

Undergraduate Colloquium in Mathematics

Illinois State University

12:00-12:50 PM CST, January 27, 2022

Speaker: **Gaywalee Yamskulna, Ph. D. (Illinois State University)**

From Lie Algebras to Combinatorial Identities

Abstract:

For a first part of this talk, I will provide some general background on finite dimensional Lie algebras and discuss how to use representation theory of finite dimensional Lie algebra to derive some combinatorial identities.

For a second part of the talk, I will introduce affine Lie algebra and lightly explain how Lepowsky and Wilson gave a Lie-theoretic interpretation of the Rogers-Ramanujan identities in term of representations of a specific type of affine Lie algebra.

About Speaker:

Dr. Yamskulna graduated from Chulalongkorn University, Thailand in 1996 with a bachelor's degree in mathematics, and from the University of California at Santa Cruz (UCSC) in 2001 with a Ph.D. in Mathematics. Throughout her undergraduate and graduate education (1992- 2001), Dr. Yamskulna was supported by a Fellowship from the Development and Promotion of Science and Talents Projects which is one of the most prestigious fellowships awarded by the Government of Thailand. Dr. Yamskulna also received a Graduate Fellowship from the Fields Institute in Fall 2000. Before joining the ISU mathematical sciences faculty in Fall 2004, Dr. Yamskulna was a Postdoctoral Fellow at the Mathematical Sciences Research Institute, Berkeley, in Spring 2002 and a Visiting Assistant Professor at the State University of New York at Binghamton from Fall 2001 to Spring 2004. Currently, Dr. Yamskulna is a full professor and associate chair of Mathematics Department. Her research interest is in representation theory of (super) vertex algebras. She is particularly interested a study of representation theory of N -grade vertex algebras, and the Mathieu Moonshine conjecture.

Zoom Meeting Information

Join Zoom Meeting

<https://illinoisstate.zoom.us/j/91671891930?pwd=T3Ziam4zWE5sOXdlNnRUV3NsbGdHdz09>

Meeting ID: 916 7189 1930

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