

Department of Mathematics

**Virginia Tech**

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## Education

- 08/2016      Ph.D. in Mathematics, **Wayne State University**, Detroit, MI  
Thesis: *New combinatorial formulas for cluster monomials of type A quivers*  
Advisors: *Kyungyong Lee* and *Li Li*
- 08/2013      M.A. in Mathematics, **Wayne State University**, Detroit, MI
- 07/2007      M.Sc. in Mathematics, **Vietnam National University**, Vietnam
- 08/2003      B.Sc. in Math & Computer Science, **Vietnam National University**, Vietnam

## Positions

- 08/2021–      Instructor, **Virginia Tech**, Blacksburg, Virginia
- 2020–2021      Instructor, **University of Colorado Denver**, Denver, Colorado  
**International College Beijing**, Beijing, China
- 2017–2019      Coleman Post-Doctoral Fellow, **Queen's University**, Kingston, Ontario
- 2016–2017      Research Assistant, **Oakland University**, Rochester, Michigan

## Research Interests

Cluster Algebras, Representation of Quivers, Cluster Categories, and Combinatorics.

## Awards and Fellowships

- Professional Development Grant* (\$1072), Queen's University, 2019.
- Post-Doctoral Travel Award* (\$1300), Queen's University, 2018.
- Coleman Post-Doctoral Fellowship*, Queen's University, 2017–2019.
- Andre Laurent Award for outstanding achievement in the Ph.D. program*,  
Wayne State University, 2016.
- Graduate Teaching Assistantship*, Wayne State University, 2010–2015.

## Publications

– Published:

1. *New combinatorial formulas for cluster monomials of type A quivers*, with K. Lee and L. Li. *Electronic Journal of Combinatorics*, Volume 24, Issue 2 (2017), #P2.42.

– In Preparation

2. *Broken Lines and Theta Basis for Type D Cluster Algebras*, with L. Li.
3. *Weight Functions and Broken Lines of Cluster Monomials in the Type A case*, with L. Li.
4. *Representation Theoretic Formula for Cluster Variables of Infinite Rank Surface Cluster Algebras*, with C. Paquette and E. Yildirim.
5. *Broken Lines and the Topological Order of the Alternating Quiver of Type A*, with D. Wehlauf, T. Xu, and I. Zaguia.

## Conferences and Workshops

- Mar 2016 Workshop: *Cluster algebras and wall-crossing*, MSRI, Berkeley, California.
- Jan 2018 Combinatorial Algebra meets Algebraic Combinatorics, 15th Annual Meeting, McMaster University, Ontario.
- Dec 2018 Cluster Structure in Geometry, Physics, Combinatorics and Representation Theory, University of Notre Dame's Jerusalem Global Gateway, Jerusalem, Israel.  
Talk title: *Broken Lines and Theta Bases for Type D Cluster Algebras*.
- Jan 2019 Combinatorial Algebra meets Algebraic Combinatorics, 16th Annual Meeting, University of Ottawa, Ontario.
- Jun 2019 Vietnam-USA Joint Mathematical Meeting, International Centre for Interdisciplinary Science and Education, Quy Nhon, Vietnam.  
Talk title: *New Formulas for Cluster Monomials of Type A Quivers*.
- Aug 2019 Quiver varieties and representation theory, Le Centre de Recherches Mathématiques, Montréal, Québec.
- Jun 2020 Qolloquium: Quivers, Representations, Resolutions, Online Conference.
- Aug 2020 Cluster Algebras 2020, Online Conference.
- Jan 2021 Combinatorial Algebra meets Algebraic Combinatorics, 17th Annual Meeting, Online Conference.
- Jun 2021 25th Ontario Combinatorics Workshop, Online Workshop.
- Jun 2021 Summer School of Algebraic Combinatorics, Online Conference.
- Aug 2021 Cluster Algebras and Related Topics, Online Conference.

## Seminar Talks

- Oct 2017 Geometry and Representation Theory Seminar, Queen's University, Ontario.
- Apr 2019 Geometry and Representation Theory Seminar, Queen's University, Ontario.
- Mar 2019 Applied Algebra Seminar, York University, Ontario.
- Sep 2019 Séminaire de Combinatoire et d'Informatique Mathématique du LaCIM, Université du Québec à Montréal, Québec.

## Professional Activities and Services

- Oct 2019 Referee to ORDE
- April 2020 Serve on the Hiring Committee for a Mathematics Instructor position at the University of Colorado Denver

## Teaching Experience

- **Wayne State University**: Taught 11 courses (around 35 students in each course) as the instructor of record. Lecturing; preparing lecture notes; preparing weekly quizzes and midterm exams; writing (Math 2012 and 3450) and grading final exams.
- Math 1050 - Algebra with Trigonometry: Fall 2011, Winter 2012, Fall 2012, Fall 2015.
  - Math 1800 - Precalculus: Spring/Summer 2011, Fall 2013, Fall 2014.
  - Math 2010 - Calculus 1: Winter 2013, Spring/Summer 2013.
  - Math 2012 - Calculus 2: Spring/Summer 2014.
  - Math 3450 - Applied Calculus and Differential Equations: Winter 2015.

– **Queen’s University:** Taught 3 courses (60 students in each course) as the instructor of record. Lecturing; preparing lecture notes; grading final exams.

- Math 126B - Differential & Integral Calculus: Winter 2018, Winter 2019.
- Math 126A - Differential & Integral Calculus: Fall 2018.

– **International College Beijing:** Taught 5 online courses as the instructor of record. Designing the course; preparing lecture notes; lecturing; preparing weekly quizzes and midterms; writing and grading finals.

- Math 2411 - Calculus II: Fall 2020 (3 sections).
- Math 2421 - Calculus III: Winter 2020 (2 sections), Winter 2021 (2 sections).
- Math 3191 - Linear Algebra: Winter 2020 (2 sections), Fall 2020, Winter 2021 (2 sections).
- Math 3200 - Differential Equation: Winter 2021
- Math 4409 - Applied Combinatorics: Summer 2020.

– **Mentorship roles:**

- Mentored to a new Graduate Teaching Assistant on preparing for teaching in the Fall 2014.

## Technical Skills

- Proficient in C++, Java and Python languages.
- Written codes for Sage, Maple.

## References

### **Kyungyong Lee**

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University of Alabama,  
Tuscaloosa, Alabama 35487.

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### **David Wehlau**

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### **Li Li**

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### **James Mingo** (Teaching reference)

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### **Julien Langou** (Teaching reference)

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