CQSE-NCTS-CASTS-CTP

Joint Seminar

「Mar. 26, 2021 (Friday)」

- Time : 14:30~15:30
- Place : Rm104, New Physics Building
- Speaker: Prof. Yufeng Jane Tseng 曾宇鳳
  NTU BEBI, NTU CSIE, NTUMC SP
  臺大: 生醫電資所 資工系 藥學院
- Title : Quantum computing for drug discovery

▲The seminar is also open to non-NTU members; hence all participents must wear a mask. (Following Fall and Winter Precautionary Measures)

**Sponsored by Center for Quantum Science and Engineering (CQSE), National Center for Theoretical Sciences (NCTS)-Physics Division- Themetical Group TG1.1, Center for Advanced Study in Theoretical Sciences (CASTS), and Center for Theoretical Sciences (CTP), NTU

Joint CQSE-NCTS-CASTS-CTP Seminar

2021
March 26, Friday

TIME Mar. 26, 2021, 2:30~3:30pm
TITLE Quantum computing for drug discovery
SPEAKER Prof. Yufeng Jane Tseng
Graduate Institute of Biomedical Electronics and Bioinformatics, Department of Computer Science and Information Engineering, School of Pharmacy, NTU
PLACE Rm104, Chin-Pao Yang Lecture Hall,
CCMS & New Physics Building, NTU

Abstract:

Quantum computing is known to have two major advantages of speedup in computation: exponential speedup and the polynomial speedup. This talk will first brief what computer do in drug development and then move on to examples in each of the possible speedups in recent publications. Examples will be given on a case for drug discovery and development and current status using IBM qubits.

- N O T I C E -
▲ Please swipe NTU card / ID card when entering CCMS-Phys. Building.
▲ Both faculty members and participants are required to wear sanitary masks all the time.
▲ All participants and event workers should stay at designated areas and minimize contact at short distances.
▲ We collect personal info during covid-19 only for contact tracing purposes.

Biography Brief:

Professor Yufeng Jane Tseng received her B.S. degree in Pharmacy from National Taiwan University in 1997. Prof. Tseng then received her Ph.D. degree in Medicinal Chemistry and Pharmacognosy from University of Illinois at Chicago (UIC) in 2002, and was the recipient of the Charles Bell Award for Computational Chemistry in 2001. From 1998 to 2006, Prof. Tseng had worked as a Principal Molecular Modeling Software Developer at The Chem21 Group, Inc., in Lake Forest, USA. From 2004 to 2006, Prof. Tseng also worked as a postdoctoral research fellow at the National Center for Biotechnology Information, National Institutes of Health in Bethesda, MD, USA. Prof. Tseng joined the Department of Computer Science and Information Engineering at National Taiwan University (NTU) in 2006 as an Assistant Professor, and held a joint-appointment at the School of Pharmacy also at NTU.

Prof. Tseng has devoted 15 years of active service in education and continues to be a leader in computational chemistry and computer-aided drug design. Since 2009, she has

founded and served as the Principle Investigator of Metabolomics Core Laboratory at NTU. Since 2010, Prof. Tseng has been organizing and chairing the Drug Discovery Symposium at the American Chemical Society (ACS) National Meetings and continues her services at ACS to present. In 2014, she became a Professor at the Graduate Institute of Biomedical Electronics and Bioinformatics, with the Department of Computer Science and Information, and at the School of Pharmacy. In 2015, Prof. Tseng was appointed the Director of Drug Research Center at NTU, and in 2016, she was appointed the associate director of the Neurobiology and Cognitive Science Center at NTU. She was appointed as the associate chair of the department of Computer Science and Engineering at NTU last year in 2019.

As an outstanding faculty, Prof. Tseng received IBM Faculty Award (USA) in 2015 and Ching Kang Foundation Young Investigator Award (Taiwan) in 2016. And her continuous efforts in organizing the Drug Discovery Symposiums at America Chemical Society (ACS) National Meetings and leading the Teach-Discovery-Treat (TDT) Initiative for discovering novel treatments for neglected diseases, was awarded the ACS Innovation Award (USA) in 2012 and ACS Chemiluminary Award (USA) in 2013. In present, Prof. Tseng has published: over 78 peer-reviewed papers, 68 conference papers, 3 book chapters, and holds 5 international patents. She is recognized as a leader in the computer-aided drug design community.

Prof. Tseng's expertise in AI-assisted drug design and discovery has made rapid progress and showed promising clinical results in novel CNS drug and cardiovascular drug developments. Prof. Tseng's extraordinary effort in drug discovery was recognized with 12 prestigious awards: NTU EE Alumni Technology Innovation Award (Taiwan, 2021), BIO Asia 2020 'Innovation of the year Award'(BioAsia, 2020), National Bio-Innovation Award (Taiwan, 2020), NTU EE Alumni Technology Innovation Award (Taiwan, 2020), Futuristic Breakthrough Technology Award (Taiwan, 2019), National Bio-Innovation Award (Taiwan, 2019), Novartis Venture Fund Mentorship Grantee (USA, 2016 and 2017), NTU EECS Academic Merit Award (Taiwan, 2017), National Bio-Innovation Award (Taiwan, 2016), Drug Repurposing Innovation Award (Taiwan, 2015), and NTU EECS Outstanding Research Contribution Award (Taiwan, 2013). For this reason, Prof. Tseng was invited to join the SPARK Program, to further her drug discovery and development efforts and to become a leader in pushing co-development of novel therapies between university and industry experts. In 2017, Prof. Tseng was appointed the Director of SPARK Taiwan, but quickly, she was also appointed the Chairman of Asia SPARK Regional Committee and Global SPARK Executive Committee in 2018. Since then, Prof. Tseng has actively promoted academic-discovered novel therapies for common and neglected diseases, and successfully showcased and garnered interests from international venture capitalists and industry experts to co-develop these therapies, to improve the quality of life of patients worldwide.