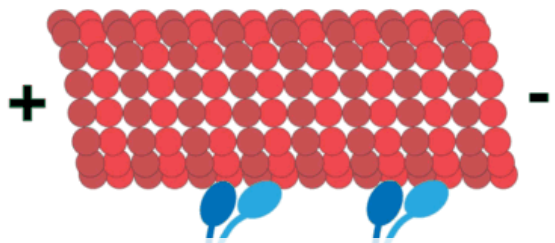
January 6th, 2020, 16:00-17:00

Common Seminar Room, 2nd floor, Yamate 3rd bldg.

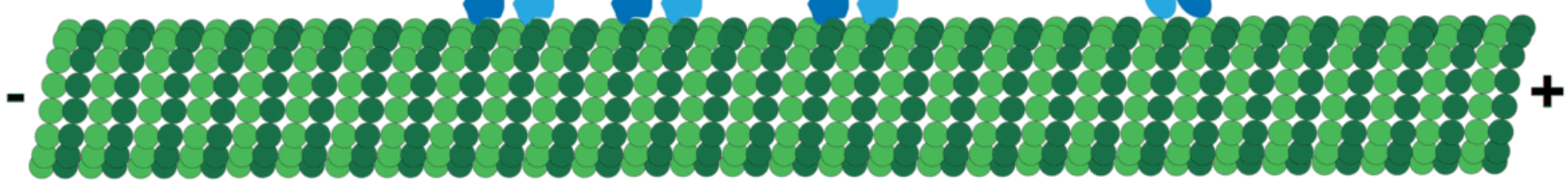
The 6th Okazaki Molecular Engine Seminar

Associate professor, Department of Physics,
Oregon State University, USA

Dr. Weihong Qiu



Kinesin-14s:
Moving into a New Paradigm



Kinesin-14s are microtubule-based motor proteins that play important roles in cell division. They were originally thought to be minus-end-directed nonprocessive motors that exhibit directional preference toward the microtubule minus ends in multi-motor ensembles but are unable to generate processive (continuous) motility on single microtubules as individual motors. We and others have recently discovered several "unconventional" kinesin-14 motors that all contain the ability to generate processive motility as individual motors on single microtubules. In this talk, I will present a series of unexpected yet exciting findings from my lab that have markedly expanded current view of the design and operation principles of kinesin-14 motors.

References

1) Gicking A.M. et al., *Biophys. J.* 116: 1270-1281 (2019)
2) Wang P. et al., *Cur. Biol.* 28: 2302-2308 (2018)
3) Tseng K.F. et al., *Nat. Commun.* 9: 1067 (2018)
4) Popchock A.R. et al., *Nat. Commun.* 8: 13999 (2017)

Contact: Ryota IINO (#5230)

http://www.molecular-engine.bio.titech.ac.jp/eng/

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