

# Our Team

## Yasunori Nomura

Research Field: **Theoretical Physics**

Kavli IPMU Professor

I am a theoretical physicist, working mainly on particle physics and cosmology. In the past two decades, our understanding of the universe has improved dramatically, which includes the Nobel-awarded discovery of the accelerated expansion. Also, recent progresses in quantum gravity are revealing remarkable natures of spacetime and gravity, beyond what we can learn from quantum field theory in curved spacetime. These new developments together suggest a surprising picture of the “quantum multiverse”: our universe may be one of the many universes in which low energy physical laws take different forms, and that quantum mechanics plays a crucial role in describing these many universes even at the largest distance scales. I am pursuing what this new picture implies for fundamental aspects of



quantum gravity as well as for future cosmological observations. I also study related questions in quantum gravity, such as the information problem in black hole physics.

# Edwin L. Turner

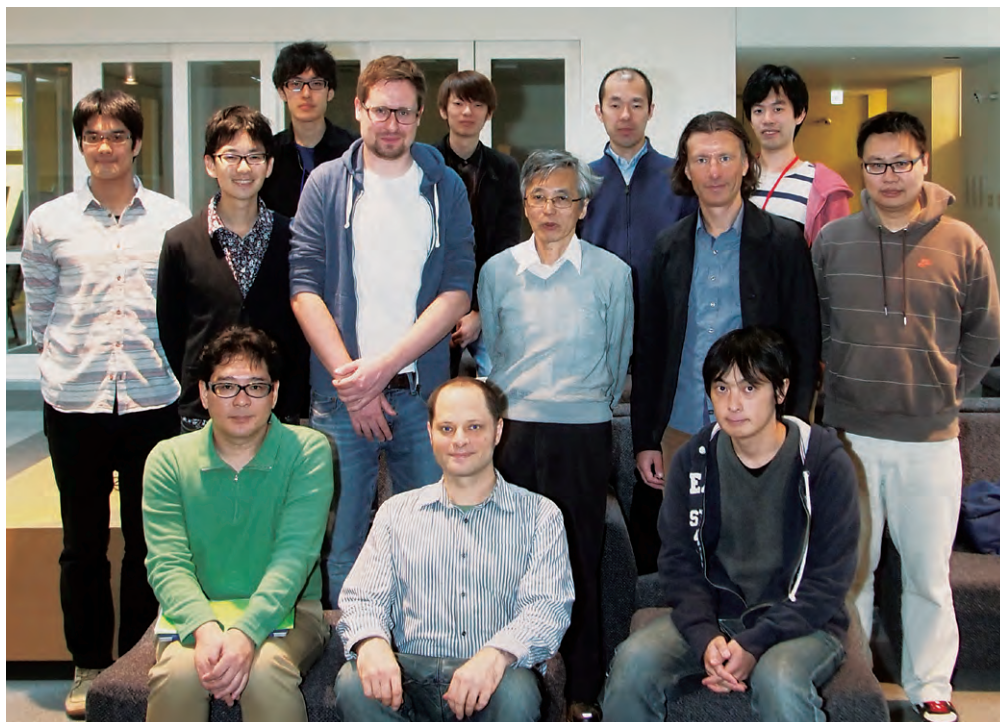
Research Field: **Astronomy (Astrophysics)**

Kavli IPMU Professor



My recent research interests are focused on exoplanet studies, astrobiology, astro-statistics and the origin of life problem in a cosmological context. Much of my past research has been in the area of classical cosmology with substantial concentrations on gravitational lensing phenomena, quasars, cosmic structure formation and determination of the fundamental parameters of the standard FLRW world model. In most cases my efforts involve both theoretical and observational techniques and are frequently located at the intersection of the two; they also often employ Bayesian and/or non-parametric statistical tools. I am still involved in cosmological research at a modest level, particularly via the SuMIRe project. Finally, a small component of

my time is devoted to issues in epistemology and the limits of reductionist science.



Particle Phenomenology

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