NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE

School of Biological Sciences
College of Science

Seminar Announcement

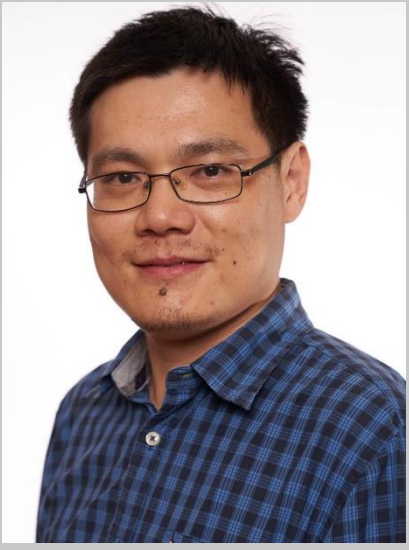
Structural Characterization of Functional Protein Polymers in Human Immune System

Date: **6 November 2020, Friday**

Time: **4pm**

Venue: **Classroom 1, SBS**

Long filamentous protein complexes are not restricted to their physical support in human cells. In immune system, many protein filaments are not only carrying out direct detection and neutralizing roles, they are also critically important for regulating life-or-death cellular decisions. There are growing literature highlighting the importance of these signaling events in all sorts of disease aetiology, from kidney disease, neuro-degenerative diseases to cancer biology. These filamentous oligomer formation is often at the most critical signaling bottleneck, rendering it extremely sensitive to inhibitors or enhancers, as well as impossible to evade or bypass. Unlike other traditional signaling events, there are no enzymatic reactions taking place during the filament formation. All the monomeric subunits simply come together spontaneously and mostly in an irreversible manner. Thus, beyond satisfying our curiosity, it is highly desirable to understand the biochemical nature of how basic ‘building blocks’ coming together to form these filamentous oligomers, so that we can engineer and rewire these complexes. In this seminar, I will talk about our recent successes in solving filamentous structures of human RIP2, Uromodulin, NLRP1, CARD8, ASC, NLRC4, AIRE (autoimmune regulator), as well as several other unpublished complexes, using an in-house modified helical-reconstruction platform.



Speaker:

Wu Bin
Nanyang Assistant Professor
School of Biological Sciences
Nanyang Technological University