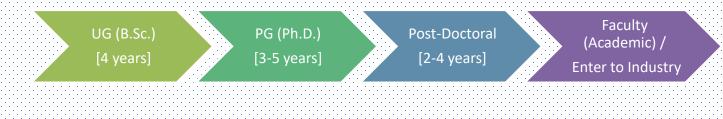
# Why INTERNATIONAL?

- The program is built on the premise that *early international exposure* is highly beneficial for the *success in a research career*
- HKUST is a research-oriented university, which is well-known for its excellence in
- research

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- We have a *wide international connection* for offering students research opportunities in foreign universities
- Usually, it takes around 10 years to develop an academic research career and an internationally recognized research work is a "must" for a good faculty job nowadays



#### Class of 2019 Highlight of PhD Offers

Caltech / BiologyClass of 2020 HighYale University / BiologyMIT / MathCornell University / BiologyMIT / MathHKUST / Life ScienceColumbia UniversityUC Berkeley / ChemistryUC IrvitPenn State / Applied MathematicsCaltechHarvard University / Chemical PhysicsColumbia UniversityYale University / PhysicsColumbia UniversityUniversity of Maryland / PhysicsUIUCNorthwestern University / PhysicsNorthwestern University

# International Research Enrichment (IRE)

### Class of 2020 Highlight of PhD Offers

MIT / Material Science Columbia University / Math UC Irvine / Math Caltech / Physics Columbia University / Applied Physics Columbia University / Physics UIUC / Physics Boston University / Physics

### Unique Research-Based Program for **Future Scientists**

A tailor-made program for outstanding students pursuing a research career



- Individualized Research Guidance and Mentoring
- Summer research internship
- Scholarship support
- Many more ...





2010 Summer Research meensmp hose mstrations						
BCB	Stanford, USA	U. Chicago, USA				
DCD	Monash, Australia					
CUEM	MIT, USA	Yale, USA				
CHEM	Northwestern, USA					
	UC Santa Barbara, USA	Tennessee, USA				
MATH	UCLA, USA					
	Harvard, USA	UC Berkeley, USA				
	U. Chicago, USA	Yale, USA				
PHYS	Boston U., USA	McGill University, Canada				
	EPFL, Switzerland	TU Munich, Germany				

PSI, Switzerland

2018 Summer Research Internship Host Institutions

2019 Summer Research Internship Host Institutions					
BCB	Johns Hopkins, USA	UCL, UK			
БСБ	Scripps Institute, USA				
CUEM	MIT, USA	UIUC, USA			
CHEM	EPFL, Switzerland				
	Columbia, USA	San Diego State, USA			
MATH	Missouri, USA				
	Princeton, USA	Oxford, UK			
	Columbia, USA	King's College, UK			
PHYS	U. of Michigan., USA	CERN, Switzerland			
	Penn State, USA	UBC, Canada			
	Santa Fe Institute, USA				

# **Our Faculty Members**

Faculty members have received awards and honors for outstanding achievements in research and scholarship:

### **Prestigious Honors**

- State Natural Science Awards
- Croucher Senior Research Fellowships
- Croucher Innovation Awards
- Morningside Gold Medal of Mathematics
- L'Oreal-UNESCO for Women in Science Award
- Achievement in Asia Award
- Khwarizmi International Award

### **Election to Top National Academics**

- Academicians of the Chinese Academy of Sciences
- Foreign Associate of the US National Academy of Science
- Fellow of the American Physical Society
- Fellow of the Royal Society of Chemistry
- Fellow of the Society for Industrial and Applied Mathematics
- Fellow of the Academy of Sciences for the Developing World



#### QS World University Rankings 2021 **International Rankings** (By Subject) Chemistry (No. 1 in HK) QS World University Ranking 2022 Materials (No. 2 in Hong Kong) Sciences **Times Higher Education** World University (No. 1 in HK) 16 Ranking 2021 # 56 in the World # 34 in the World QS Asian University Rankings 2021 **P**+1=0 (No. 2 in Hong Kong) **Mathematics Times Higher Education** (No. 1 in HK) Asia University # 8 in Asia # 8 in Asia Ranking 2021 QS Top 50 Under 50 Rankings 2021 Natural Science (No. 1 in Hong Kong) (No. 1 in HK) **Times Higher Education** Young University Statistics and Operational Research: #47 (No. 1 in HK) Ranking 2021

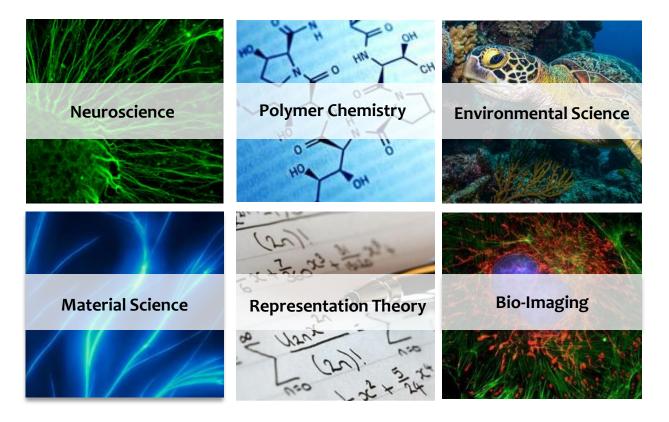
# 2 Young University

# 3 Young University

Physics and Astronomy: #37 (No. 1 in HK) Environmental Sciences: #41 (No. 1 in HK)

# **Research Excellence**

Top-notch fundamental science research gearing towards paradigm shift



### RESEARCH EXCELLENCE



#### Department of Physics

#### Research Foci

- Atomic, Molecular, and Optical (AMO) Physics
- · Biophysics
- · Computational Physics
- + First Principles Studies of Material Properties
- Information Physics
- Nano Materials
- · Particle Theory and Cosmology
- · Physics of Semiconductors

- + Soft Condensed Matter Physics
- + Strongly Correlated Electron Systems
- · Surface Physics
- Ultrafast Photonics and Nonlinear Optics
  Wave Phenomena and Wave Functional
  Materials

The Department concentrates its resources on condensed matter physics with potential relevance to the technological industry. Faculty research focuses on optical condensed matter and statistical physics, and includes the physics of lasers, solid state, mesoscopic systems, devices nanomaterials, thin films, surfaces, interfaces, liquid crystals, polymers and composites.

The Department also has a close link with HKUST's front-running William Mong Institute of Nano Science and Technology for the interdisciplinary collaboration in the area of nanomaterials and nanotechnology.

#### Department of Mathematics

#### Research Foci

- + Algebra and Number Theory
- + Geometry and Topology
- Analysis and Differential Equations
  Applied and Computational
- Mathematics
- + Financial Mathematics
- + Probability and Statistics
- Data Science

The Department enjoys a range of up-to-date facilities and equipment for teaching and research purposes. The department's computer laboratory and Math Support Center are equipped with 70 desktop computers for undergraduate and postgraduate students. The Department also provides an electronic homework system and a storage cloud system to enhance teaching and learning.

To assist computations that require a large amount of processing power, a High Performance Computing (HPC) laboratory was setup in 2000. By making use of these powerful computing facilities, our faculty and students are able to solve computationally intensive problems in their innovative research projects so that they can stay at the forefront of their fields.



### RESEARCH EXCELLENCE

#### Department of Chemistry 🔹 🗨 👁

#### esearch Foci

- Analytical/Environmental Chemistry
- Chemical Biology
- · Material Sciences
- Molecular Dynamics and Structure of Complex Systems
- Synthetic Chemistry

The Department is well equipped with modern laboratories and state-of-the-art instrumentation. In addition, the Department has international links with major chemical industries and has played a key role in setting up university-wide collaborations involving universities, research institutions and companies in Hong Kong, the Mainland Chine, Japan, Europe and the US.



#### Department of Ocean Science

esearch For

- Marine Ecology
- Oceanography
- Ocean Technology

The Department emphasizes on building multi and cross-disciplinary research and educational programs in Ocean Science and Technology. Our primsry study sites include the estuarine environment of the Pearl River, the coastal bays of Hong Kong, and the deep sea lincluding the South China Seal. Our Ocean Research Facility on camous is a



key item of infrastructure supporting our marine researches, while the Environmental Central Facility provides a range of equipment and technology commonly used in water and atmospheric environmental researches.

#### Division of Life Science

#### Research Foci

- Cellular Regulation and Signaling
- + Cancer Biology
- · Developmental Biology
- + Molecular and Cellular Neuroscience
- + Macromolecular Structure and Function
- Biotechnology and Medicinal Biochemistry

The Division has established robust research infrastructure in a broad range of areas. The Animal Care and Plant Care Facility provides a centralized and modern facility for study of animals and plants. Centralized state-of-the-art facilities for blochemical and cellular studies are provided by the Biosciences Central Research Facility. Faculty members working in these areas form a coordinated research team. Such coordination takes full advantage of the faculty's expertise in generating innovative development and productive research.





【香港南報訊】記者報合理報 道:2017年度国家科學技術發驗人 會時目在北京舉行·在評選出的 271 朝道目中,香油料學家主持定 或成參與定或約共有6項·信中 香港科技大学深座教授所本出主持 完成的「聚集試得發光」將國家自 然科学说 等現

#### AIE 研究取得一系列成果 他带开口,这部课证利用分子在集动一会共通程。

建立起用超表内容截然可见的凝集进度是无法的概 科大課度教授意本忠王持完成的「聚集課事發光」獲諾家族林科 ·必须说道:由本生我过,随家时的限制在内约3.86 来就大,吸引更多强勇人才深刻竭内。而简新投大国 今年33월、张彧登项目是由香港科學家用內地區 的标题抽题、企业使作定和性的、引着性的科学研 10、2007機構合作記述、公司是:微測用工大型土木 R + N AR EARS-BOOMER PERMITSIN - & COLORADO DE LA COLORADO DE 过新香港第二大港市建立方共民族第一等型,21 香油大学汇母系社经主之利管理 Jon 印度调度

这里城工程系自由我把建长生体和的 建筑香油的马 · 伊耳龍總信承礼其地探上进利 · 被逐家投始告诉 增二用册,研究解决了K系段化和市动编辑超过之中利 局半组、汽车运营利数法直建驾谷等中人强量使用

#### Leading global scientists to join HKUST in Alzheimer's research

Officiating at the signing cor-	therapeutics," she added, 15 is also a artifice terrarise lettilet.	To the point, page 9
Research will also focus on the aging mechanism of human brains to give claes to prevent the disease.	ease is hindering the development of urgently needed diagnostics and therapeutics," she added, Ip is also a	Inside
Altheimer's disease.	"But limited knowledge of the dis-	WHO said.
to better monitor and understand	our time".	70 percent of all dementia cases, th
ence research at the center in order	disease "was a major health crisis of	dementia; it can contribute to 60
universities will conduct neurosci-	head of the project, said Alzheimer's	disease is the most common form
the Hong Kong Science Park later this year. Experts from the four	Yuk-yu, vice-president of research and development at HKUST and also	with an annual increase of near 10 million new cases. Alzheime
tive Diseases will be established in	At the same occasion, Nancy Ip	people worldwide have dementi
The Center for Neurodegenera-	rodegenerative diseases.	nization data, at least 50 millio
London.	the diagnosis and treatment of neo-	According to World Health Org
of Medicine and University College	can actieve significant advances in	run, she ventured.
Aging at Stanford University's School	of the world's leading institutions	of science in Hong Kong in the lo
E Glenn Center for the Biology of	She excressed the hope that four	tribute to the further developme
Hospital — a Harvard Medical School teaching hospital — the Paul	neurosegenerative diseases," Lam	young scientists. Ip said. It will co
agreement with Boston Children's	of Alzheimer's and other daunting neurodegenerative diseases," Lam	Meanwhile, the center will al be the perfect training ground f
move on Wednesday as it signed an	delay the onset or to affect the course	more samples for research.
The university announced the	tive treatments available, either to	Hope Christian Service to colle
lenge facing aging societies.	ues to advance, there are few effec-	of Wales Hospital and the Haven-
Altheimer's disease - a global chal-	neurodegenerative diseases contin-	Queen Elizabeth Hospital, the Prin
center in the city for research on	"Although our understanding of	Locally, the center will work wi
ence and Technology will set up a	previalent in aging populations.	seas institutions in future.
The Hong Kong University of Sci-	Alzheimer's - were becoming more	laboration with mainland and on
and and construction case	generative diseases - particularly	Tokyo, Ip said she expects more of
Bingers mit chilmanda ilgibit come	Cheng Yuet-Ngor said neurode-	collaborate with the University



香港科技大學和哈佛大學科學家發現探測極早期宇宙演化歷史的方案 有助了解宇宙起源

百世港大学 间充成的 26-01-2016 的数据总统

STN DOG

宝料社会び加

思對人感)

起重大突袭位于 香港科技大學和哈佛-史密松天婚物理中心的科學家發現一種在觀 **東江市山田** 测上區分不同極早期宇宙理論的方法。研究結果已被宇宙學和天體 粒子物理學學術期刊接纳。

> 早於約一個世紀前,科學家已經確立宇宙正在膨漲。但就極早期的 宇宙而言,它的演化一直是科學家們爭論的講題。目前,最流行的 極早期宇宙理論是暴涨理論。暴落理論認為極早期宇宙經歷過一次 快速膨涨的過程·另外,一些科學家也提出了快速收缩、緩慢收 缩、静態以及緩慢膨漲等不同的宇宙學理論。

> 直至目前為止,科學界還未有準確的辦法從觀測上區別這些不同的 理論,因為不知道極早期宇宙的不同階段到底對應甚麼時間,於 是,科學家不知道極早期宇宙到底是在膨漲,還是收缩。

# 科大研發新藥治肺頑症

【大公報訊】記者湯嘉平報道:可致 命的肺結節病一直無治愈方法,科大團隊 近日發現一種有效調節炎症的分子,它有 助治療肺結節病患者。科大並與美國公司 研發新藥,目前已進入臨床二期試驗階段 估計新藥數年後可推出市面,之後或考 慮與本港的醫院合作。該新藥較傳統肺病 治療藥物更精準用於肺部,因而副作用小 ,亦可用於治療早期肺病

科大團隊昨公布該項研究結果時指出 ·肺結節病是一種間質性肺病,在内地估 計有超過50萬名患者,香港每年亦有約120

宗屬間質性肺病的特發性肺纖維化新症 病的成因包括空氣污染及吸煙等。爲找到 有效療法,科大研究人員利用10年時間, 發現一種新型「tRNA合成酶蛋白」分子 利用動物實驗時,發現有助調節免疫系

統功能 科大生命科學院講席教授及盤古合作 項目統籌人、中國科學院院士張明傑表示 科大利用該個原理,研發候選新藥 ATYR1923」,可以治療因免疫系統過度 活躍而引起的肺結節病,以及其他纖維化 肺病



纖維化肺病

傑(左)指新藥可治療肺結節病及其他 大公報記者湯嘉平攝

Quantum Primordial Standard Dod

物理學系助理教授王一

科大小箱40分鐘驗新肺炎 可隨時供港府 深穗疾控採用

前成理儀





理時後來到試士原採用「服合態達銷 反應」(PCR)找術·原理是將榮本 的脱氧核糖核酸(DNA)放大, 亚伯 期病毒的核糖核酸(RNA) 是否與 新说冠状病毒剧合。温逝往济释、检 照時雷加熱樣本,加熱快慢會影響檢 图速度,面像统的PCR反應属平均每 秒升4至5℃,此圆隙研發以「砂茎薄 题」(silicon-based)取代现有以丰盛 懷製作加熱器、令加熱速度快至每秒 30°C、检测時間可由现有技術15至3 小時加快至40分前。

#### 利高速助增准确度 成本便宜34

道 搶 住 说· 庙 青RNA含 有 商 (Enzyme) 活性會隨時間減慢,影響



步程

以默紙在病人

腔取様·様:

熱至96℃

混合試劑,放入

「前處理術」加



资料来源:利大师把单无数经常操件展升

科大新型冠狀肺炎檢測儀

由微读生物芯片、使镶式「整

合商連鎖反應」(PCR)儀。

種本前處理而停、牛肉輪溜

芯片和新祝供靠核酸植造过

赘言很成:可**同時待測8個** 

操作流程

糯木

果亦爲陽性,認爲檢網儀可靠。關隊 證,符合出口本准及其他識型城市標 目前已捐赠敷台列武英、南沙及深圳 19. • 07.0015-08.0037-69.00 等继续控中心,每次测试成本描码50 元人民態, 峻根有側は方法200元人民 带研究,接作如该或体该测过相同。

街生防護中心公共街生化输服器成合 极雄最新科研道标、定期检视和改良 **请照什说,请找街已得欧洲合格**認 新用同用4年度的原则方法:

### 科大病毒檢測儀 最快36分鐘有結果

冠狀肺炎病毒檢測 最快可於36分鐘內迅速確



診新冠肺炎病毒、較現時一般檢測僅快約兩 小時,大大提升篩查進度,新型檢測催現已 於內地投入服務。

#### 手提設計內置充電 可戶外用

新型檢測儀由科大物理學系溫維佳及其 團隊成員高一博博士等人研發,按科大提供 的資料顯示·深圳市尚維高科有限公司按照

科大研製出快速新型冠狀肺炎病毒检测值,最快 可於 36 分鐘內迅速確診新冠肺炎病毒,新型检测儀 理已於內地投入服務 (資料圖片)

### Researchers in HK make quicker test kit for virus

New portable device is said to be able to detect novel coronavirus in as little as 40 minutes

#### Albert Han

albert.han@scmp.com

A group of Hong Kong researchers vesterday said they have invented a cost-effective device that can detect the novel coronavirus in as little as 40 minutes.

The team, led by Weijia Wen, a physics professor at the Hong Kong University of Science and Technology, said the device which inspected body fluid samples - could spot the coronavirus more quickly than ever before.

《新型冠肺炎病毒感染的肺炎實驗室檢測技 術指南(第三版)》所提供的 ORF1ab · N 基因區域,設計了引物探針,並推出了新型 冠肺炎病毒核酸检测试测念(雙重態光探針 PCR法)。

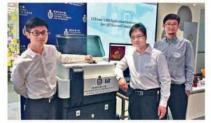
新型冠狀病毒 PCR 核酸快速篩查應急系 統,提供新型冠狀病毒檢測整體的解決方案 包括了病毒核酸快速提取試劑、新型冠狀系 毒检測試劑、微流芯片便攜快速 PCR 儀・以 及配套的微流控芯片和全自動化核酸提取設 備。

檢測儀採用先進的微流控分子檢測技 ·最快可36分鐘內檢測樣本中的新型冠狀 病毒核酸·並採用便攤式手提箱保護殼設計 內置可充電鍵電池·適合戶外检测。ff



# 科大研發LBS顯微鏡 拍攝細胞快千倍

微鏡,成像速度快現有的共聚焦顯微鏡一千倍 , 每秋 可拍攝五百張影像,只需半秒便可拍出



隊研發新一代顯微鏡,圖為團隊成員諧騰 魏綺婷攝 (右却 

一千分之 一,減低對細胞傷害,令細胞壽命可延長至數天,加 上成像速度快一千倍,有利中途注入藥物測試,觀察 細胞反應,助檢測藥物成效,並解開某些疾病的成因 與演變。

#### 掃描細胞減傷害

科技大學物理學系和化學及生物工程學系教授杜 膝望 丽璇 微鏡。現有 焦顯微鏡亦可拍攝立體生物細胞圖 射細胞樣本,團隊成員之一的調 十生 請 腌 稱, 下的陽光端 易較通 3D影像拍攝 ,便會被殺死,不利細胞生物學研究。 的新顕微鏡、關鍵在於以超薄貝塞爾光

片(LBS),取代強激光,前者光片厚度僅 當掃描細胞時,可減低對其傷害。由光引起、可導 致分子變化的光毒性,LBS僅是共聚焦顯微鏡的千分 之一。諸騰形容,共聚焦顯微鏡以激光照射於細胞 每 如以針不斷穿刺水果,但LBS光片掃描 细胞,就如將水果切片,每掃一次就可以檢視細胞

, 亦較共聚焦顯微鏡快一千 倍,每秒可拍攝五百張影像,半秒便可 究人員研究蛋白質 里。請騰又稱,可注入藥物,測試細胞對藥物的反應 光原創新科技有限公司, 盼. 品化,該公司於科大百萬元創業 大學、藥廠對產品有與趣,未來希望吸引買家購買

伯

記者 魏綺婷



科大首位女副校長葉玉如助女學者平衡家庭工作

★大学指示士的行用某工行用目前成为法律保健性系、目的成为分析社会的科学者

9.11 大桥高层会会用 5、形合は豆腐过度。 高数女性領袖本州 町在大田川時限城 · 州 主先要推正网络副家。 科技大學首位女術校長業工刻、攻击算是一個 "武教: · 徐中康阳初到北市原油北南超 · 徐永 **带注神理士物带领链接接:最终成為世界地名的** 料理家,不确例土壤果、含和压身的物,保存表 有田性刻面受到路限、你体口建造与协会女性者 要把公平的要取编说·批出「科学会要大性」· 和此地址力世利大推行多瑛政策·為女性學者質 届、兰宾语大、中大兴女职任期节的编研讨查。 助女教授使周期遵知力。

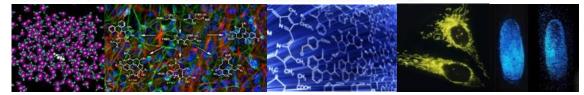
ALCONTRACTORS AND A CONTRACTORS AND A CONTRACTOR 「升柴」做後期 教書任務成群

ant - now manufaction unit - another an 副头发:他們自主派:南非正疗了一年工作用副胞門: 力和加加工作希望成別工作的關係:能力加加科人主要用 HORE MAY N. - THE SHEEK WITH HOLE MENT - HILLS 新一個學習的行為這個的方計標·1 此外一般去好生出成2 1.5003.0 · 818月以北南州310 · 1-215年8月1日

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首都持女教授 多元才有火花 为于动业元化,两大照顾水风学乐,直是水明混出性我 11. 「神道的此い心察者用、此为有方力加多不可能力不可 - 收支收投,申請人應有面少量生也,以利果系有助請例合当 转支的很人應,可以比非可能加強的書類作用。 作業上・利力法や初建党権・原憲主党1や別34年・KR 大学点生活動相応発展するコンパ目255、原規時点作品の 让纳勒社的工作和外侨专机,也用法利用生动。24.5年生 输出转载,加税也的政治利用。

是三加年位「於年夏堂女性」。於他推測:「這三是法定 特型以前时代展示也这些下「一面並行时一個開始產一定是 事文化。」加加加,並又此加重用,才可令人當不可許能到 形活圈子,此1回大学组织间和女性加厚力接张,决定的) 图型在标准用一次间注意,激品的合并都正式的时间用 帮我了最佳主新统计学规模,当就当年於中大保行,生生物 相可调整建设出大和科人联展。



**HKUST Researchers Discover the Genetic** Contributions to Alzheimer's Disease in the **Chinese Population Offering Important Clues** to the Development of Effective Diagnosis and Treatments



#### 科大研究團隊發現中國人群阿爾茲海默症相關的遺傳風險因子 為疾病診斷和治療提供重要基礎

28-03-2018

香港科技大學(科大)的研究團隊發現中國人群阿爾茲海默症相關的遺傳風險因子。

研究小組由科大副校長(研發及研究生教育)、分子神經科學國家重點實驗室主任暨晨興生命科學教授葉玉如 帶領,合作夥伴包括倫敦大學學院的John Hardy教授和莫健英博士、北卡羅萊納大學的李蕴教授、中國科學 院深圳先進技術研究院及香港科大深圳研究院的陳宇教授、以及復旦大學華山醫院的郭啟浩教授

阿爾茲海默症是一種隨著年齡增長而逐漸惡化的神經退化性疾病,是最常見和最為人知的認知障礙症,也是 導致老年人死亡的主要原因之一。患者腦部出現澱粉樣蛋白斑、神經纖維纏結及神經炎症等徵狀,導致認知 减退和腦神經元死亡。隨著全球人口老齡化的加劇,阿爾茲海默症的發病率亦隨之急升,但致病原因尚未能 明確,其診斷和治療面臨著巨大挑戰。

诵過尋找疾病相關的遺傳風險因子來瞭解遺傳因素在病變中的作用,是解析阿爾茨海默症病因的重要涂徑。 由於遺傳風險因素可能會因不同族群而有所差異,因此針對不同族群的遺傳研究至關重要。然而至今有關研 究仍主要是在高加索人群中開展,其他族群的數據相對缺乏。葉教授的此項研究率先在中國人群中探索了與 阿爾茲海默症相關聯的風險遺傳因素。



研究團隊成員(左起): 中國科學院深圳 先進技術研究院陳宇教授、科大生命科 學部研究助理教授傳潔瑜、科大副校長 (研發及研究生教育)葉玉如教授、博士 生周曉璞及倫敦大學學院莫健英博士。

Al-Personalized Medicine: Directing a Complex System to Desired Fate

HO Chih-Ming



New Routes to the Formation of Complex Structures and Metastable Materials

Thomas KUECH University of Wisconsin-Madison

Recent Developments of InGaN/GaN Based Laser Diodes for Energy Efficient Solid State Lighting and Displays Steven DENBAARS

Genomics in Neurodegenerative Disease

John HARDY University College London Biological and Environmental Evolution during the Deeptime Critical Olimate Transitions SHEN Shuzhong

Blood Factors as Regulators of Brain Function Tony WYSS-CORAY

Neural Engineering and Rehabilitation

June 3-4, 2019

Statistical Machine Learning for Financial Prediction and Inference

FAN Jian-Qing

Inverse Problems, Imaging and Partial Differential Equations



### Some faculty



Prof. Gunther Uhlmann IAS SiYuan Professor, Chair Professor of Mathematics 2011 Bocher Memorial Prize

#### Prof. Ching W. Tang 鄧青雲

IAS Bank of East Asia Professor, Chair Professor of Department of Electronic and Computer Engineering, Department of Chemistry, Department of Physics

- Father of OLED
- 2011 Wolf Prize in Chemistry
- 2014 Nick Holonyak Jr. Award





Prof. George Smoot IAS TT & WF Chao Foundation Professor, Chair Professor of Physics 2006 Nobel Prize in Physics

# Admissions Requirements and Admissions Score (SSCI-A/SSCI-B/IRE)

### The University general admissions requirement:

- i. 4C + 2X (four core subjects plus two electives), or
- ii. 4C + M1/M2 + 1X (four core subjects with M1/M2 plus one elective)

Minimum Level Requirement IRE (JS5101) SSCI-A (JS5102) SSCI-B (JS5103)	Minimum Level Requirement
English Language	3
Chinese Language	3
Mathematics (Compulsory Part)	2
Liberal Studies	2
<b>Elective 1 (Science Elective)</b> Must be one of: Biology/ Chemistry/ Physics/ Combined Science/ M1/M2	3
Elective 2 Any one Category A subject OR M1/M2	3

### JUPAS score calculation for IRE (JS5101)

### **<u>Unweighted</u>** best 5 subjects which include:

Subject 1	English Language
Subject 2 Mathematics (Compulsory Part)	
Subject 3 & 4	<b>Best Two Science Electives</b> Must be two subjects from: Biology/ Chemistry/ Physics/ Combined Science/ M1/M2
Subject 5	<b>Next Best One Subject</b> Can be core, M1/M2 or any Category A subjects

# **Admissions Scores 2020**

				English	Chinese	Math (Comp)	Liberal Studies	Elective 1	Elective 2	Elective 3	M1/Ms	Weighted Score <sup>#</sup>	Highest Attainable Weighted Score
	~	JS5102 Science (Group A)	Median	3	3	5	4	3	4	-	4	27.5	
			Lower Quartile	4	4	4	4	3	4	-	3	26	52.5
t J		JS5103 Science (Group B)	Median	4	4	4	4	4	4	4	-	30	53.5
Best	1		Lower Quartile	3	4	4	3	4	4	-	-	28.5	52.5
		JS5101 International Research Enrichment (IRE)	Median	5	4	5*	5*	5**	5*	5*	5*	30	
L	L		Lower Quartile	4	4	5**	3	5*	5	4	5**	29	35

Remarks: # For weighted score calculation, please refer to HKUST JUPAS Calculator <u>https://ioin.ust.hk/jupas-score</u>.

# **Scholarship Schemes**

### Scholarship Scheme for JUPAS – HKDSE

Students with any subject achieved Level 5\*\*

HKDSE Requirements	Total Award Level				
6 subjects or above with 5**	Full tuition plus living allowance of \$55,000, renewable for normal duration of study				
5 subjects with 5**	Full tuition plus living allowance of \$55,000, renewable for normal duration of study				
4 subjects with 5**	Full tuition, one-off and HK\$40,000, one-off				
3 subjects with 5**	Half tuition, one-off and HK\$30,000, one-off				
2 subjects with 5**	HK\$30,000, one-off				
1 subject with 5**	HK\$15,000, one-off				

Students in SSCI program with the weighted DSE score achieved 31 or above

HKDSE Requirements	Exchange Scholarship
DSE score achieved 31 or above	HK\$10,000



# http://science.ust.hk

