

# Zhifeng Wei

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## CONTACT INFORMATION

Pacific Northwest National Lab  
902 Battelle Blvd.,  
Richland, WA 99354, USA

Mobile: (+1) (812) 391-0426  
Email: [zfwei@iu.edu](mailto:zfwei@iu.edu)  
Homepage: [zf-wei.github.io](https://zf-wei.github.io)

## INTERESTS

Probability, Random Walk on Graphs, Spectral Graph Theory, Network Science.

## EDUCATION

### Department of Mathematics, Indiana University (IU)

**Ph.D. in Mathematics**, August 2018 – June 2024

- Advisor: [Prof. Russell Lyons](#)
- Minor in Statistics

### School of Mathematical Sciences, [Beijing Normal University](#) (BNU)

**M.S. in Mathematics**, September 2015 – June 2018

- Advisor: [Prof. Mu-Fa Chen](#)
- Graduation with Distinction: Excellence Award from Beijing City & BNU

### [Beijing International Center for Mathematical Research, Peking University](#)

Visiting Student, [7<sup>th</sup> Enhanced Program for Graduate Study](#), 2015 Spring Semester

### [Cuiying Honors College, Lanzhou University](#) (LZU)

**B.S. Summa Cum Laude in Mathematics**, September 2011 – June 2015

- Advisor: [Prof. Heping Zhang](#)

## EMPLOYMENT

### **Pacific Northwest National Laboratory (PNNL), United States of America**

**PNNL Distinguished Postdoctoral Fellow**, August 2024 – present

### **Oak Ridge National Laboratory (ORNL), United States of America**

**Research Intern**, October 2023 – March 2024 and May 2023 – July 2023

- Mentors: [Dr. Pablo Moriano](#) and [Dr. Ramakrishnan Kannan](#)
- Supported by the [GRO Program](#) and [NSF-MSGI](#) program

### **Department of Mathematics, Indiana University**

**Research Assistant/Associate Instructor**, August 2018 – June 2024

## PUBLICATIONS & PREPRINTS

- (1) **Zhi-Feng Wei, Pablo Moriano, and Ramakrishnan Kannan**, *Robustness of Graph Embedding Methods for Community Detection*, [arXiv:2405.00636](#)
- (2) **Zhi-Feng Wei**, *Sharp Bounds on Eigenvalues via Spectral Embedding Based on Signless Laplacians*, **J. Funct. Anal.**, Vol. 284, No. 5 (2023), [Article 109799](#).
- (3) **Zhi-Feng Wei**, *Inverse Problems for Ergodicity of Markov Chains*, **J. Math. Anal. Appl.**, Vol. 505, No. 2 (2022), [Article 125483](#).
- (4) **Zhi-Feng Wei and Heping Zhang**, *Number of Matchings of Low Order in  $(4,6)$ -Fullerene Graphs*, **MATCH Commun. Math. Comput. Chem.**, Vol. 77, No. 3 (2017), 707 – 724.

PRESENTATIONS	(1)	<i>Graph Embedding for Community Detection and Random Walks</i> , Indiana University Mathematics Graduate Seminar, March 2024.
	(2)	<i>Spectral Embedding, Signless Laplacian, and Random Walk Convergence</i> , Invited by Shiping Liu, University of Science and Technology of China, Sept 2023.
	(3)	<i>Sharp Bound on Return Probabilities via Spectral Embedding Method</i> , Grad Student Probability Conference, University of Wisconsin, Sept 2022.
	(4)	<i>Bound Return Probabilities via Spectral Embedding Method</i> , 20 <sup>th</sup> Northeast Probability Seminar, CUNY (Zoom talk), Nov 2021.
AWARDS	2024	<b>William B. Wilcox Mathematics Award, IU Math Department</b> Awarded to outstanding graduate students in the IU Math Department.
	2023	<b>Mathematical Sciences Graduate Intern Fellowship, NSF</b> Awarded by the National Science Foundation to support my internhsip at Oak Ridge National Laboratory during the summer of 2023.
	2023	<b>Lawrence M. Blatt Biotech Internship Fund, IU</b>
	2019	<b>James P. Williams Memorial Award, IU Math Department</b> Recognizing excellence in academic performance among top first-year graduate students in the IU Math Department.
	2018	<b>Anna L. Homquest Fellowship, IU</b>
	2016	<b>National Merit Scholarship of China for Graduate Students</b>
	2016	<b>Excellent Teaching Assistant Award, BNU</b>
	2014	<b>Outstanding Student Scholarship (Grade 3), LZU</b>
	2012	<b>Outstanding Student Scholarship (Grade 2), LZU</b>
	2012	<b>Scholarship for Outstanding Mathematics Majors, LZU</b>
TEACHING	2024 Spring	<b>Grading</b> , Math-M303: Linear Algebra for Undergrad
	2024 Spring	<b>Recitation</b> , Math-S311: Honors Calculus III
	2023 Fall	<b>Recitation</b> , Math-M211: Calculus I
	2023 Spring	<b>Assisting</b> , Math-M118: Finite Mathematics
	2022 Fall	<b>Teaching</b> , Math-M018: Basic Algebra for Finite Math
	2022 Summer	Preparation Session for Math PhD Qualifying Exam in Analysis
	2021 Fall	<b>Recitation</b> , Math-M211: Calculus I
	2021 Summer	Preparation Session for Math PhD Qualifying Exam in Analysis
	2021 Spring	<b>Recitation</b> , Math-M106: Mathematics of Decision and Beauty
	2020 Fall	<b>Grading</b> , Math-M463: Intro to Probability Theory I
	2020 Spring	<b>Grading</b> , Math-M464: Intro to Probability Theory II
	2019 Fall	<b>Grading</b> , Math-M463: Intro to Probability Theory I
	2019 Summer	<b>Assisting</b> , Math-M106: Mathematics of Decision and Beauty
	2018 Fall	<b>Grading</b> , Math-M365: Intro to Probability and Statistics
	2016 Fall	<b>Assisting</b> , Linear Algebra (BNU)
SERVICES	2024	<b>Indiana State Mathematics Contest 2024</b> Writing exam for “Pre-Algebra” contest.

GRANTS	2024	<b>AMS’s Mathematics Research Communities (MRC) program</b> Supporting early-career mathematicians to experience hands-on collaborative research in their field of inquiry.
	2014	<b>Cuiying Student Innovation Fund, LZU</b> Supporting undergraduate research for honors students at LZU.
LANGUAGES	Chinese (Native), English (Fluent), French (Elementary)	
SKILLS	C++, Python, T <sub>E</sub> X, High-Performance Computing (HPC), Mathematica, R	
PROFESSIONAL AFFILIATION	(1) American Mathematical Society	
	(2) Society for Industrial and Applied Mathematics	

(Updated: May 18, 2024)