

The science of creamy Cacio e Pepe



Ingredients:

4 g starch (potato or corn starch)

40 ml water (to mix the starch)

160 g Pecorino Romano

240 g pasta (ideally tonnarelli)

Pasta cooking water

Black pepper and salt (to taste)



Abstract:

Cacio e pepe is one of Italy's most popular pasta dishes, but even (Italian) scientists often fail to prepare the perfect creamy sauce.

Daniel Maria Busiello, a physicist at the University of Padua, also struggled with this—until he had had enough of random trial and error, and approached the problem scientifically.

Together with colleagues (all Italian) from the Max Planck Institute in Dresden, the Institute of Science and Technology Austria, and the University of Barcelona, he set out to uncover the secret of the perfect sauce so that it would turn out right every time.



Profile: Daniel M. Busiello earned his PhD in Physics from the University of Padua in 2018. He subsequently joined the Statistical Biophysics Lab at EPFL as a postdoctoral researcher. In 2022, he was appointed to an independent research position at the Max Planck Institute for the Physics of Complex Systems in Germany, where he established his research line at the interface of information theory, stochastic thermodynamics, and chemical reaction networks. Since early 2025, he has been a Group Leader at the University of Padua.

Daniel was awarded the Early Career Scientist Prize in Statistical Physics in 2025 and received the IgNobel Prize in Physics for his work on the phase behavior of Cacio e Pepe sauce.

MAY 08
2026

Venu : Seminar Room B250
Lecture: 18:00~19:00
Tasting: 19:00~19:30

English with Japanese Interpretation

limited-seat registration available:

