

# JSPS Core-to-Core Program and University of Wollongong Joint meeting:

## Protein aggregation, proteostasis and crocodiles

Thursday 24th November, 2022 at University of Wollongong, Australia

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Machikane Wani (Machikane Crocodile), a mascot of Osaka Univ., is an extinct crocodile which lived in Japan around 400 thousand years ago. A specimen was recovered in 1964 at Osaka University during the construction of a new science building.  
Bottom left photo is from Crocodile Dundee, 1986.

## JSPS Core-to-Core Program and University of Wollongong Joint meeting: Protein aggregation and proteostasis

Date: 09:30 am - 4:30 pm on Thursday 24th November, 2022

Place: Building 32.G01, University of Wollongong, Australia

Organizers: Yuji Goto (Specially Appointed Researcher, Osaka University, Graduate

School of Science: gtyj8126@protein.osaka-u.ac.jp) and

Mark Wilson (Senior Professor, School of Chemistry and Molecular Bioscience, University of Wollongong: mrw@uow.edu.au)

9:50-10:00	Opening Remarks by YG (10 min)		
10:00-10:25	25 min	1 Keiichi Higuchi (Shinshu University)	Prevention of age-related and inducible mouse ApoA-II amyloidosis
10:25-10:50	25 min	2 Luke McAlary (University of Wollongong)	Biomolecular condensation of ALS-associated proteins
10:50-11:05	Break (15 min)		
11:05-11:30	25 min	3 Yoshitaka Nagai (Kindai University)	DISEASE-MODIFYING THERAPY FOR THE POLYGLUTAMINE DISEASES TARGETING PROTEIN MISFOLDING AND AGGREGATION
11:30-11:55	25 min	4 Lezanne Ooi (University of Wollongong)	Lipid alterations and an increased susceptibility to ferroptosis in Alzheimer's disease neurons
11:55-12:20	25 min	5 Kensuke Ikenaka (Osaka University)	Conformational state of the alpha synuclein monomer imparts the fibril polymorphisms of the synucleinopathies
12:20-13:20	Lunch (60 min)		
13:20-13:45	25 min	6 Heath Ecroyd (University of Wollongong)	Studying the molecular chaperone action of heat shock proteins one molecule at a time
13:45-14:05	25 min	7 Kazumasa Sakurai (Kindai University)	THE "FLEXIBLE" RESIDUAL STRUCTURE OF ACID-DENATURED $\beta$ 2-MICROGLOBULIN IS RELEVANT TO AN ORDERED FIBRIL MORPHOLOGY
14:05-14:30	25 min	8 Yumiko Ohhashi (Kobe University)	Local structure of an intrinsically disordered region of Sup35 causes temperature sensitivity of liquid-liquid phase separation
14:30-14:45	Break (15 min)		
14:45-15:10	25 min	9 Eri Chatani (Kobe University)	MECHANISMS OF OLIGOMER AND PROTOFIBRIL FORMATION SUGGESTED THROUGH STUDIES OF INSULIN AND ITS B CHAIN
15:10-15:35	25 min	# Mark Wilson (University of Wollongong)	Mapping the clusterin chaperone molecule
15:35-16:00	25 min	# Kichitaro Nakajima (Osaka University)	Macromolecular crowding and supersaturation protect hemodialysis patients from the onset of dialysis-related amyloidosis
16:00-16:20	20 min	Discussion	
16:20-16:30	Closing Remarks by MW (10 min)		
Dinner at the Anchorage			

## Greeting from the Organizers

It is our great pleasure to organize a JSPS Core-to-Core Program and University of Wollongong Joint meeting on “Protein aggregation and proteostasis”.

Many globular proteins can form amyloid fibrils, misfolded ordered aggregates associated with serious amyloidosis such as Alzheimer's disease, Parkinson's disease, and dialysis-related amyloidosis. Goto and coworkers proposed that amyloid fibrils are crystal-like aggregates of denatured proteins, which are formed above solubility upon breaking supersaturation (see Noji et al. Commun. Biol. 2021). To extend this concept internationally and to encourage young scientists, Goto has organized the JSPS Core-to-Core Program entitled “an international cutting-edge network for the study of protein aggregation”, with a period of April 2018 to March 2022. <https://supersaturation.sakura.ne.jp/core2core/>

The program started with 6 overseas institutions and coordinators: Jozsef KARDOS (Hungary, Eötvös Loránd University), John CARVER (Australia, Australian National University), Vittorio BELLOTTI (UK, University College London), Esposito Gennaro (Italy, University of Udine), BUCHNER Johannes (Germany, Technical University of Munich), Daniel OTZEN (Denmark, Aarhus University), and Wojciech DZWOLAK (Poland, University of Warsaw). Owing to the retirement of John CARVER, the current Australian Core Institute is the University of Wollongong with Mark Wilson as a coordinator.

The 4th Proteostasis and Disease Research Symposium is held at Wollongong on November 21-23, 2022. Mark, one of the organizers of the symposium, kindly agreed to organize this joint seminar as a satellite meeting on November 24 at University of Wollongong. Japanese participants sincerely thank his exceptional kindness and hospitality.

“The JSPS Core-to-Core Program is designed to create world-class research hubs in research fields considered to be cutting-edge and internationally important. In addition, while advancing research, the Core-to-Core Program will also concentrate on fostering the next generations of trailblazing young researchers”.

We hope that this joint seminar will become a critical event for promoting interactions and collaborations between Australian and Japanese scientists and for fostering young scientists.

Sincerely yours

Yuji Goto (Osaka University) and Mark Wilson (University of Wollongong)

November 24, 2022

