

香港中文大學(深圳)
The Chinese University of Hong Kong, Shenzhen

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香港中文大學(深圳)

2020 年網絡傳媒春茗

每年春天，神仙湖畔都會有一場屬於媒體記者的“春茗邀約”。3月13日上午，香港中文大學(深圳)的學主管人員穿起隆重的唐裝，與來自全國的100余家媒體記者在“雲端”進行了一場特別的見面會——“香港中文大學(深圳)2020年網絡傳媒春茗活動”，向媒體及社會各界朋友匯報香港中文大學(深圳)在招生、就業、科研、國際交流、人才培養等多方面的最新進展情況。

出席此次網絡春茗活動的校領導包括香港中文大學(深圳)校長徐揚生教授、副校長羅智泉教授、副校長朱世平教授、副校長阮健驄先生、協理副校長李學金教授、協理副校長蔡小強教授、協理副校長顧陽教授、協理副校長朱寶亭教授以及各學院、各書院負責人。來自新華社、人民網、鳳凰衛視、南方日報、深圳特區報、深圳晚報、深圳衛視、齊魯晚報、中國教育在線、騰訊教育和今日頭條等100余家全國媒體朋友通過雲端參加了本次活動。

徐揚生校長介紹大學辦學進展：

屬於港中大(深圳)的明天一定是曙光一片

港中大(深圳)校長徐揚生教授在線為大家介紹了大學最新的辦學進展。今年，香港中文大學(深圳)的發展之路已走過六年，這六年里，大學一步一個腳印，不斷向前邁進，在優質教學、人才引進、科研創新、國際交流等諸多方面，給社會交出了一份滿意的答卷。

經過六年的發展，大學學科建設已逐步完善，截至目前，大學已有經管學院、理工學院、人文社科學院和生命與健康科學學院四個學院，醫學院正在籌建之中，開設17個本科專業和18個研究生專業。同時，按照國際一流標準進行規劃、設計、運營和管理的港中大(深圳)直屬附屬醫院深圳吉華醫院在2019年12月28日正式開工，大學音樂學院的籌辦工作也有條不紊地推進中。

今年新增數據科學與大數據技術、英語兩個本科專業。目前，與香港中文大學(深圳)開展交流與合作的世界知名大學已超過100所，遍布世界29個國家和地區，各類國際合作項目已有170多個。2019年，大學已經連續四年成為廣東省內院校中錄取分數最高的大學，在全國各省市自治區的生源質量持續提升。如今，大學已經培養了兩屆本科畢業生和四屆碩士畢業生，他們的就業和升學情況十分優秀。校長徐揚生教授說：“這一切都離不開深圳市政府的支持和深港兩地各界朋友的關心與幫助，新的一年，我們將繼續腳踏實地走好每一步，屬於港中大(深圳)的明天一定是曙光一片！”

分管學術的副校長羅智泉教授：

建好梧桐樹，引得鳳凰來

羅智泉教授介紹了大學師資與科研方面的進展，由於國際化的辦學理念、開放包容的科研環境與雄厚的科研實力，成為引得鳳凰來的梧桐樹，截至2019年底，香港中文大學(深圳)面向全球引進知名教師350余位，這些教師全部具有在國際一流高校執教或研究工作經驗，75%以上的教授年齡在40周歲以下，是一批具有國際視野、富有創新精神和教书育人熱忱的優秀教師。港中大(深圳)緊密圍繞國家戰略發

展需求，密切結合地方新興產業和未來產業發展方向，在人工智能與機器人、數據科學與大數據技術、通信技術與新型網絡、生物醫藥、生物信息、先進材料、電子器件、智能電網、金融物流等領域開展創新研究，積極承擔各級科研項目。

負責科研工作的港中大(深圳)協理副校長李學金教授說：“我們正在申報的23個科研項目中包含了針對肺炎的藥物研發、病毒的檢測以及病毒變異的檢測等，港中大(深圳)的科研優先服務於國家戰略需求，服務於粵港澳大灣區。”

港中大(深圳)生命與健康科學學院院長葉德全教授介紹，2019年10月，深港國際科技園開園啟動，香港中文大學(深圳)大灣區生物醫藥創新研發中心作為首批引進深港國際科技園的項目之一，將致力於生物醫藥創新研發與轉化並為大灣區科研院所、生物醫藥企業等機構提供國際一流的研發及轉化的平台服務。

分管就業和外事事務的副校長朱世平教授：

第二屆本科畢業生就業率高达98.18% 升學學生中64.1%的學生攻讀世界前五十的名校學位

分管就業和外事事務的副校長朱世平教授向記者介紹了大學就業的相關情況。他說，香港中文大學(深圳)第二屆本科畢業生不僅繼續保持高就業率，還進一步提升了就業和升學質量，世界名校的錄取率、國內外知名單位的聘用率穩步上升，畢業去向呈現四大特點：一是就業率高达98.18%，保持高位穩定，位於國內知名高校就業率前列；二是升學比例再創新高，75.73%的畢業生攻讀世界名校的碩/博學位。升學的畢業生中，64.10%的學生攻讀世界大學排名前五十名的世界名校的碩士/博士學位；三是就業質量名列前茅，選擇直接就業的畢業生的平均年薪高達14.13萬元，近九成的學生就職於北上廣深國內一線城市；四是首屆理工學院本科畢業生培養質量備受矚目，82.69%的畢業生攻讀世界名校的碩/博學位，13.02%的升學學生全獎直博攻讀世界名校的學位。

分管教育事務的協理副校長蔡小強教授：

學校採用新型的更大類的招生模式

為探索中國高等教育创新型人才的選拔模式，香港中文大學(深圳)2020年開始實行新型的更大類的招生模式。以往大類招生按照學院大類報志願，第一年結束時在所在學院內選專業。如今學生按照文理科或選考科目報試驗班志願。入學後，入讀理科試驗班的學生在深入了解各學院各專業的基礎上，根據自己的興趣，在兩週內選擇學院(理科含金融工程專業)，然後，修讀完學院一年級的學院課程，大一結束時在所在學院內再選擇最適合自己的專業。入學後，入讀經濟管理試驗班或人文科學試驗班的學生，在深入了解各學院各專業的基礎上，根據自己的興趣，在兩週內選擇學院，然後，修讀完學院一年級的學院課程，大一結束時在所在學院內再選擇最適合自己的專業。這樣的大類招生模式，提供了考生按自己的意願選擇學院和專業的機會，而不再受具體專業的招生名額的限制。

另外，新型的大類招生模式還有大類覆蓋更全面、選考科目更科學等特點。

多元化的人才選拔模式將為粵港澳大灣區建設提供了源源不斷的智慧支撐和後備人才力量。在粵港澳大灣區蓬勃發展的契機下，香港中文大學(深圳)將通過國際化大學的教學平台，引進優秀的教育資源，培養國際化的高端人才，使大學的發展始終與地區和國家的發展同脈搏、共奮進，用自己的力量參與和見證大灣區的繁榮發展。

文/杜美雲

CUHK-Shenzhen Holds Spring Reception for Media Online Amid COVID-2019

By means of a video conferencing software—Zoom, the annual Spring Reception for Media of The Chinese University of Hong Kong, Shenzhen, was held online in the morning of March 13th. The "cloud" event attracted more than 100 journalists across the nation.

Dressed in Tang Suits, President Yangsheng Xu attended the event together with Vice President Shiping Zhu, Vice President K.C. Yuen and faculty deans. They shared with the media on the University's latest development projects. These include the release of four new majors at undergraduate level. Two of them, namely English and data science and big data technology, will start enrollment this year while the other two, clinical medicine and pharmacology, are expected to be ready next year with the construction of the School of Medicine.

Speaking at the reception, President Yang sheng Xu introduced the six-year development of the University with remarkable progress in discipline construction, talent recruiting, scientific research,

international exchange, etc. Four schools have been established so far, offering a dozens of highly ranked programs from undergraduate to graduate level. At the same time, the projects of building two new schools, the School of Medicine and the School of Music, have been underway. Jihua Hospital, an affiliated hospital of CUHK-Shenzhen, have also started its construction since December 2019.

Regarding the wide-spread COVID-2019, Tony Li, Associate Vice President cum Director of Research Administration, said that 23 research projects of CUHK-Shenzhen under application procedures are relative to drug development for pneumonia, virus detection, and virus mutation detection. It is expected that these projects will benefit the people's life and health in the Guangdong-Hong Kong-Macao Greater Bay Area and the whole country at large.

The Employment Report of Class of 2019 was another highlight of the event. According to Vice President Shiping Zhu, the graduates with

bachelor's degree in 2019 not only maintained a high employment rate, but also saw further advances in both employment and further studies, evidenced by the steady increase in the admission rate by prestigious universities in the world and the employment rate by well-known domestic and foreign enterprises. The employment rate grew to 98.18%, topping among domestic well-known universities. While the proportion of graduates pursuing further studies reached unprecedentedly high at 75.73%. Particularly, 64.10% of the students under this category were admitted to top 50 universities across the globe. The average annual salary of graduates who went straight into the job market achieved 141,300 yuan.

At the end of the online reception, all participants, including journalists and university officers, showed a "finger heart" at the same time on the screen, so as to convey their prayers and blessings to China and the world against the current COVID-19 epidemic.



牛津大学

六名本科生入选牛津大学交流生项目 Six CUHK-Shenzhen Students Admitted to Oxford's Visiting Student Programme

春和景明，万物生机。香港中文大学（深圳）合作院校牛津大学的佳音伴着盎然的春意如期而至。经过激烈的角逐与严格的选拔，港中大（深圳）6名本科生入选2020至2021学年牛津大学交流生项目。该项目今年录取25名来自中国内地高校的学生，港中大（深圳）入选学生人数与清华大学并列第一。这也是两校展开合作以来被该项目录取的第三批学生。入选的六名同学分别来自经管学院、理工学院和人文社科学院，将于2020至2021学年前往英国学习，享受牛津大学本科生同等权利。

牛津大学交流生项目由牛津全球发展与展望研究中心发起，并由牛津大学的七所学院从其15所中国内地合作院校中遴选15至25名本科生。该项目选拔标准极高，申请学生的GPA需达到3.7及以上（满分4.0），雅思成绩7.0或托福成绩110分以上，且能够通过自我陈述、论文及推荐信等文书材料展现突出的学术能力与英语水平。鉴于双方良好的合作关系，港中大（深圳）学生申请该项目时，无需提供托福或雅思等英语成绩。

自两校开展合作至今，共有11名港中大（深圳）优秀本科生得到牛津大学交流生项目的高度认可，收获了来自Mansfield、Worcester、Regent's Park和Pembroke四个学院的录取通知，录取学生专业背景涉及金融学、经济、金融工程、应用数学、统计科学、数据科学和翻译等多个学科领域。今年，港中大（深圳）被VSP录取的本科生皆是大二学生，其中有来自金融工程、应用数学、金融学和翻译等专业的学生。

Six CUHK-Shenzhen undergraduates were admitted to the Visiting Student Programme (VSP) offered by the University of Oxford for 2020/2021 Academic Year. As VSP enrolled 25 outstanding undergraduates from its partner universities in the Chinese mainland this year, CUHK-Shenzhen is tied with Tsinghua University for the highest number of students selected.

In 2020, VSP enrolled a total of 25 outstanding undergraduates from its Chinese partner universities, among which 6 are from CUHK-Shenzhen. The six students are from the School of Management and Economics, the School of Science and Engineering and the School of Humanities and Social Sciences. This is the third cohort of students admitted to the programme since the start of our university's partnership with Oxford, who will enjoy exactly the same teaching and the same facilities as Oxford's matriculated students during the academic year.

The Visiting Student Programme (VSP) is organized and administered by Oxford Prospects and Global Development Centre (OPGDC), University of Oxford. This year, the programme is open to 15 partner universities in China and admits 15 to 20 students nationwide. The programme is famous for its extremely high admission standard. An applicant must have a GPA of 3.7 or above (out of 4.0), a minimum IELTS score of 7.0 or a minimum TOEFL score of 110, and be able to demonstrate outstanding academic ability and English proficiency through personal statements, essays and letters of recommendation. In view of the successful partnership, Oxford agrees to waive the language requirement for our students.

Since the collaboration between the two universities, there have been a total of 11 outstanding undergraduate students from CUHK-Shenzhen who have received VSP offers from Mansfield, Worcester, Regent's Park and Pembroke, Oxford. Enrolled students' professional backgrounds have spanned a variety of disciplines including finance, economics, financial engineering, applied mathematics, statistical science, data science and translation. All the undergraduates admitted to VSP this year are sophomores majoring in financial engineering, applied mathematics, finance and translation.

学术交流处供稿

七名本科生入选耶鲁大学国际访问生项目 Seven CUHK-Shenzhen Undergraduate Students Selected for Yale Visiting Student Program

近日，耶鲁大学公布国际访问生项目录取结果，港中大（深圳）7名本科生入选，成为受益于该项目的首批学生。

港中大（深圳）于2019年11月与耶鲁大学签署协议，成为耶鲁大学遴选拔尖本科生的合作高校之一，耶鲁大学也成为港中大（深圳）第100所合作伙伴。经双方商定，该项目于2020年春季启动报名和遴选工作，经过严格的考核和线上面试，最终来自经管学院的5名同学和理工学院的2名同学入围。目前，7名同学已陆续收到录取通知，将在今年秋季或者明年春季赴耶鲁大学开始一学期或一学年的学习和生活。

耶鲁大学国际访问生项目仅面向其全球八所合作高校遴选拔尖本科生，包括新加坡国立大学、耶鲁-新加坡国立大学学院、早稻田大学、香港中文大学（深圳）、香港大学等。除开学习期间，耶鲁大学将为每位国际访问生指定一名学术导师。国际访问生将和耶鲁全日制本科生拥有相同的选课权利，同堂上课。此外，国际访问生还将被随机分配到耶鲁14个书院中住宿，充分融入耶鲁大学校园文化，与耶鲁及来自世界各地的学生共同生活。根据两校协议，港中大（深圳）学生无需提供英语语言测试成绩，并可享受20%的学费减免。

根据耶鲁大学提供的数据，香港中文大学（深圳）本次入选人数仅次于耶鲁-新加坡国立大学学院。录取结果出炉后，耶鲁大学国际访问生项目负责人在致信港中大（深圳）学术交流处时表示：“虽然是第一次合作提名，港中大（深圳）便有如此数量的学生入选，让我非常惊喜。这将成为两校未来合作的良好开端，相信港中大（深圳）的同学能充分享受这次难忘的学习经历”。



耶鲁大学

Recently, Yale University announced the admissions results of its Visiting International Student Program (Y-VISP), featuring seven undergraduate students from the first collaborative nomination of CUHK-Shenzhen.

With the signing of an agreement between CUHK-Shenzhen and Yale University in November 2019, CUHK-Shenzhen became one of Yale's partner colleges for the selection of top undergraduate students, and Yale became CUHK-Shenzhen's 100th global partner. As agreed by both parties at the time, the Y-VISP nomination and selection process would be launched in the spring of 2020. In the end, five students from the School of Management and Economics (SME) and two students from the School of Science and Engineering, CUHK-Shenzhen were shortlisted after a rigorous assessment and online interviews, and

have received offers to join the Yale undergraduate community this fall or next spring for either a semester or a full academic year.

The Yale Visiting International Student Program (Y-VISP) is an exchange program at Yale which invites top undergraduate students from selected partner institutions to study abroad at Yale, including the National University of Singapore, Yale-NUS College, Waseda University, The Chinese University of Hong Kong, Shenzhen and The University of Hong Kong. Students granted admission to Y-VISP will be entitled to enroll in Yale undergraduate courses, live alongside Yale students in one of fourteen residential colleges, and receive support and assistance from a designated academic adviser. This is a great opportunity for students from all over the world to become fully integrated members of the Yale community. Under the agreement

between the two universities, CUHK-Shenzhen students are not required to provide English language test scores and are entitled to a 20% tuition fee waiver.

Data from Yale University shows that CUHK-Shenzhen is second only to Yale-NUS College in terms of the number of admissions. In a letter to the Office of Academic Links, CUHK-Shenzhen after the results were released, the head of Yale's Visiting International Student Program said, "I was pleasantly surprised by the number of students selected from CUHK-Shenzhen, even though it was the first time we had collaborated on nominations. This will be a good start to the future cooperation between the two universities and I believe that students of CUHK-Shenzhen will enjoy this unforgettable learning experience to the fullest."

学术交流处供稿



香港中文大学(深圳)2020年 新增 两个本科专业

日前，教育部公布了2019年度普通高等学校本科专业备案和审批结果，香港中文大学(深圳)申请的英语专业、数据科学与大数据技术专业、临床医学专业、药学专业通过审批。英语专业、数据科学与大数据技术专业将于2020年开始招生。临床医学专业及药学专业将和正在建设的香港中文大学(深圳)医学院统筹规划，最早将于2021年启动本科招生。

2020年香港中文大学(深圳)的本科招生专业将有17个，分别是经管学院的金融学、市场营销、国际商务、经济学、会计学，理工学院的计算机科学与技术、电子信息工程、新能源科学与工程、统计学、数学与应用数学、数据科学与大数据技术，人文社科学院的翻译专业、应用心理学、英语专业，生命与健康科学学院的生物信息学、生物医学工程，以及经管学院与理工学院联合招生的金融工程。

新增本科专业除了延续了香港中文大学(深圳)一贯秉承的专业设置国际化、课程设置前沿化、教学内容实用化外，还适应了粤港澳大湾区乃至国家经济社会的发展需要。

人文社科学院的英语专业不是传统英语专业的重复，而是有一定创新性且具有跨学科特点的新尝试。该专业除了培养学生扎实的英语基础之外，还提供国际企业文传、法律事务、以及语言技术三个方向供学生选择，同时该专业的设计采用了具有跨学科、跨专业特点的“英语+X”的模式，旨在将语言及沟通能力的培养与专业方向的培养结合起来，培养具有国际视野和跨文化沟通能力的复合型、复合型的外语人才，并为有志于在大湾区或是境外从事专业语言服务的学生提供优质的教育。以香港中文大学(深圳)独特的办学理念，其结合中西文化的办学实践、以及粤港澳大湾区的发展前景，将吸引来自全国乃至世界各地的优秀学者加盟香港中文大学(深圳)，以增强此英语本科专业的实力。毕业生将在教育机构、跨国企业、政府外事部门、新闻出版行业、涉外金融机构等行业有着广泛的职业选择，同时，粤港澳大湾区的发展对本专业的人才需求也将为毕业生们提供良好的就业发展平台。

理工学院的数据科学与大数据技术专业旨在培养学术成绩优异且有实践能力的数据科学相关领域的人才。专业所涉及的领域包括：运筹学、统计学、机器学习、运营管理和决策科学等研究领域及相关交叉领域。教授队伍由海内外知名学者组成，所有教授均拥有世界一流学府的博士学位，在学术界和工业界的相关领域具有显著的国际影响力。他们不仅研究成果斐然、屡获国际奖项，而且教学经验丰富，培养出了许多优秀的年轻才俊。香港中文大学(深圳)与许多国内外知名企业开展了研究合作，包括IBM、京东、顺丰、腾讯等，为学生提供了非常好的研究与实践平台，也为深圳市在信息科技科技创新和教学科研做出巨大贡献。数据科学与大数据技术专业将培养学生毕业后前往国际一流大学或者机构进行研究生学习或研究，或加入一流企事业单位从事数据相关的工作。

CUHK-Shenzhen Launches Two New Undergraduate Programs in 2020

The Ministry of Education has approved the Chinese University of Hong Kong, Shenzhen (CUHK-Shenzhen) to offer four new undergraduate majors. Two of them, namely English and data science and big data technology, will be available for enrollment this year while the other two, clinical medicine and pharmacology, are expected to be ready next year with the construction of the School of Medicine.

Hence in 2020, a total of 17 undergraduate programs are open for application. These programs are offered by four schools, which are the School of Management and Economics (SME), the School of Science and Engineering (SSE), the School of Humanities and Social Sciences (HSS), the School of Life and Health Sciences (LHS).

The newly launched programs are following international standards in curriculum design and teaching pedagogy, with an aim to fuse traditional approach of knowledge acquisition with the technical skills of the contemporary world. Students will be able to convert their educational experience into applied and practical experience in society.

The English program launched by HSS is an innovative attempt of interdisciplinarity. It is operated in an "English+X" model. With the cultivation of English language ability being one core value, three directions are also provided for students to choose from: international corporate culture communication, legal affairs, and language technology. It aims to cultivate application-oriented versatile foreign language talents with an international perspective

and intercultural communication skills.

Data Science and Big Data Technology offered by SSE seeks to cultivate data science talents who excel in both academic and practical performance. The program covers a wide range of fields relative to big data, including operations research, statistics, machine learning, operations management, and decision science, and related areas. The faculty team is composed of well-known scholars at home and abroad, with rich teaching and research experiences. On the other hand, CUHK-Shenzhen has carried out research cooperation with many well-known enterprises in the relative fields, including IBM, JD.com, SF Express, Tencent, etc. The excellent research and practice platform will help students to gain valuable research experience and create links with industry.

经管学院本科生卫冕欧莱雅校园市场策划大赛中国赛区冠军



4月28日，欧莱雅校园市场策划大赛(L'Oréal Brandstorm 2020)全国四强总决赛落下帷幕。香港中文大学(深圳)经管学院学生组成的Vikileann战队在欧莱雅校园市场策划大赛全国总决赛中拔得头筹，将代表中国内地高校队伍角逐全球赛。这是我校同学继2017年、2018年夺冠后，再次卫冕欧莱雅校园市场策划大赛中国赛区总冠军。在今年中国赛区十强队伍中，香港中文大学(深圳)的参赛队伍就有三支，其中两支队伍名列前四。

我校戚逸文、吴蔚和叶奇同学组成的Vikileann队伍，陈睿、王佑悠和叶云淇同学组成的teCHange队伍和来自上海交通大学和上海纽约大学的两支队伍展开激烈角逐。最终，Vikileann队伍夺得2020年欧莱雅校园市场策划大赛中国赛区冠军。Vikileann队伍将与亚军上海交通大学A Bowl of Congee队伍代表中国内地高校队伍参加全球赛。此外，由陈宇晗、黄羽轩和邱子婧同学组成的In'oreal队伍进入2020年欧莱雅校园市场策划大赛中国赛区十强。

本次大赛以“创建‘无塑’的未来美妆行业”为主题，呼吁美妆行业的环保意识与可持续发展，吸引了来自北京大学、中国人民大学、上海交通大学、武汉大学、中山大学、华东理工大学、上海纽约大学和香港中文大学(深圳)等众多高校的参赛队伍。

赛事介绍

欧莱雅集团于1992年发起并主办的“欧莱雅校园市场策划大赛”，是全球最著名的大学生间的一项国际性营销和品牌管理赛事。参赛者将被分为3人一组，在比赛中为一个具体的品牌做出最具创意和可执行性的营销方案。BRANDSTORM作为欧莱雅公司组织的国际创新大赛，是欧莱雅国际人力资源交流战略的一部分，它旨在提高大学生的创业技能、创新能力、以及增进其对欧莱雅业务的了解。

CUHK-Shenzhen Undergraduates Defend 2020 L'Oreal Brandstorm (China) Championship

On April 28th, the Vikileann team of students from the School of Management and Economics (SME), The Chinese University of Hong Kong, Shenzhen won the national finals of the L'Oréal Brandstorm 2020, qualifying to compete on behalf of Chinese mainland universities in the coming World Finals. This is the third time that the University's students defended the national championship after being crowned champions in 2017 and 2018. At this year's Brandstorm, a total of three CUHK-Shenzhen teams made it to the top 10 teams in China, with two in the top four.

In the 2020 China Division Finals, the Vikileann team of Qi Yiwen, Wu Wei and Ye Qi, and the teCHange team of Chen Rui, Wang Youyou and Ye Yunqi put up a fierce fight against two teams from Shanghai Jiao Tong University and NYU Shanghai. Eventually, Vikileann captured the 2020 championship and will join runner-

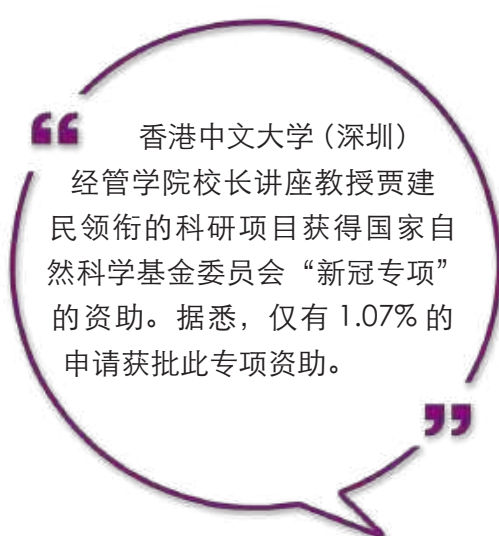
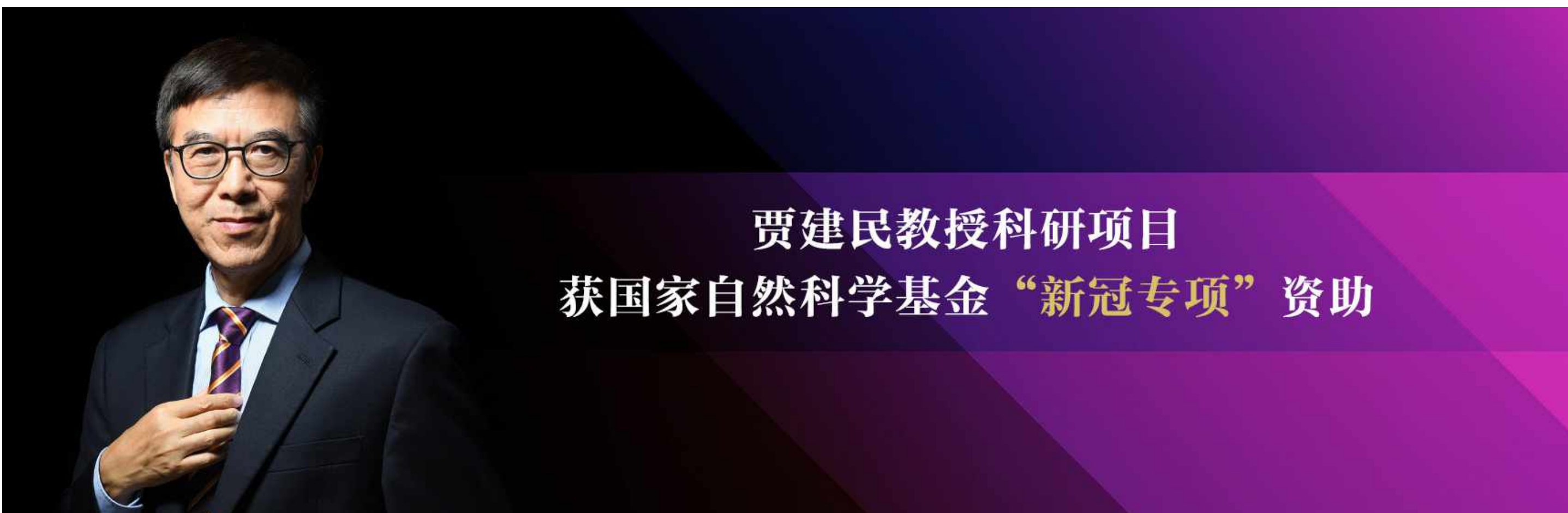
up Shanghai Jiao Tong University's A Bowl of Congee team to represent the Chinese mainland universities in the global finals. In addition, the In'oreal team consisting of Chen Yuhang, Huang Yuxuan and Qiu Zijiang also made it to the top ten in China.

With the theme of "Built a Plastic-less Future in the Beauty Industry", this year's competition featured many talented teams from Peking University, Renmin University of China, Shanghai Jiaotong University, Wuhan University, Sun Yat-sen University, East China University of Science and Technology, NYU Shanghai and The Chinese University of Hong Kong, Shenzhen.

L'Oréal Brandstorm, launched by L'Oréal, is the world's most prestigious international marketing and brand management competition among university students. Contestants will be divided into teams of 3 to come up with the most innovative and executable marketing plan for a specific brand during the competition.



冠军队伍



日前，賈建民教授主持申報的“基於大數據的新發重大傳染病監測、預警和應對”科研項目入選國家自然科學基金委員會“新冠肺炎疫情等公共衛生事件的應對、治理及影響”專項項目資助名單，獲批立項。委員會從1869份受理的申請中遴選20項擬資助項目，旨在推動開展公共衛生事件的應對、治理及影響等相關研究。

關於“新冠專項”項目

新冠肺炎疫情是一次重大突發公共衛生事件，對我國醫療衛生體系提出重大挑戰，也對我國經濟社會造成較大沖擊。國家自然科學基金委員會管理科學部圍繞重大突發公共衛生事件的疫情防控應對與管理、治理機制、經濟影響及對策、社會管理等四方面內容凝練科學問題，形成18個研究題目發布指南，旨在遴選支持具有相關領域數據、研究基礎並與疫情實際參與部門密切合作的科研人員開展研究，揭示實際問題背後的科學內涵和機理規律，提出科學可靠、指導實踐、落地生效的針對性理論與方法支撐和政策建議。在前期形式審查、學部初篩初選、學部主任（擴大）辦公會議、專家初評會等程序基礎上，專家評審組經過評閱選介和充分討論，通過投票從1869份受理的申請中遴選20項擬資助項目，資助直接經費1000萬，項目資助期限為1年。對於在執行期間成果突出且確有需要的項目，將嘗試擇優給予滾動連續資助。

通過利用以往研究基礎、相關領域數據並與疫情實際參與部門開展密切的科研合作，“新冠專項”項目將推動揭示實際問題背後的科學內涵和機理規律，產生創新性理論和指導實踐、落地生效的針對性方法支撐和政策建議；助力抗疫和推動經濟社會穩定發展。蓋茨基金會等國際組織也對該專項項目高度關注。

災害中的公眾風險認知與政府危機管理

賈建民教授主要从事决策分析、消费者选择与大数据营销的研究。2019年，因其在管理学领域做出的杰出贡献，賈建民教授獲得“复旦管理學傑出貢獻獎”。近年來，賈建民教授綜合運用大數據與實證調查相結合的研究方法，揭示了人們

的風險應對和溝通行為，構建了危機情景中的心理行為預測模型，對SARS、地震、霧霾等災害事件提出了政策建議。

2003年SARS的暴發使賈建民教授開始研究風險管理。通過對上海、北京、廣州、香港、成都5個城市的問卷調查研究顯示，人們對SARS的高風險意識和威脅感主要來自於SARS的各種不確定性和不可控制因素。為減少或消除人們的疑慮，政府和媒體可以加強對SARS傳播途徑及預防措施等信息的宣傳工作，並報道一些SARS病人康復情況以及相關醫學研究成果。每日公布SARS疫情雖然會給大眾造成危機感，但這是基於真實的心理感受，反而可以減少不確定性以及謠言的放大影響，能在更大程度上使政府贏得民眾的信任。在疫情資訊中，強化治愈率等正面數據的宣傳，以及先報道發現“疑似病例”而非直接報道“確診和死亡人數”更能降低SARS疫情對人們的心理沖擊。“針對這個調查結果，政府和媒體就可以採取相應的策略、政策，減少社會的風險感知和壓力，幫助人們正確評價SARS對人類的威脅性。”賈建民教授對SARS的調查研究還接受了人民日報的專訪。

牽頭專家團隊開展新冠疫情應對行為與春節幸福感調查

作為貫徹落實黨中央決策部署的重要體現，此次“新冠肺炎疫情等公共衛生事件的應對、治理及影響”專項的設立、論證和遴選過程十分嚴格，競爭極為激烈。今年春節期間，在國家自然科學基金委管理科學部的支持下，賈建民教授牽頭的專家團隊就開始密切關注民眾新冠疫情應對行為與春節幸福感。團隊共收集調查問卷20,288份，樣本來自全國346個城市，覆蓋不同的社會群體。研究成果得到了中國科學報等媒體的報道。

Prof. Jia Jianmin's Research Project Received COVID-19 Response Fund from National Natural Science Foundation of China

The project, led by Jia Jianmin, Presidential Chair Professor of the School of Management and Economics, The Chinese University of Hong Kong, Shenzhen, received COVID-19 Response Fund from the committee of the National Natural Science Foundation of China. According to reports, only 1.07% of applications have been approved.

In the early days, Prof. Jia's research project "The Investigation, Precaution and Response for Novel Infectious Diseases Based on the Big Data" was selected on the list of special funds for "Critical Preparedness, Readiness and Response Actions for COVID-19", and has been established. The committee will subsidize 20 projects out of 1,869 to promote related researches regarding to the response, the governance, and the impact of public health emergency.

The Introduction of COVID-19 Project

COVID-19 outbreak is an unprecedented public health emergency, posing an enormous challenge to the medical health system and a huge shock to the economy and society of China. Therefore, focused on four aspects, including the response and control, governance mechanism, economic impact and policy, and social governance of public health emergency, the National Natural Science Foundation of China proposed 18 research topics. It aims to support the researchers who are equipped with relevant data and research basis and keep close cooperation with departments in the fight against the pandemic to conduct researches. The research outcomes will be applied to reveal scientific evidence and mechanisms behind facts and propose targeted theories and feasible measures, effective policies and suggestions. Through the first round of review procedures, including the review at early stage, first round of sorting, office meeting and experts' review, experts jury chose 20 projects out of 1,869 in total by voting. The project fund is 10 million RMB Yuan with a one year duration. In addition, the projects that make remarkable breakthroughs during this one year may continuously receive funds.

Through the previous research, relevant data collection and the collaboration with the departments in the fight against the

pandemic, the COVID-19 project will contribute to finding out the scientific evidence and mechanisms behind facts and proposing targeted theories and feasible measures, and effective policies and suggestions. It aims to prevail over the pandemic and maintain the stability of economy and society. Great attention to this project had been aroused from international organizations, such as Gates Foundation.

Public Risk Perception and Government Crisis Management

Prof. Jia Jianmin's research areas include decision-making, consumer choice and big data marketing. In 2019, Prof. Jia won 2019 Fudan Prize for Eminent Contributions to Management Science.

In recent years, Professor Jia Jianmin used the research method which combining big data and empirical investigation to reveal people's risk response and communication behavior, constructing a psychological behavior prediction model in scenarios under crisis, and proposed policy recommendations to dealing with disaster such as SARS, earthquakes and haze.

As SARS outbreak spread worldwide in 2003, Prof. Jia began to study crisis management. His research questionnaires covering Shanghai, Beijing, Guangzhou, Hong Kong and Chengdu presented that the high-risk perception and perceived threat of people come from uncertainties and uncontrollable factors of SARS. To relieve people's concern, government and media need to inform public of how the SARS spreads and how to avoid the infection, and meanwhile report news about SARS patients' recovery and related medical research outcomes. The daily updates of SARS infected cases may make people panic, but this real feeling can reduce the negative impacts brought by uncertainties and erroneous reports and help the government win people's confidence to a large extent. The reports of recovery rates and suspected cases, instead of direct reports of confirmed cases and death toll, should be published to reduce people's psychological shock of SARS. In terms of this result, the government and media can make corresponding strategies and

policies to reduce the perceived threat and pressure of the society and help people understand the danger of SARS, Prof. Jia said in an interview of The People's Daily.

Prof. Jia Jianmin Led Expert Team to Study the Relationship Between Response to Coronavirus Outbreak and Sense of Happiness During Chinese New Year

In order to fully implement the decisions of the central government, the establishment, demonstration and election of the project of Critical Preparedness, Readiness and Response Actions for COVID-19 follows a strict standard, and its competition is intensely fierce. Under the support of the Department of Management Sciences of the National Natural Science Foundation of China. Prof. Jia Jianmin led an expert team to study the relationship between the response to coronavirus outbreak and the sense of happiness during the Chinese New Year. Based on 20,288 questionnaires, samples from 346 cities in China were used in the report, covering various social groups. The research outcomes have been reported by many major media, such as China Science Daily.



賈建民教授在《自然》发表“新冠”研究论文由人口流动预测疫情发展

国际顶级期刊《自然》(Nature) 伦敦时间 4 月 29 日在线发表香港中文大学(深圳) 经管学院院长讲座教授賈建民作为通讯作者的研究论文《人口流动驱动新冠肺炎疫情在全国的时空分布》(Population Flow Drives Spatio-Temporal Distribution of COVID-19 in China)。该研究构建了“人口流动-风险源模型”，便于决策者在抗击新冠疫情时根据人口流动更有效地评估风险并分配有限的资源。

该方法与现有的流行病学模型的不同之处在于，它利用了有关人口流动的实际数据，例如可从移动电话数据或其他大数据来源，量化人的流动。仅凭人口流动就可以非常准确地预测新冠疫情暴发的时间，强度和地理分布。此外，通过实时跟踪人口流动，模型可以为决策者和流行病学家提供强大的工具，以尽早防控疫情并挽救生命。

在开发该模型时，研究团队使用全国范围内的手机地理位置数据跟踪了 2020 年 1 月 1 日至 1 月 24 日之间从武汉或者经过武汉市流出的约 1150 万人次。春运期间人口流动密集，人们通过武汉迁移至全国 31 个省和地区的 296 个地级市。研究人员将移动运营商提供的人口流量数据与各地新冠肺炎感染数按地市级为单位，在时间和地点上建立了关联，发现离开武汉的人群分布随着时间的推移越来越准确地预测了全国各地新冠疫情发展情况。他们建立了一个“人口流动-风险源模型”，该模型除了准确预测各地确诊病例还能监测疫情暴发初期有高危传播率风险的地区。

“我们利用运营商掌握的海量手机用户位移数据，基于在疫情暴发前武汉输入到全国各地的人口流动数据，构建了‘人口流动-风险源模型’，来检测人们的流动性特征可以在多大程度上捕获传染病的时空传播规律。”賈建民教授介绍说，与大多数流行病学预测模型不同的是，这一模型是基于实际的人口流动来预测疫情的地域分布和传播趋势。对于新冠肺炎疫情，模型至少提前一周预测了全国范围内感染的病例情况和地理分布，因此这一方法可以用来监测和预警疫情的早期发展，其结果可用于预警各地的疫情风险大小，在疫情发展的早期为应急计划和相关决策提供依据。

研究人员通过把自武汉流入全国各地的人口数量分布作为各地疫情风险的相对基准。通过建立疫情发展的基准趋势风险模型(hazards model, 用以判断哪些地区的实际疫情显著偏离了它们应该的发展趋势(90%置信区间)，从而建立了疫情社区传播风险指数，用以监测各地疫情管控情况。有关部门的决策者可以利用这一风险指数在社区疫情暴发初期进行快速、准确的风险评估，以最大限度地控制疫情在社区的蔓延。他们的模型在疫情暴发的初期(1月29日)就预测到了温州存在较大的社区传播。

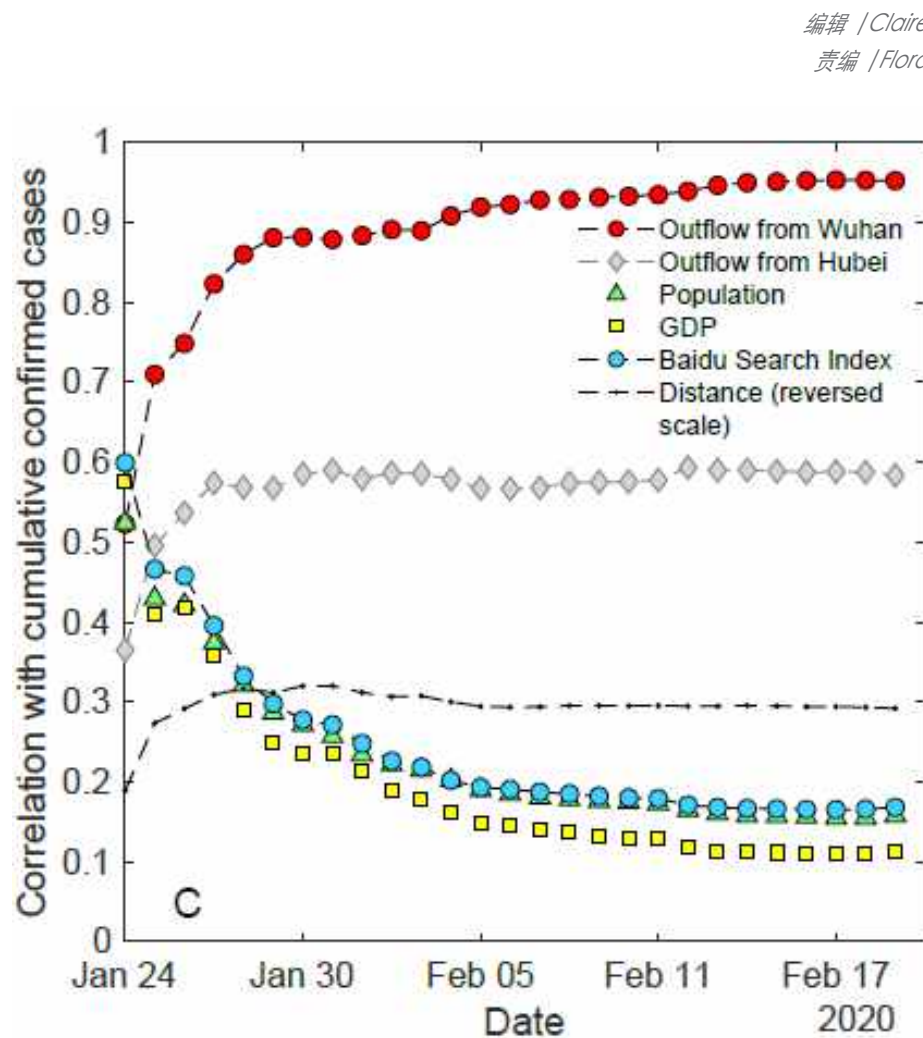
他们的研究显示武汉市及湖北省封城是非常正确的决策，及时截断了大量感染的疫情源，特别是武汉流入到湖北省内的人口数量是流入到全国其它地方的三倍。按照作者建立的多源风险模型评估，在武汉封城前湖北流出到全国各地的人口(数量是武汉流出的4倍)对这些地方后来的疫情发展没有显著影响，因此，武汉以外的湖北其它地区在封锁的时候还没有形成新的疫情源。另外，模型持续的高预测性来自于全国各地防控措施的有效性和协同一致，因此各地的疫情发展才会像模型预测

一样按武汉流出人口比例来分配，而绝大部分的感染机会只能发生在家庭传播(83%)。总体上，该项研究显示，武汉以外的全国疫情数据具有高度的时空规律，是严格防控措施下的疫情结果。

研究人员指出，此模型可以应用于任何能准确捕捉人们流动的数据集，例如火车票或汽车通行费等数据，这意味着各国的政策制定者可以利用该模型来为遏制病毒传播做出努力。本文作者之一、耶鲁大学网络科学研究所所长克里斯·塔基斯教授认为，“人口流动时会传播传染性疾病。通过准确地记录一段时间内的人口流动情况，我们可以预测传染病如何在地区间扩散，并在灾难性流行病暴发或再次暴发之前利用数据分析技术对其进行防控。”他在耶鲁大学的媒体报道中还强调，“这项研究采用完全独立的运营商人口流动数据完整的预测了中国(除武汉以外的地方)各地的确诊人数分布，这本身就清楚地揭示了疫情数据整体的真实性。”

据悉，賈建民教授领衔的科研团队春节以来已投入到国家自然科学基金委组织的有关新冠疫情政策研究中，在疫情暴发初期，利用人口流动数据，为各级政府部门提供了多个政策分析报告。

本文合著者包括：香港大学贾弼、国防科学技术大学吕欣、西南交通大学袁韵、湖南工商大学徐戈、耶鲁大学 Nicholas A. Christakis。賈建民为本文通讯作者。

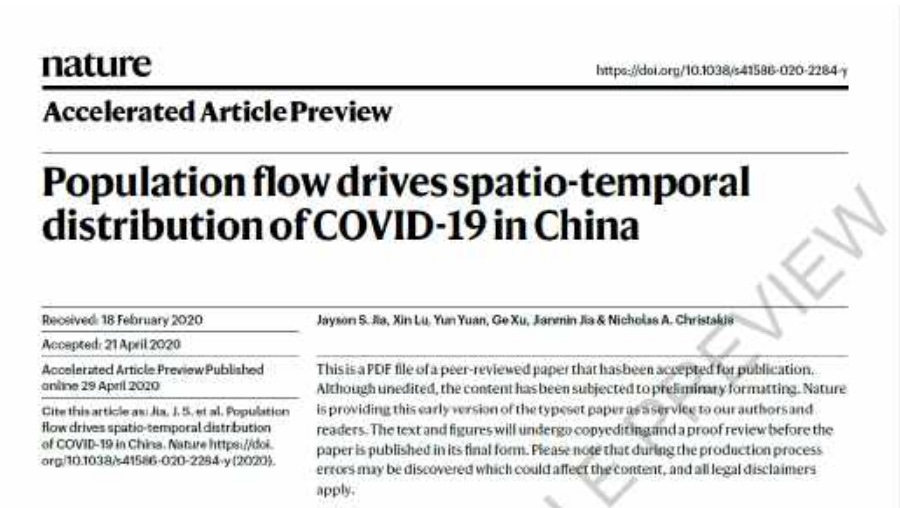


经管学院賈建民教授在《自然》发表“新冠”研究论文由人口流动预测疫情发展

CUHK-Shenzhen Prof. Jia Jianmin's Study Accurately Tracks COVID-19 Spread with Big Data

A research co-conducted by Prof. Jia Jianmin, The Chinese University of Hong Kong, Shenzhen (CUHK-Shenzhen), developed a new method to accurately track the spread of COVID-19 using population flow data. The study established a new risk assessment model to identify high-risk locales of COVID-19 at an early stage, which serves as a valuable toolkit to public health experts and policy makers in implementing infectious disease control during new outbreaks. The findings have been published in the journal *Nature* on April 29.

The researchers of this team used nation-wide data provided by a major national carrier in China to track population movement out of Wuhan between 1 January and 24 January 2020, a period covering the annual Chunyun mass migration before the Chinese Lunar New Year to a lockdown of the city to contain the virus. The movement of over 11 million people travelling through Wuhan to 296 prefectures in 31 provinces and regions in China were tracked.



Differing from usual epidemiological models that rely on historical data or assumptions, the team used real-time data about actual movements focusing on aggregate population flow rather than individual tracking. The data include any mobile phone user who had spent at least 2 hours in Wuhan during the study period. Locations were detected once users had their phones on. As only aggregate

data was used and no individual data was used, there was no threat to consumer privacy.

Combining the population flow data with the number and location of COVID-19 confirmed cases up to 19 February 2020 in China, the study showed that the relative quantity of human movement from the disease epicentre, in this case, Wuhan, directly predicted the relative frequency and geographic distribution of the number of COVID-19 cases across China. The researchers found that their model can explain 96% of the distribution and intensity of the spread of COVID-19 across China statistically.

The research team then used this empirical relationship to build a new risk detection toolkit. Leveraging on the population flow data, the researchers created an "expected growth pattern" based on the number of people arriving from the risk source, i.e. the disease epicentre. The team thereby developed a new risk model by contrasting expected growth of cases against the actual number of confirmed cases for each city in China, the difference being the "community transmission risk."

The approach is advantageous because it requires no assumptions or knowledge of how or why the virus spreads, is robust to data reporting inaccuracies, and only requires knowledge of relative distribution of human movement. It can be used by policy makers in any nation with available data to make rapid and accurate risk assessments and to plan allocation of limited resources ahead of ongoing disease outbreaks.

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Dr. Jayson Jia, Associate Professor of Marketing of HKU, is the lead

賈建民教授简介

賈建民教授现任香港中文大学(深圳) 校长讲座教授，曾任香港中文大学商学院市场学系教授兼系主任、西南交通大学经济管理学院院长。賈建民教授担任过国家自然科学基金委管理科学部专家咨询委员会委员、全国 MBA 教育指导委员会委员、美国营销科学学会学术董事以及美国《Operations Research》杂志副主编等。2019 年，因其在管理学领域做出的杰出贡献，賈建民教授荣获“复旦管理学杰出贡献奖”。

Prof. Jianmin Jia (Jamie) is an Adjunct Professor in Department of Marketing at The Chinese University of Hong Kong (CUHK) Business School and the presidential chair professor at CUHK-Shenzhen. He was a Professor and Chairman in Department of Marketing at CUHK, Chang Jiang Chair Professor appointed by the Ministry of Education, China, and Dean of School of Economics and Management, Southwest Jiaotong University, China. Prof. Jia received his PhD from the McCombs School of Business at the University of Texas at Austin in 1995. He was a visiting scholar at Carnegie Mellon University and Duke University for three years.

Prof. Jia was the prize winner of the 1994 Decision Analysis Student Paper Competition sponsored by the Decision Analysis Society of INFORMS (US), and his dissertation about "Measures of risk and risk-value theory" received Honorable Mention Award from the University of Texas at Austin. Prof. Jia serves as a member of the National MBA Education Supervisory Committee of China, and a member of the Expert Consultation Committee of the Management Sciences Department of the Natural Science Foundation of China.

His research and teaching interests include big data marketing, social networks, consumer choice, and decision making. He was an Associate Editor of Operations Research, Academic Trustee of Marketing Science Institute (US), and Vice Chairman of the Academic Committee of China Marketing Association. Prof. Jia published in Management Science, Marketing Science, Psychological Science, Journal of Consumer Research, Operations Research and other leading international and Chinese journals.

author of this study. The co-authors are Jianmin Jia, Presidential Chair Professor at the Chinese University of Hong Kong, Shenzhen (corresponding author); Nicholas A. Christakis, Sterling Professor of Social and Natural Science at Yale; Xin Lu, the National University of Defense Technology in Changsha, China, and the Karolinska Institutet in Stockholm, Sweden; Yun Yuan, Southwest Jiaotong University; Ge Xu, Hunan University of Technology and Business.

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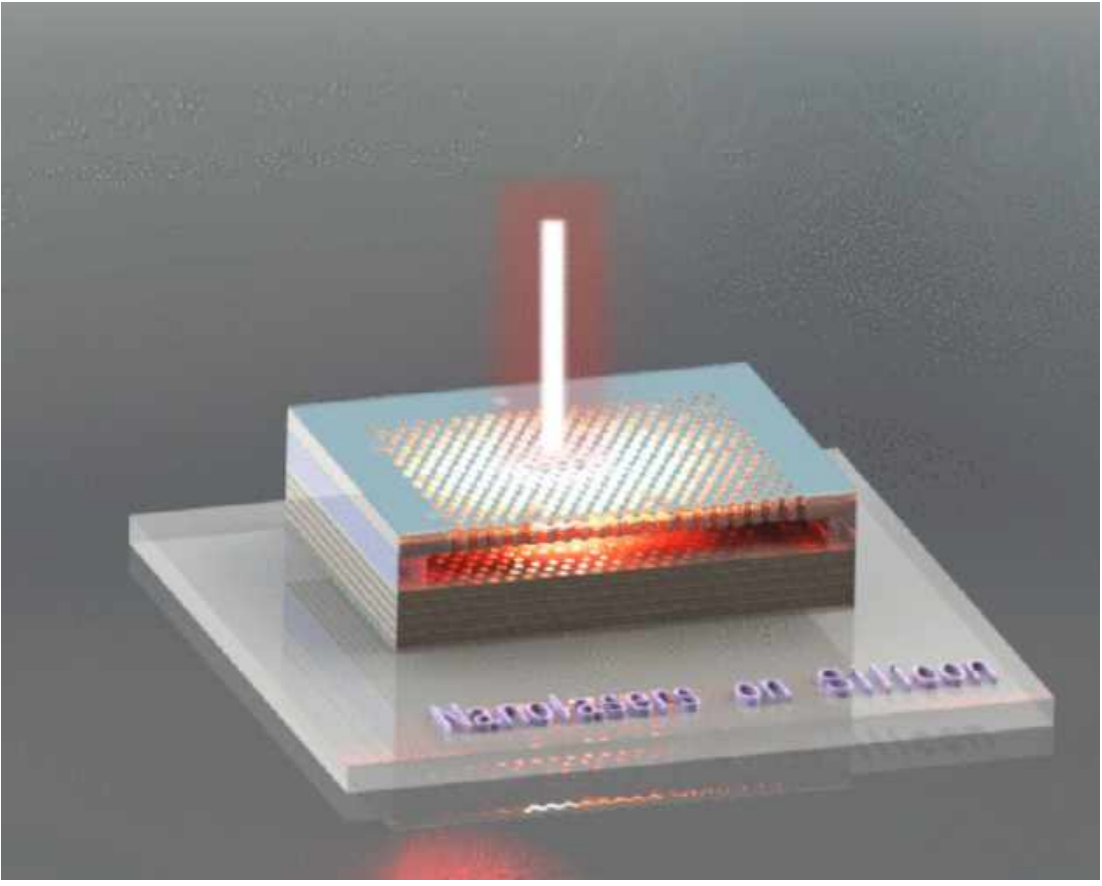


图 1. 硅基量子点光子晶体激光器示意图
 Figure 1. Schematic diagram of silicon-based quantum dots photonic crystal lasers chip.

近年来在光通信、光互连巨大需求的推动下，硅基光电子集成技术蓬勃发展。激光器是光芯片的核心部件，其调制速率、集成密度、功耗等直接决定硅光芯片的性能及发展。基于硅材料的光电元件，如硅波导、硅调制器、硅探测器等已比较成熟，但硅基激光器一直没有很大进展。究其原因，硅是间接带隙半导体，不适合作为激光器的发光材料。而诸如 GaN、GaAs、InP 等的传统三五族材料为直接带隙半导体，是目前最有效的半导体激光器发光材料。因此，近 20 年，国际上包括来自法国国家科学研究中心（CNRS）、美国英特尔（Intel）和加州大学圣巴巴拉分校（UCSB）、日本电报电话（NTT）、香港科技大学（HKUST）在内的多个科研团队投入大量的财力物力，尝试在硅上直接生长三五族材料，其目标是在硅基三五族上制成激光器并最终与 CMOS 工艺对接，实现光电子与微电子的大规模单片集成，从而大大提升光通信器件的功能，同时降低成本。以上各团队已分别实现了不同硅衬底上的大尺度激光器，但是在 CMOS 工艺兼容的（001）硅衬底上还未实现过微纳光子晶体激光器，而光子晶体结构被认为是未来光集成的一种重要组成结构。

香港中文大学（深圳）理工学院张昭宇教授课题组与合作团队通过设计硅基量子点光子晶体激光器外延结构，采用分子束外延方式在硅衬底上直接生长高质量的 InAs 量子点作为激光器增益介质（发光材料），依托深圳市半导体激光器重点实验室平台，成功制备了亚波长尺寸的超低阈值硅基光泵浦光子晶体激光器芯片。该激光器实现了室温连续光泵浦激射，并在 1310 nm 光通信波段实现单模输出（如图 2 所示），在实现光电子与微电子的大规模单片集成上向前推进一大步。

这是张昭宇教授课题组在硅基光芯片研究领域，继 2019 年首个室温连续光泵浦低阈值硅基盘形激光器后，取得的又一个重要研究成果。此成果第一作者是香港中文大学（深圳）理工学院 2016 级博士研究生周陶杰，University College London (UCL) 的唐明初博士为共同第一作者，香港中文大学（深圳）为第一作者单位，张昭宇教授、UCL 的刘会赞教授和陈思铭教授为共同通讯作者。来自法国 University Grenoble Alpes 的 Thierry Baron 教授也参与此工作。

Important Progress in Electronics and Photonics Integration Made by SSE Prof. Zhaoyu Zhang's Group

Recently, Prof. Zhaoyu Zhang's group, from the School of Science and Engineering, demonstrated optically pumped photonic crystal lasers monolithically grown on silicon for the first time, which is an important progress in the field of electronics and photonics integration. Relevant results with title "Continuous-wave quantum dot photonic crystal lasers grown on on-axis Si (001)" were published in Nature Communications.

In recent years, driven by the huge demand of optical communication and optical interconnection, silicon-based opto-electronic integration technology is developing vigorously. As one of most significant elements of silicon photonics. The modulation rate, integrated density and power consumption of lasers will directly limit the performance of silicon photonics. The silicon-based opto-electronic devices such as silicon waveguide, modulator and silicon detector have been well developed. However, owing to the fact that silicon is an indirect band gap semiconductor, which is not suitable for light-emitting devices. The III-V semiconductor materials (such as GaN, GaAs, InP, etc.) are direct band gap semiconductors, which are the most effective light-emitting materials for lasers. In the past 20 years, groups from CNRS in France, Intel and UCSB in the United States, NTT in Japan, and Hong Kong University of Science and Technology have put a great amount of effort in this field, to directly grow III-V materials on silicon. The goal is to integrate lasers on silicon with CMOS technology to achieve large-scale monolithic integration of silicon photonics, and finally to further improve the performance of optical communication devices with reduced cost. They have realized large-scale lasers on different silicon substrates, but have not yet demonstrated compact size nano lasers (photonic crystal lasers) on silicon substrates compatible with CMOS technology. In addition, the photonic crystal structure is considered to be an important element of future optical integration.

Prof. Zhaoyu Zhang's group from the School of Science and Engineering and their collaborators designed the epitaxial structure of silicon-based quantum dot photonic crystal lasers and molecular-beam epitaxy (MBE) was used to directly grow high-quality InAs quantum dots on silicon as the gain medium of the laser. Relying on the support from Shenzhen Key Lab of Semiconductor Lasers established in recent years, Prof. Zhaoyu Zhang's group fabricated and tested the sub-wavelength scale photonic crystal lasers for the first time. The laser chips operate at room temperature under continuous-wave optical pumping. Single-mode lasing emission at 1310 nm optical communication band was achieved as shown in Figure 2.

This is the another important research achievement made by Prof. Zhaoyu Zhang's group in the field of silicon photonics (relevant research results were published in Optica in 2019). The first author of this Nature Communications paper is Mr. Taojie Zhou, a PhD candidate from the School of Science and Engineering. Dr. Mingchu Tang from University College London (UCL) is the co-first author. The co-corresponding authors of this paper include Prof. Zhaoyu Zhang from CUHKSZ, Prof. Huiyun Liu and Prof. Siming Chen from the UCL. Prof. Thierry Baron from the University Grenoble Alpes in France also contributes to this work.

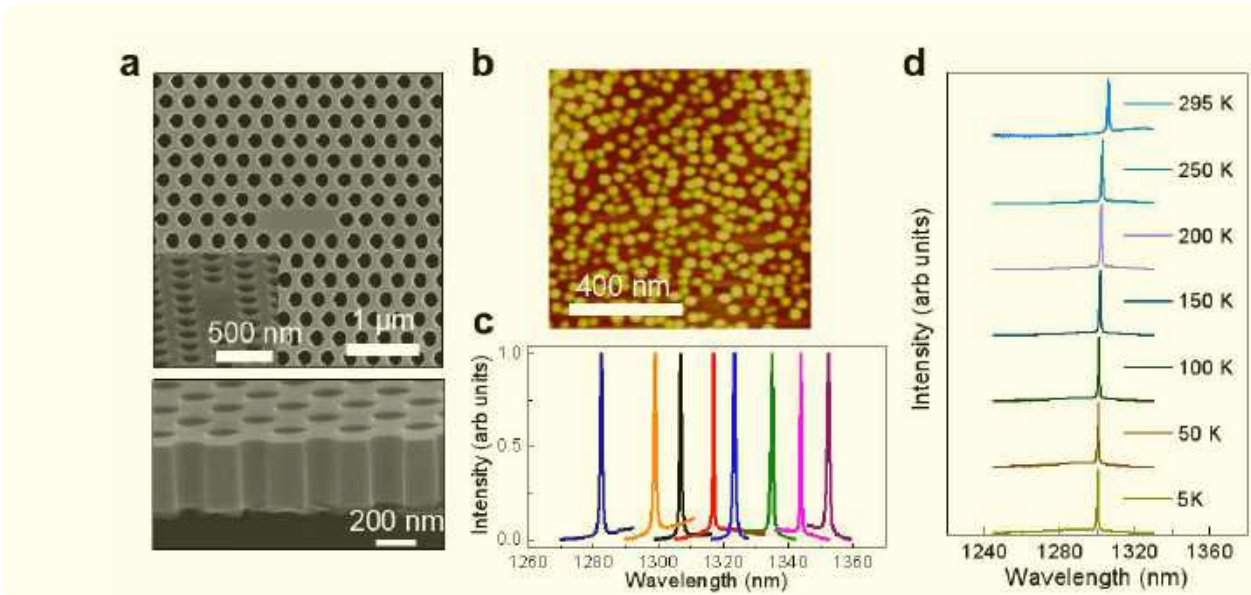


图 2. 硅基量子点激光器器件表征图
 Figure 2. The device characteristics.

理工学院张昭宇教授团队在硅基光芯片领域取得重要研究成果



周陶杰

第一作者介绍

周陶杰, 本科毕业于南开大学物理学院伯苓班, 现于香港中文大学(深圳)理工学院攻读博士学位, 在张昭宇教授课题组从事半导体微纳激光器研究。相关研究成果在 Nature communications、Optica、Optics Express、Applied Physics Letters、AIP Advances 等期刊均有发表。



张昭宇教授

张昭宇教授及课题组介绍

张昭宇教授, 2007 年获加州理工学院电子工程博士学位, 毕业后在加州大学伯克利分校化学系从事博士后研究, 同时受聘于劳伦斯伯克利国家实验室。2015 年, 他入职香港中文大学(深圳)成立纳米光电子实验室 "Nano OptoElectronics Lab (NOEL)"。2016 年, 张昭宇教授作为负责人获得深圳半导体激光器重点实验室项目支持并任实验室主任。他主要的工作成绩包括: 制成第一个红光光子晶体激光器、第一个尺寸小于一微米的激光器、第一个微流控染料激光器、第一个光泵浦可单片集成硅基光子晶体激光器等。在 Nature Communications, Advanced Materials, Physics Review Letters, Optica, Photonics research, Optics Letters, Applied Physics Letters 等国际刊物发表多篇文章。

纳米光电子实验室着眼于 5-10 年可产业化的应用基础研究, 培养未来产业的核心技术人才。课题组的科研方向主要为面向未来光通信和激光人脸识别的微纳激光器件及光电集成, 面向未来显示和照明的有机 / 无机光电器件及集成。课题组光电器件加工与测试分析等设备已初具规模, 包括电感耦合等离子体刻蚀机、蒸镀机、飞秒激光器、皮秒激光器、纳秒激光器、条纹相机、低温冷台、各波段光谱仪、半导体参数分析仪、积分球等。

First author: Mr. Taojie Zhou

Mr. Taojie Zhou received his bachelor degree in 2016 from Boling class, School of Physics, Nankai University. Then he joined Prof. Zhaoyu Zhang's group after graduation and is now engaged in the research of semiconductor micro- and nano-lasers. Some relevant research results are published in Nature communications, Optica, Optics Express, Applied Physics Letters, AIP Advanced, etc.

Prof. Zhaoyu Zhang

Prof. Zhaoyu Zhang received his Ph.D. degree from California Institute of Technology in 2007 in Electrical Engineering. From 2008 to 2011, he was a postdoctoral fellow in University of California, Berkeley, with a joint appointment at Lawrence Berkeley National Laboratory. From 2011 to 2015, he was an Associate Professor at Peking University and established a team of "Nano OptoElectronics Lab (NOEL)". In 2015, he and his team moved to The Chinese University of Hong Kong, Shenzhen. In 2016, he was appointed the director of Shenzhen Key Laboratory of Semiconductor Lasers. His main achievements include the first demonstration of red-emission photonic crystal lasers, subwavelength-scale micro-lasers with physical size smaller than 1 micron, microfluidic microlasers based on dye materials, as well as the first demonstration of photonic crystal lasers directly grown on silicon substrates. He has published more than 20 referred papers on renowned journals including Nature Communications, Advanced Materials, Physics Review Letters, Optica, Photonics research, Optics Letters, Applied Physics Letters, etc.

The research of Prof. Zhang's group (NOEL) focuses on applied nano-optics and nano-photonics. The technology is expected to be mature in 5-10 years, and the group's mission is to train technical talents in the future optics and photonics industry. Currently, the group is mainly working on: 1. Micro laser devices and optoelectronic integration for future optical communication and face recognition; 2. Organic optoelectronic devices and integration for future display and lighting. The group has the capability of device fabrication and measurement, including ICP-RIE, thermal evaporation system, a femto-second laser, pico-second lasers, nano-second lasers, a streak camera, a cryo-stage, spectrometers, semiconductor parameter analyzers, an integrating sphere, etc.

生命与健康科学学院胡红丽教授 在 Nature 发表 G 蛋白偶联受体结构的最新研究

近日，生命与健康科学学院胡红丽教授在国际著名期刊《自然》上发表了题为“Structure of the M2 muscarinic receptor – β -arrestin complex in a lipid nanodisc”的文章。在该文中，胡教授用人造纳米盘模拟细胞膜环境研究 GPCRs 与胞内信号分子阻遏蛋白相互作用，分析二者相互作用的关键结合位点，对相关疾病的新药开发提供指导。



胡红丽教授在 Nature 发表 G 蛋白偶联受体结构的最新研究

胡红丽教授发表的文章是与斯坦福大学的 Georgios Skiniotis 教授以及杜克大学 Robert J. Lefkowitz 教授合作的研究成果。Lefkowitz 教授因在 GPCRs 领域的突出贡献获得 2012 年诺贝尔化学奖。

研究成果介绍

G 蛋白偶联受体（GPCRs）是人类基因组编码的最大膜蛋白超家族，GPCRs 可识别细胞外的各种信号分子，如激素、神经递质、离子、光、气味分子等，随后发生构象变化与细胞内的信号蛋白分子相互作用，从而诱导各种细胞反应。

目前，人体中已发现的 GPCRs 有 800 多个，在几乎所有重要的生理活动中发挥不可或缺的作用，是心血管疾病、神经系统疾病、炎症、代谢性疾病、癌症等重大疾病的重要药物靶标。市场上的 34% 药物是靶向 GPCRs 发挥作用的，研究 GPCRs 对这些疾病的药物开发有非常重要的意义。

GPCR 家族成员非常多，而且在人体中发挥非常重要的作用。胡教授的团队利用冷冻电子显微镜技术研究 GPCRs 分子的结构，理解其信号传递

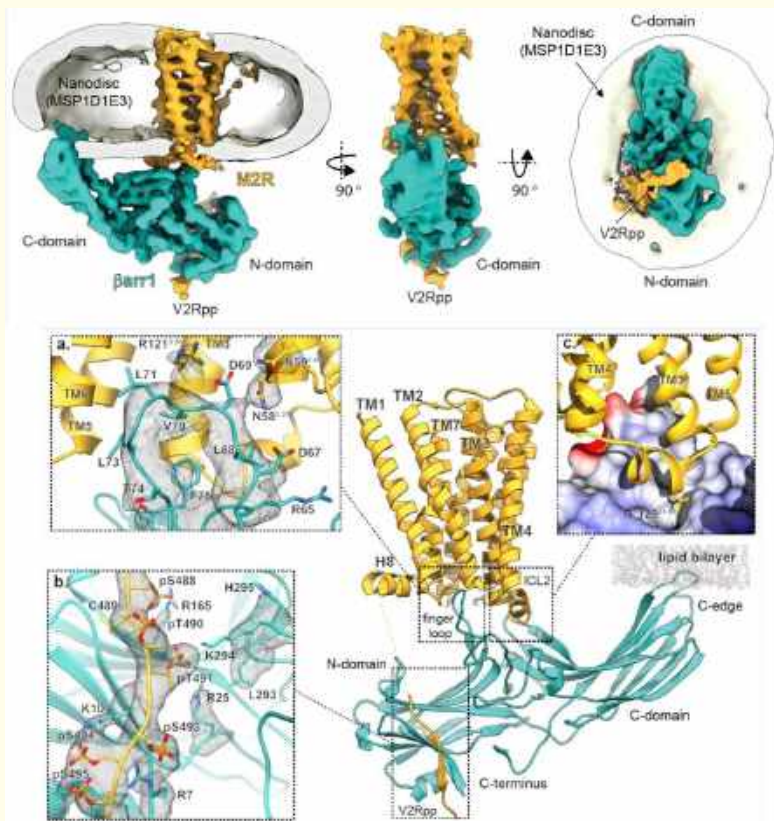
的机制，从而对相关疾病的新药开发提供指导。

GPCR/ 阻遏蛋白结构的 3D 打印模型

胡教授表示：“我们可以把 GPCR 比作细胞膜上的传达室，一个光子或气味分子被它接收后，它要把信息传递到细胞内让细胞做出反应。GPCR 主要通过 G 蛋白和阻遏蛋白来传递信号，这两种蛋白往往会诱导不同的细胞反应。”

国际顶尖 GPCR 研究者在过去几年发表了关于多个 GPCR 与 G 蛋白的相互作用的结构的成果，但仍无法完全揭秘 GPCR 如何招募阻遏蛋白。

胡教授用人造纳米盘模拟细胞膜环境研究 GPCRs 与胞内信号分子阻遏蛋白相互作用，分析二者相互作用的关键结合位点。她在文章中重点研究的 GPCR 是毒蕈碱型乙酰胆碱 -2- 受体（M2R）。它在调节人体心率和许多中枢神经系统功能中发挥着重要作用。该文章展示了这个受体招募阻遏蛋白的过程，帮助人们理解阻遏蛋白信号的启动机制，为针对这类受体的药物研发提供指导。



GPCR/ 阻遏蛋白的结构及相互作用位点放大图

Prof. Hongli Hu's Research on Structures of G-protein-coupled Receptors Published in *Nature*

Professor Hongli Hu from the School of Life and Health Sciences, The Chinese University of Hong Kong, Shenzhen recently published an article entitled "Structure of the M2 Muscarinic Receptor – β -arrestin Complex in a Lipid Nanodisc" in the internationally renowned journal *Nature*. This paper presents the molecular mechanisms underlying the interaction of β -arrestin with GPCRs reconstituted in lipid nanodiscs, analyzes the key binding areas for their interaction, and provides guidance for the development of new drugs for related diseases.

The latest research on G-protein-coupled receptors (GPCRs) and the structures of β -arrestin by Professor Hongli Hu of The Chinese University of Hong Kong, Shenzhen was published online in the journal *Nature* in January 2020. This paper presents a cryo-electron microscopy structure of β -arrestin 1 (β arr1) in complex with M2 muscarinic receptor (M2R) reconstituted in lipid nanodiscs, suggests what contribute to β -arrestin's signaling initiation, and thus provide guidance for drug development against such receptors.

Prof. Hongli Hu is an Assistant Professor and doctoral supervisor at the School of Life and Health Sciences, The Chinese University of Hong Kong, Shenzhen. She also serves as head of the Independent Research Group at the Kobilka Institute of Innovative Drug Discovery. The M2 muscarinic receptor (M2R) studied in this article plays an important role in the regulation of human heart rate and many central nervous system functions.

The published article "Structure of the M2 muscarinic receptor – β -arrestin complex in a lipid nanodisc" is the result of a collaboration between Professor Hongli Hu and Professor Georgios Skiniotis of Stanford University and Professor Robert J. Lefkowitz of Duke University. Professor Lefkowitz has received the 2012 Nobel Prize in Chemistry for his outstanding contributions to the field of GPCRs.

About *Nature*

First published in 1869, *Nature* is the world's leading multidisciplinary science journal. Many of the most important

and cutting-edge findings in scientific research are published as articles in *Nature*, which had an impact factor of 41.456 in 2014.

About Research Results

GPCRs are the largest family of membrane proteins and mediate most cellular responses to hormones and neurotransmitters, as well as being responsible for vision, olfaction and taste. GPCRs also interact with intracellular signaling protein molecules and thus induces various cellular responses.

Currently, more than 800 GPCRs have been found in humans and play an integral role in almost all important physiological activities. It is an important drug target for cardiovascular diseases, neurological diseases, inflammation, metabolic diseases, cancer and other major diseases. Thirty-four percent of the drugs on the market are targeted for GPCRs to act, and studying GPCRs has great significance for drug development for these diseases.

The GPCR family is very diverse and functions in a very important way in the human body. Professor Hu's team uses cryo-electron microscopy to study the structure of GPCRs molecules and understand the mechanisms of their signaling, thereby providing guidance for the development of new drugs for related diseases.

3D printed model of GPCR/ β -arrestin

Professor Hu said: "We can link GPCR to a communication chamber on the cell membrane. After a photon or odor molecule is picked up by it, it has to pass the information inside the cell for the cell to respond. GPCR primarily transmits signals through G-proteins and β -arrestins, which tend to induce different cellular responses."

Leading international GPCR researchers have published research over the past few years on the structure of multiple GPCR interactions with G-proteins, but haven't fully unravelled how GPCRs recruit β -arrestins.

Prof. Hu has studied the interaction of GPCRs with β -arrestins reconstituted in lipid nanodiscs and analyzed the key binding sites of the interaction. The GPCR she focuses on in her article is M2R, which plays an important role in regulating human heart rate and many central nervous system functions. This article demonstrates the recruitment of β -arrestins to this receptor, helps to understand the initiation mechanism of β -arrestins signaling, and provides guidance for drug development against such receptors.



作者介绍

胡红丽教授

胡红丽教授是香港中文大学（深圳）生命与健康科学学院助理教授、博士生导师及科比卡创新药物开发研究院作为独立课题组负责人。目前，她负责 G 蛋白偶联受体复合物的结构生物学研究。

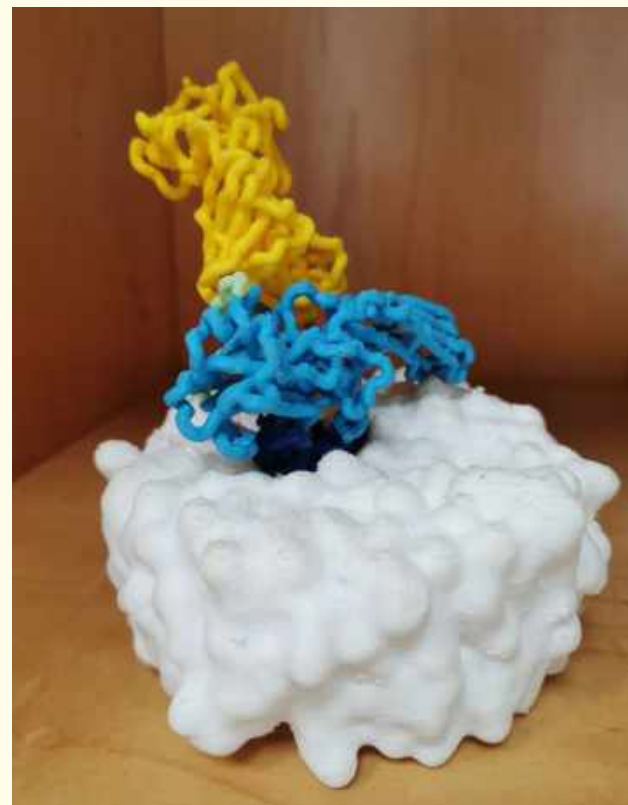
胡教授主要从事基于冷冻电子显微镜的膜蛋白结构研究，与 2012 年诺贝尔化学奖得主 Brian K. Kobilka 教授和 Robert J. Lefkowitz 教授开展多项合作研究，在 A、B、C 类几种重要的 GPCRs 的结构研究均有重大突破，其中七篇科研成果发表在 *Nature* 和 *Cell* 杂志上，在国际上获得广泛关注，引用 688 次。

About the Author

Assistant Professor
 Doctoral Supervisor
 Head of Independent Research Group

Prof. Hongli Hu is an Assistant Professor and doctoral supervisor at the School of Life and Health Sciences, The Chinese University of Hong Kong, Shenzhen and head of the Independent Research Group at the Kobilka Institute of Innovative Drug Discovery. Currently, she is responsible for the study on the structural biology of G-protein-coupled receptor complexes.

She mainly uses Cryo Electron Microscopy to obtain the high-resolution structure of GPCR and studies the interaction between membrane proteins and their regulatory proteins. She has conducted extensive collaborative research with Prof. Brian Kobilka and Prof. Robert Lefkowitz of 2012 Nobel Laureates in chemistry at the University of Michigan and Stanford University. These studies have led to major breakthroughs in the structural study of several important GPCRs in classes A, B, and C. Seven of the scientific results were published in *Nature* and *Cell*, and have received wide international attention with 688 citations.



GPCR/ 阻遏蛋白结构的 3D 打印模型

足不出户上大学——专家学者讲解人工智能如何助力新冠肺炎疫情防控

面对新冠疫情蔓延的形势，如何理解和准确分析其传播过程，如何迅速开发诊断技术和有效药物，如何使用信息技术推动复工复产是疫情防治防控的关键。

香港中文大学（深圳）、深圳市人工智能与机器人研究院（AIRS）和深圳市大数据研究院联合主办的“疫情与人工智能”公开学术讲座于3月22日晚在直播平台开播。李世鹏院士、黄宪达教授和成生辉博士在直播中分享了人工智能在疫情防控方面的工作应用。

本次讲座的三位主讲嘉宾分别是深圳市人工智能与机器人研究院副院长、国际欧亚科学院院士李世鹏教授，香港中文大学（深圳）生命与健康科学学院教学助理院长、瓦谢尔计算生物研究院执行院长黄宪达教授，深圳市大数据研究院研究科学家、Dagoo 平台创始人成生辉博士。

李世鹏院士：
IT 技术与疫情的一些思考

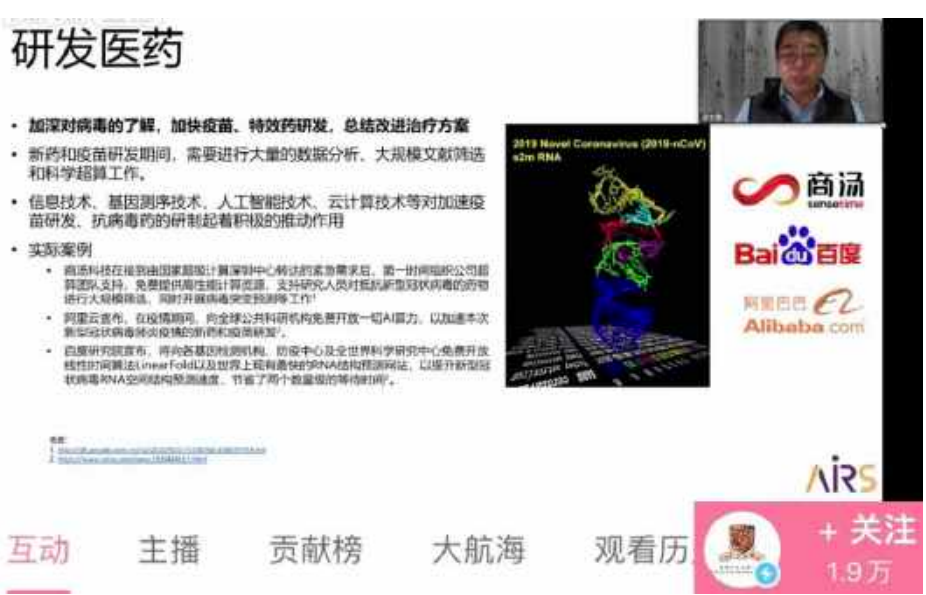


深圳市人工智能与机器人研究院副院长李世鹏院士首先对新冠肺炎疫情影响现状和特点进行了分析，并呼吁人类在面对疫情时是一个命运共同体，希望全球政府和民众能暂搁分歧，一起应对此次危机。

李世鹏院士从五个角度与大家探讨信息技术与疫情防控，包括可以直接应用于抗疫工作的成熟的信息技术、通过快速集成或快速研发后可投入应用的技术，此次疫情凸显出我国不成熟的或缺失的 IT 技术，需要开发哪些 IT 技术以应对未来的防疫工作以及技术应用后的反思和改进。

李院士指出，这次疫情凸显了中国现有众多的 IT 技术的优势，包括电商、物流、5G、大数据、人工智能应用、社区数据采集和防控，群体智慧的应用等等，同时也增强了 IT 行业在各领域应用的重要性，例如机器人、智能制造、无人工厂、自动物流、在线教育、远程制造和远程医疗。李院士在直播尾声也提出了自己关于 IT 技术与疫情防控工作方面有意义的反思，鼓励大家面向未来，研发更多更实用的技术，助力未来美好的生活。

研发医药



李世鹏院士通过案例分享 IT 技术如何加快医药研发



黄宪达教授讲解大流行病史



黄宪达教授：
人工智能助力新冠肺炎诊断技术研发与药物开发

香港中文大学（深圳）生命与健康科学学院教学助理院长黄宪达教授深入浅出地为收看直播的观众科普了人工智能如何助力新冠肺炎诊断技术研发和药物开发。

通过对比新冠病毒肺炎、流感和 SARS，科研人员发现新冠病毒肺炎的体积非常小，传染力非常强。黄宪达教授表示虽然中国境内目前的疫情防控形势良好，但疫情尚未结束，他提醒大家需要注意境外输入病例，并提出新冠病毒肺炎的流感化可能性非常高。“接下来的诊断检测技术以及治疗药物的开发非常关键，我们需要特效药来降低社会成本。”黄宪达教授说道。

黄教授表示减缓爆发式医疗负荷最有效的方法是通过检测加隔离。人工智能与大数据的配合可以帮助诊断技术的研发和药物开发，例如人工智能阅片软件与系统可以提升新冠肺炎 CT 阅片效率，人工智能和大数据结合可以提高药物的设计与开发的效率。

成生辉博士：
疫情大数据可视化展示与分析

新冠病毒的传播过程极其复杂，其影响因素多种多样，既有自然因素也有人为因素。理解和分析其传播过程是非常重要且繁琐的工作，对疫情监控、溯源和政府决策极其重要。

深圳市大数据研究院研究科学家成生辉博士围绕大数据可视化，直观地为大家呈现新冠肺炎疫情的传播过程，分享了疫情在中国各省以及全球各地的形势及其动态变化，并对疫情形势进行分析。通过可视化界面，成生辉博士将中国的疫情数据与全球的疫情数据进行了对比，以及境外输入路径的分析，并把新冠病毒肺炎跟历史上其他重大传染病，如黑死病、天花、埃博拉病毒等做了比较和分析。成博士希望可视化技术的应用可以让大家从不同角度更为清晰直观地掌握相关数据，更好地应对当前乃至未来的疫情。

大数据分析的前景受到全球国家的高度重视，也受到各行各业的广泛关注，如何用简单的方法生成高效的、专业的数据分析已成为医疗、教育、科研、物流等领域的急切需求。



成生辉博士介绍大数据如何呈现各大洲疫情蔓延情况



香港中文大学（深圳）推出“足不出户上大学”网络公开课系列，为大家带来涵盖人文社科、金融经济、理工、生命健康和信息技术等主题的学术讲座。在哔哩哔哩网站（https://www.bilibili.com/）搜索“香港中文大学（深圳）”或扫描二维码关注该官方账号，进入直播间“云”收看讲座。

Creative Illustration
创意插画
帶你在港中大（深圳）散散步
Take a Walk on Campus through Pictures

疫情蔓延，校园封闭。原本应该因为春季开学而活跃起来的校园，此刻静谧安然，时间静静流淌。

校园里一些日常的平淡的甚至我们都不曾察觉的角落，因为距离的遥远，因为未知的变数，也变得让人想念起来。

2018 级逸夫书院、经管学院陈长丰同学，以创意的笔触，为安静的校园添加了生动的想象。

让有趣的灵魂和创意的插画，带领我们的思绪“假装”在学校散散步，一同期待疫情退散的好消息早一点到来。

Here in Shenzhen it often feels like we go straight from summer to a brief winter before spring comes around again. Blue skies, green leaves, and flowers are breaking out quietly on campus. Although it is a pity that students are still away at the moment, Zhangfeng Chen created a series of illustration by using the beautiful views of the University. Let's explore them and find out your favorite spot at CUHK-Shenzhen.

摄影、设计 / 陈长丰
(创作于 2020 年 2 月，校园因疫情暂时封闭，学生暂不返校)



天堂图书馆 | 于大学图书馆仰望 Paradise Library | At CUHK-Shenzhen library



Wi-Fi | 摄于神仙湖边草地
Wi-Fi | Grassland by the lake



五线谱 | 摄于中国环山路
Stave | On the road of the middle campus



雨点荷塘 | 摄于博文书店前
Lotus Pond | Bowen Bookstore



天鹅与月牙 | Tutorial 结束后上楼一抬头
Swan and Moon | Looking up in the sky after finishing tutorial