

Erik E. Westlund | Curriculum Vitae

370 Paulding Ave., NW (MD #1102) – Kennesaw, Georgia 30144 – USA

📞 (770) 876 8845 • 📞 +1 (470) 578 2912 • ✉ erik.westlund@kennesaw.edu
🌐 facultyweb.kennesaw.edu/ewestlund • 📅 July 20, 2020

Employment

Kennesaw State University <i>Associate Professor</i> Department of Mathematics	Kennesaw 2017
Kennesaw State University <i>Assistant Professor</i> Department of Mathematics	Kennesaw 2011
University of Wisconsin–Marshfield/Wood Co. <i>Assistant Professor</i> Department of Mathematics	Marshfield 2010
Michigan Technological University <i>Graduate Teaching Assistant</i> Department of Mathematical Sciences	Houghton 2004

Education

Michigan Technological University <i>Ph.D., Mathematical Sciences</i>	Houghton 2010
Michigan Technological University <i>M.S., Mathematics</i>	Houghton 2006
Northland College <i>B.S., Mathematics</i>	Ashland 2003

Research Interests

Structural graph theory, graph decompositions, graph coloring, algebraic graph theory, combinatorics, applied network science, mastery/specifications-based grading

Publications

Refereed Journal Articles.....

2020: Vandenbussche, J., Ritter, L., Callahan, K., and Westlund, E. E., Using Strand Committees to Build Faculty Support for Departmental Change, *Problems, Resources, and Issues in Mathematics Undergraduate Studies (PRIMUS)*, <https://www.tandfonline.com/doi/full/10.1080/10511970.2020.1772916>

2020: Larsen, V., Vandenbussche, J., and Westlund, E. E., Hall Spectra and Extending Precolorings with Extra Colors, *Australasian Journal of Combinatorics*, **76**(3), 346–365

2016: Holliday, S., Vandenbussche, J., and Westlund, E. E., Every graph G is Hall $\Delta(G)$ -extendible, *Electronic Journal of Combinatorics*, **23**(4), #P4.19

2016: Golubski, A. J., Westlund, E. E., Vandermeer, J., and Pascual, M., Ecological Networks over the Edge: Hypergraph Trait-Mediated Indirect Interaction (TMII) Structure. *Trends in Ecology and Evolution (TREE)*, **31**(5), 344–354

2015: Holliday, S., Vandenbussche, J., and Westlund, E. E., Completing Partial Proper Colorings Using Hall's Condition, *Electronic Journal of Combinatorics*, **22**(3), #P3.6

2015: Castle, M., Moore, E. D., and Westlund, E. E., Directed Tree Decompositions of Cayley Digraphs With Word-Degenerate Connection Sets, *Australasian Journal of Combinatorics*, **61**(1), 82–97

2014: Westlund, E. E., Hamilton Decompositions of 6-Regular Cayley Graphs on Even Abelian Groups With Involution-Free Connection Sets, *Discrete Mathematics*, **331**, 117–132

2012: Westlund, E. E., Hamilton Decompositions of Certain 6-Regular Cayley Graphs on Abelian Groups With a Cyclic Subgroup of Index Two. *Discrete Mathematics*, **312**, 3228–3235

2010: Kreher, D. L., and Westlund, E. E., n-Isfactorizations of 8-Regular Circulant Graphs. *Journal of Combinatorial Mathematics and Combinatorial Computing*, **72**, 197–209

2009: Westlund, E. E., Liu J., and Kreher, D. L., 6-Regular Cayley Graphs on Abelian Groups of Odd Order are Hamiltonian Decomposable. *Discrete Mathematics*, **309**, 5106–5110

Manuscripts In Preparation.....

Vandenbussche, J., and Westlund, E. E., Extending Matchings to Perfect Matchings in Cartesian Products of Even Cycles

Grants and Fellowships

Funded External Grant Proposals.....

SEMINAL (Phase 2) **National Science Foundation**
Student Engagement in Mathematics through an Institutional Network for Active Learning 2018–2020
PI Jennifer Vandenbussche, CoPIs Kadian M. Callahan, Lake Ritter, Erik E. Westlund (\$93,249)

Funded Internal Grant Proposals.....

Gateways to Completion: Course Redesign Faculty Learning Community **Kennesaw State University**
Learning-Centered Course Redesign of Calculus 1 2017-2018
PI Erik E. Westlund (\$4,000)

Office of the Vice President for Research (OVPR) Award **Kennesaw State University**
Cluster Detection, Subgraphs, Hyperpaths in Ecological Hypergraphs 2016
PI Erik E. Westlund, CoPI Antonio Golubski (\$5,700)

Mentor-Protégé Award **Kennesaw State University**
Interval Edge Colorings of Cayley Graphs 2015–2016
PI Erik E. Westlund, CoPI Stephen Dong (undergraduate student) (\$1,684)

Interdisciplinary Research Opportunities Program (IDROP) Award **Kennesaw State University**
Interactive effects in networks across diverse disciplines 2013–2015
CoPIs Antonio Golubski, Erik E. Westlund, and Jing He (\$75,000)

Faculty Summer Research Award **Kennesaw State University**
Hamilton Decompositions of Cayley Graphs 2011
PI Erik E. Westlund (\$5,300)

Recent Unfunded External Proposals.....

Basic and Applied Scientific Research in Biomathematics **U.S. Army Research Office**
Hypergraph topological predictors of the dynamics of complex ecological systems 2016
PI: Antonio Golubski, CoPIs: Erik Westlund and Stuart Borrett (\$352,801)

NSF 14-579 (RUI) **National Science Foundation**
Pushing ecological networks over the edge: Hypergraph topologies ... 2015
PI: Antonio Golubski, CoPI: Erik Westlund (\$149,750)

Funded Travel Grants.....

Bilateral Scientific Research Cooperation Between RS and USA **Slovenian Research Agency**
Structural Properties of Cayley graphs 2018–2020
Slovenian Lead: Ademir Hujdurovic, USA Lead: Erik E. Westlund (€3,000)

Undergraduate Research & Creative Activity (URCA) Award 2016
Kennesaw State University (Center for Excellence in Teaching and Learning)
Travel support for undergraduate student to present research. (\$500)

Undergraduate Research & Creative Activity (URCA) Award 2014
Kennesaw State University (Center for Excellence in Teaching and Learning)
Travel support for undergraduate student to present research. (\$325)

Faculty Travel Award 2013
Kennesaw State University

Ph.D. Summer School in Discrete Mathematics, Slovenia (\$3,700)

Faculty Travel Award

Kennesaw State University (Center for Excellence in Teaching and Learning)
AMS/MAA Joint Mathematics Meetings (\$300)

2012

Faculty Travel Award

Kennesaw State University (Center for Excellence in Teaching and Learning)
AMS Fall Eastern Sectional Meeting (\$300)

2012

Fellowships.....

Project NExT (New Experiences in Teaching)

Sponsor: John C. Wiley & Sons, Inc.

Mathematical Association of America

2011–2012

Professional Memberships

Institute of Combinatorics and its Applications, Associate Fellow

Pi Mu Epsilon Mathematics Honor Society, Charter Member

Selected Presentations

Invited Talks.....

03/15/2020: "Extending Matchings to Perfect Matchings in Cartesian Products of Even Cycles," Special Session on Recent Advances in Graph Theory and Combinatorics, Spring Southeastern Sectional Meeting of AMS, University of Virginia, Virginia

02/15/2015: "Precoloring Extensions using Hall's Condition," The 14th Atlanta Lecture Series in Combinatorics and Graph Theory, Georgia State University, Atlanta

10/03/2013: "The Elusive Hamilton Problem for Cayley Graphs—An Overview," The 28th Clemson mini-Conference on Discrete Mathematics and Algorithms, Clemson University, Clemson

03/18/2013: "The Ubiquity of Graphs: How Set Systems Are Enriching Our World," Mathematics Department Colloquium, Berry College, Mount Berry

11/10/2012: "Hamilton Decompositions of Cayley graphs on Abelian Groups," Workshop on Group Actions on Graphs, Mississippi State University, Starkville

09/23/2012: "Alspach's Conjecture: Hamilton Decompositions of Certain 6-Regular Cayley Graphs on Abelian Groups of Even Order," Special Session on New Advances in Graph Theory, AMS Fall Eastern Sectional Meeting, Rochester Institute of Technology, Rochester

02/23/2010: "The Lovász Conjecture and Hamiltonian Cycle Decompositions," Mathematics and Statistics Department Colloquium, Kennesaw State University, Kennesaw

Contributed Talks & Posters.....

10/12/2018: "Implementing Mastery Grading in Undergraduate Mathematics," 2018 Research on Teaching and Learning (ROTL) Summit, Kennesaw State University, Kennesaw

03/06/2017: "The Hall spectrum of a graph can have non-consecutive zeros," 48th Southeastern International Conference on Combinatorics, Graph Theory and Computing, Florida Atlantic University, Boca Raton

06/07/2016: "Precoloring Extensions Using a Generalization of Hall's Marriage Theorem," SIAM Conference on Discrete Mathematics, Georgia State University, Atlanta

01/06/2016: "Hypergraphs in Ecological Network Analysis," AMS/MAA Joint Mathematics Meetings, Seattle

01/12/2015: "All Graphs are Hall $\Delta(G)$ -Completable," AMS/MAA Joint Mathematics Meetings, San Antonio

11/15/2014: "Decomposing Cayley digraphs into isomorphic directed trees", 3rd Annual Mississippi Discrete Mathematics Workshop, Mississippi State University, Starkville

05/16/2014: "Directed Tree Decompositions of Cayley Digraphs," 27th Cumberland Conference on Combinatorics, Graph Theory & Computing, West Virginia University, Morgantown

03/07/2014: "Bipartite Planar Graphs are Hall $\Delta(G)$ -Completable," 45th Southeastern International Conference on Combinatorics, Graph Theory and Computing, Florida Atlantic University, Boca Raton

01/06/2012: "Some Planar Hall Completable Graphs," AMS/MAA Joint Mathematics Meetings, Boston

01/06/2011: "Hall m -Completable Graphs," AMS/MAA Joint Mathematics Meetings, New Orleans

10/23/2010: "Hall's Condition and Partial Proper m -Colorings," 50th Midwest Graph Theory (MIGHTY L), University of Wisconsin, Superior

01/16/2010: "The Hamiltonian Decomposition Problem for Cayley Graphs on Abelian Groups, AMS/MAA Joint Mathematics Meetings, San Francisco

03/29/2009: "Hamiltonian Cycle Decompositions of 6-Regular Cayley Graphs on Finite Abelian Groups," 5th Graduate Student Combinatorics Conference, University of Kentucky Lexington

Campus Seminar Talks.....

11/09/2018: "Active Learning Techniques," Teaching Conversations Seminar, Joint Presentation with Lake Ritter and Jennifer Vandebussche, Kennesaw State University, Kennesaw

05/04/2018: "MATH 1190 Calculus 1 Course Redesign," Teaching Conversations Seminar, Kennesaw State University, Kennesaw

02/14/2017: "Connecting the Dots: Graph Theory in Complex Network Analysis," CSM Seminar, Kennesaw State University, Kennesaw

03/10/2016: "Hypergraphs in Ecological Network Analysis," Discrete Mathematics Seminar, Kennesaw State University, Kennesaw

04/09/2014: "Directed Tree Decompositions of Cayley Digraphs with Word-Degenerate Connection Sets," Algebra, Number Theory, and Discrete Mathematics (AND) Seminar, Kennesaw State University, Kennesaw

09/25/2013: "The Elusive Hamilton Problem for Cayley Graphs," Algebra, Number Theory, and Discrete Mathematics (AND) Seminar, Kennesaw State University, Kennesaw

09/19/2013: "Research Opportunities at KSU and Beyond," Panel Session, MathTALKS Seminar, Kennesaw State University, Kennesaw

01/24/2013: "Mathematics Research Panel," Panel Session, MathTALKS Seminar, Kennesaw State University, Kennesaw

03/15/2012: "Graphics and Bibliographies with \LaTeX ," MathTALKS Seminar, Kennesaw State University, Kennesaw

02/16/2012: "Introduction to the Language of \LaTeX ," MathTALKS Seminar, Kennesaw State University, Kennesaw

11/10/2011: "Chromatic Completability: Using the Marriage Theorem to Color Graphs," ScienceTALK Seminar, Kennesaw State University, Kennesaw

Teaching & Mentoring

All of the following courses had full instructor responsibilities.

Kennesaw State University.....

- o Graph Theory (for Ph.D. Analytics and Data Science program)
- o Discrete Mathematics (for Master of Arts in Teaching program)
- o Graph Theory (undergraduate level)
- o Modern Algebra II (Ring and Field Theory)
- o Modern Algebra I (Group Theory)
- o Enumerative Combinatorics
- o Discrete Mathematics I (Foundations of Mathematics, Elementary Combinatorics)
- o Linear Algebra I
- o Introduction to Logic, Set Theory, and Proofs (for Math Majors)
- o Discrete Mathematics (for Computer Science majors)
- o Calculus I (for Advanced Majors Program)
- o Calculus I

University of Wisconsin–Marshfield/Wood County.....

- o Calculus I
- o Mathematics for Elementary Teachers
- o Pre-Calculus Mathematics
- o Elementary Statistics
- o College Algebra

Michigan Technological University.....

- o Elementary Differential Equations (online)

- o Introduction to Combinatorics
- o Elementary Linear Algebra
- o Calculus with Technology II
- o Calculus with Technology I
- o Calculus for Life Sciences

Student Mentoring Activities

Learning Assistant Program

Supervisor

2017–2018

Supervised three undergraduate students employed as Learning Assistants for MATH 1190 Calculus 1 during Fall 2017, Spring 2018, and Fall 2018. This involved working closely with the students to prepare for assisting with the implementation of active learning pedagogy in my classes.

Undergraduate Research Project

Interval Edge Colorings of Cayley Graphs on Finite Groups

2015–2016

Developed and supervised an undergraduate research experience culminating in a student oral presentation at one national conference and one campus-wide symposium. The experience was separated across two sections of MATH 4699: Undergraduate Research.

Undergraduate Research Project

Tree Decompositions of Cayley Graphs and Digraphs with Word-Degenerate Connection Sets

2013–2014

Developed and supervised an undergraduate research experience culminating in a research manuscript published in a peer-reviewed journal and student oral presentation at three external conferences, one internal conference, one campus-wide symposium, and one department seminar. The experience was separated across two courses: MATH 4699: Undergraduate Research, MATH 4700: Capstone Experience

Honors Project Supervision

The Sylow Theorems

2014

Developed and supervised a standard Honors contract in a non-Honors course focusing on the Sylow theorems in Modern Algebra I.

Honors Project Supervision

Combinatorial Design Theory

2013

Developed and supervised a standard Honors contract in a non-Honors course focusing on combinatorial block designs in Discrete Mathematics I.

Miscellaneous

Common Exam Question Bank

Department of Mathematical Sciences, Michigan Technological University

2009

Contracted by department to develop a \LaTeX database of exam questions, solutions, and templates to be used by multiple-section courses in first and second-semester calculus.

Calculus 2 Course Coordinator

Department of Mathematical Sciences, Michigan Technological University

2009

Duties include organizing and leading instructor meetings for the twelve-section course, Calculus with Technology II; responsible for designing, keying, and providing a detailed grading rubric for the common Final Exam; overseeing/ensuring uniformity in the common grading of the Final Exam.

Grader for Ph.D.-level Course

Department of Mathematical Sciences, Michigan Technological University

2009

Duties include preparing solution key and grading papers for Topics in Commutative Algebra

Calculus 2 *Mathematica* Lab Course Coordinator

Department of Mathematical Sciences, Michigan Technological University

2008

Duties include collaborating with faculty in the design and implementation of *Mathematica* lab worksheets and *Blackboard* quizzes for all sections of Calculus with Technology II.

Service

Service at Kennesaw State University

Department Promotion and Tenure Committee

Member

2020–2022

Calculus 1 Course Coordinator

Department of Mathematics

2019–2020

Duties include maintaining a repository of course materials and active learning materials, design and maintain an online homework template in MyLab Math, holding instructor meetings, facilitating peer observation process for instructors

Faculty Search Committee

Member

2019–2020

College of Science and Mathematics Mentoring Program <i>Faculty Mentor</i>	2018–present
Department Faculty Council <i>Chair (2018–2019), Member (2017–2018)</i>	2017–2019
SEMINAL Grant Leadership Team <i>Member</i>	2018–2020
Ph.D. Analytics & Data Science Curriculum and Admissions Committee <i>Member</i>	2018
Course Strand Committees (Lower-Division Calculus; Discrete Mathematics; Algebra) <i>Member</i>	2018
Dissertation Committee <i>Member, Ph.D. Analytics & Data Science Program</i>	2017–2019
Discrete Mathematics Seminar (DMS) <i>Co-organizer</i>	2013–2018
Department Chair Search Committee <i>Member</i>	2017–2018
Faculty Search Committees <i>Chair (2015–2016), Member (2014–2015)</i>	2014–2016
M.S. Thesis Committee <i>Member (external), Master of Science in Integrative Biology Program</i>	2015–2016
Kennesaw Mountain Undergraduate Mathematics Conference Organizing Committee <i>Member</i>	2012 & 2017
Responsible for collecting/organizing talk titles and abstracts from participants; scheduling contributed talks; designing conference program, moderating sessions.	
Service at Other Institutions	
Student Leadership Selection Committee <i>Member, Department of Mathematics, University of Wisconsin-Marshfield/Wood County</i>	2011
High School Math League Competition Committee <i>Member, Department of Mathematics, University of Wisconsin-Marshfield/Wood County</i>	2011
Combinatorics, Algebra, and Number Theory Seminar <i>Co-organizer, Department of Mathematical Sciences, Michigan Technological University</i>	2009
Service to the Profession	
Referee & Reviewer	
<i>Selected Journals/Databases:</i>	
<ul style="list-style-type: none"> ○ <i>Australasian Journal of Combinatorics</i> ○ <i>Discrete Mathematics</i> (Elsevier) ○ <i>Journal of Combinatorial Designs</i> (Wiley) ○ <i>Journal of Graph Theory</i> (Elsevier) ○ <i>Mathematical Reviews</i> (American Mathematical Society) ○ <i>PRIMUS (Problems, Resources, and Issues in Mathematics Undergraduate Studies)</i> (Taylor & Francis Online) ○ <i>Theory and Applications of Graphs</i> 	
Project NExT Panel Session	
<i>Co-organizer, AMS/MAA Joint Mathematics Meetings</i>	2012
Invited panelists and moderated a panel session entitled "Building a Tenure Portfolio."	

Professional Development

2018: Student Success Initiative: Faculty Learning Community, "Active Learning in Calculus 1 and 2," College of Science and Mathematics, Kennesaw State University

2017–2018: Gateways To Completion: Faculty Learning Community, "Course Redesign Institute," Center for Excellence in

Teaching and Learning, Kennesaw State University

2013: PhD Summer School in Discrete Mathematics, University of Primorska and University of Ljubljana, Slovenia

2012: Project NExT Mini-Course, "Using Inquiry to Teach Mathematics and Thinking," MAA MathFest

2012: MAA Mini-Course, "Getting Students Involved in Undergraduate Research," AMS/MAA Joint Mathematics Meetings

2008: IMA-PI Summer Program for Graduate Students: "Linear Algebra and its Applications", Institute for Mathematics and Its Applications, Iowa State University, Ames

2007: IMA-PI Summer Program for Graduate Students: "Applicable Algebraic Geometry", Institute for Mathematics and Its Applications, Texas A&M University, College Station