2018 IL-IN-MI MAA Tri-Section Meeting
Talk abstracts available at http://bit.ly/IL-IN-MI-MAA-Abstracts
ALL TIMES CDT

	FRIDAY MARCH 23
8:30	**Registration**, Harre Union Atrium (registration will be open from 8:30 am until 6:30 pm) **Refreshments**, Union Ballrooms ABC, sponsored by Cengage Learning and Valparaiso University Provost's Office CENGAGE
9:30	**Opening Welcome**, Union Ballrooms ABC Prof. Jon Kilpinen, Dean of the College of Arts and Sciences, Valparaiso University MAA Section Representatives: Jon Johnson (IL), Krystina Leganza (IN), Steve Schlicker (MI)
9:45	**Plenary Address**, Union Ballrooms ABC Steve Butler, Iowa State University *The Mathematics of Juggling*
10:45	**Break** **Art Exhibit** and **Sculpture Build** begins, Atrium Overlook, David Reimann **Book sale**, Valpo Room (runs 10 am – 7 pm Friday, 9 am – 2 pm Saturday)

	Brown & Gold A	Brown & Gold B	Alumni	Heritage	CCLIR 205
11:00	Mindy Capaldi *When Mathematics and Politics Collide: Measuring Gerrymandering*	Hanson Hao* & Jake Sutter* *Classifying Symmetric Spaces for SO(3,p)*	Michael Dabkowski *On the numerical range of the product of a composition operator with the adjoint of a composition operator*	Allison Myhelic* *Oscillating sounds from drums and their formulas*	Project NExT Panel Steve Butler Allison Henrich Judy Holdener Jennifer Quinn Moderator: Manda Riehl *Encounters with Experiential Learning*
11:25	Lauren Keough *Extremal Lights Out*	Mitzi Cruz*, Joseph Schulte*, & Ethan Albany* *Driving Adoption to an Electric Future*	Paul Bialek *Euler's proof that every integer is the sum of four or fewer square fractions*	Alycia Holmes* *Zero Knowledge Proofs in Cryptography*	
11:50	Victor Piercey *The New Jim Crow: Using Social Justice to Teach Quantitative Literacy*	William Stowe* *On the Subsets of Spreads*	Wesley Calvert *Symmetry and Structure*	Isaac Dragomir* *The Square-Sum Sequence Problem*	

12:15	**Lunch**, Union Ballrooms ABC
1:30	**Plenary Address**, Union Ballrooms ABC Judy Holdener, Kenyon College *Homage to Emmy Noether: the Ideal Woman*

* - undergraduate student

		FRIDAY MARCH 23 (cont'd)			
	Brown & Gold A	Brown & Gold B	Alumni	Heritage	NSC 234
2:40	Trevor Richards *The infinite train*	Aaron Zerhusen *Euclid through the windows of Rosary College*	Adam Coffman *J-holomorphic curves in rough almost complex structures*	Jon Oaks *Bringing the STATS to I.N.D.I.A.N.A.*	Chris Edwards *The Scientech/Ball State University Summer Institute for Math and Science Teachers: An Overview*
3:05	Stephen Luecking *Conics in Gaudi's Palais Guell*	James Olsen *Some Rich Geometric Diagrams and Connecting the Mathematics Beneath*	Enrique Trevino *Counting perfect polynomials*	Jonathan Beagley *Using Cumulative Homework in Calculus Classes*	Jerry Woodward, Krystina Leganza, John Lorch, & Crystal Lorch *Designing and Implementing a Summer STEM Institute*
3:30	Dennis Collins *Toward thermodynamics of picture and other puzzle solving*	Claire Merriman *Using Geodesics to Generate Continued Fractions*	Rodney Lynch *How to Recover a Matrix from its Adjoint*	Grace McClurkin *Utilizing Mathematica for Higher Level Thinking in Multivariable Calculus*	John Drozd *Factoring - A Short Story at Its Roots*
3:55	Itai Seggev *Some subtleties of asymptotic approximations*	David Redman *Practical Origami Nanotube Construction Techniques*	Ellen Ziliak *Orbit Decompositions of the Generalized Symmetric Spaces of $SL_2(\mathbb{F}_q)$*	Commerial Presentation: Ashley Brozenac *Mathematica 11 in Education and Research*	Holly Summers *Indiana Summer STEM Institute Talks*

			NSC 224	NSC 234	CCLIR 205
4:30	**Student Competition** 4:00-4:20, meet in ballrooms ABC for instructions 4:30-6:30, various rooms		**Indiana Section Business Meeting**	**Illinois Section Business Meeting**	**Michigan Section Business Meeting**

5:30	**Reception**, President's Foyer, sponsored by the Valparaiso University Graduate School **Art Exhibit** and **Sculpture Build**, Atrium Overlook **Book sale**, Valpo Room (runs 10 am – 7 pm Friday, 9 am – 2 pm Saturday)

6:30	**Dinner**, Union Ballrooms
	  Student pizza party, Ballroom A
	  Banquet dinner & Awards Presentations, Ballrooms B&C

7:30	**Plenary Address**, Union Ballrooms ABC
	  Allison Henrich, Seattle University
	  It's All Fun and Games Until Somebody Becomes a Mathematician

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	SATURDAY MARCH 24 **ALL TIMES CDT**					
8:00	**Registration**, Harre Union Atrium (registration will be open from 8:00 am until 11:15 am) **Talk abstracts available at http://bit.ly/IL-IN-MI-MAA-Abstracts** **Refreshments**, Union Ballrooms ABC, sponsored by Cengage Learning and Valparaiso University Provost's Office				⬡ CENGAGE	
8:30	**Plenary Address**, Union Ballrooms ABC Michael Starbird, University of Texas at Austin *Geometric Gems*					

	Brown & Gold	Alumni	Heritage	NSC 224	NSC 234	CCLIR 261AB
9:45	Angela Antonou, Amanda Harsy, Dave Klanderman, & Rita Patel *Math Teachers' Circles: Professional Development Through Mathematical Problem Solving*	Stefano Chiaradonna* *The Dynamics of an Epidemiological Model for HPV with Partial Vaccination in a Heterogeneous Population*	G.E. Kuszewski* & K.J. Ware* *Concise Cyclotomic Sums*	Rebecca Robinson* *Chromatic Polynomials, Counterexamples, and Conjectures*	Ming-Jer Wang *A STEM Learning-Level-Enhancement Methodology for Long-Term Knowledge Retention*	Student Workshop Victor Piercey *Tic-Tac-Toe on Orientable and Non-Orientable Surfaces*
10:10	Aliza Steurer *How Inquiry Based Learning is Like Parenting*	Anthony Mendoza* *A Two-Prey, One-Predator Model with Age Structure and Impulsive Effects for Integrated Pest Management*	Melissa Pickett* *Teaching Velocity Problems*	Quinn Stratton* & Keller Dellinger* *Modeling DNA Self-Assembly Using Graph Theory, Linear Algebra, and Programming*	Elizabeth Clifford *Building student success through connections*	
10:35	Uditha Wijesuriya *Identification of the data distribution using a plot based on sample variance*	Linda Shaw* *Outside In*	Emily Sheetz* *Optimized Snapshot-based Visual Homing for UAVs*	Marko Saric* *Matrix Conditions On Iterated Function Systems That Generate A Fractal*	Michael C. Sostarecz *Using Linear Algebra and Probability to Solve Minesweeper*	

11:00	**Break** **Art Exhibit** and **Sculpture Build**, Atrium Overlook **Book sale**, Valpo Room (9 am – 2 pm Saturday)					
11:15	**Plenary Address**, Union Ballrooms ABC Michael Jones, Math Reviews, Editor of *Mathematics Magazine* *A Voting Theory Approach to Golf Scoring*					
12:15	**Lunch**, Union Ballrooms ABC					

* - undergraduate student

		SATURDAY MARCH 24 (cont'd)				
		Brown & Gold	Alumni	Heritage	NSC 224	NSC 234	Ballrms ABC
1:15		Johnathan Marquardt* *A partial characterization of the symmetric spaces of the 2nd-degree unitary group*	Christy Carlson* & Lauren Klamerus* *Analyzing and Comparing the Impact of Mastery-based Testing to Traditional Testing in Mathematics Courses*	Casey Koch LaRue* *Geometries from Groups*	Ranjan Rohatgi *Counting tilings of almost-hexagons*	Tanweer Shapla *Sampling Distribution and Simulations of the Sampling Distribution of the Mean: Misconceptions and Beyond*	Michael Starbird

Workshop (1:15-3:15)

Inquiry-Based Learning: Math and Beyond

Sponsored by the IBL SIGMAA |
| 1:40 | | Heather Ray* *Graph Theoretical Design Strategies for Modeling Self-Assembling DNA* | Michael Barz* *Unimodular Roots and Arithmetic Progressions* | Christopher St. Clair* *An Induced Labeling of Grid Graphs* | Alexis Byers *On k-Rainbow Colorings of Graphs* | Khairul Islam *Public Use Cancer Data for Teaching and Research* | |
| 2:05 | | Monica McGrath* *A Fast-Slow Dynamical System Model of Addiction: Predicting Relapse Frequency* | Brandon Joutras* & Adrian Siwy* *Using Artificial Intelligence and Linear Algebra Methods to Improve Predictive Modeling and Analysis of Sports Data* | Mikaela Wyatt* *A San Gaku Pentagon* | Drake Olejniczak *A Bipartite Party Problem* | Matthew DeMoss *Power of Transformation in Statistical Inference: An Empirical Evaluation* | |

2:30	2:30-2:45		2:30-3:20 CCLIR 205			
	Break **Art Exhibit** and **Sculpture Build**, Atrium Overlook		**Student Game Show**			
2:45	Brown & Gold	Alumni	Heritage	NSC 224	NSC 234	
	Kelly Currie *Embedded Tutors Within The Mathematical Classroom*	Chris Tweddle *Modeling and simulation of a bicycle race*	Michael Xue *Refuting a Conjecture On $x^n - 1$ Using a Computer Algebra System*	Xuan "Shwan" Ma *Identify At-Risk students using Predicative Modeling*	Bir Kafle *Conjugation in S_n and connections with number fields*	

3:15	**Break; Art Exhibit** and **Sculpture Build**, Atrium Overlook
3:30	**Student Awards Presentation**, Union Ballrooms ABC
3:45	**Plenary Address**, Union Ballrooms ABC Jennifer Quinn, University of Washington-Tacoma *Digraphs and Determinants: Determinants through Determined Ants*

* - undergraduate student

2018 IL-IN-MI Tri-Section Meeting Volunteers

Local Arrangements Committee	**Registration and Abstracts**	**Program Committee**
Paul Drube, Valparaiso University (IN) Tiffany Kolba, Valparaiso University (IN) Ken Luther, Valparaiso University (IN) Daniel Maxin, Valparaiso University (IN) Zsuzsanna Szaniszlo, Valparaiso University (IN)	Josh Holden, Rose-Hulman Institute of Technology (IN) Adam Coffman, Indiana University – Purdue University Fort Wayne (IN)	Matt Boelkins, Grand Valley State University (MI) Tim Comar, Benedictine University (IL) Victor Piercey, Ferris State University (MI) Andy Rich, Manchester University (IN)
Student competition	**Student workshop & IBL Workshop**	**Student game show**
Paul Fonstad, Franklin College (IN) Daniel Maxin, Valparaiso University (IN) Andy Rich, Manchester University (IN)	Victor Piercey, Ferris State University (MI)	Paul Fonstad, Franklin College (IN)
Art exhibit	**Project NExT**	**T-shirt design**
David Reimann, Albion College (MI) Joshua Holden, Rose-Hulman Institute of Technology (IN)	Livia Hummel, University of Indianapolis (IN) Tiffany Kolba, Valparaiso University (IN) Manda Riehl, Rose-Hulman Institute of Technology (IN) Ellen Ziliak, Benedictine University (IL)	Benjamin Levandowski*, Valparaiso University (IN)

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