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Current Position

Aug 2013 – Present Assistant Professor of Mathematics,
Kutztown University of Pennsylvania, Pennsylvania, USA.

Education

Sep 2008 – Jun 2013 Ph.D. in Mathematics,
California Institute of Technology, California, USA.

Sep 2004 – Jun 2008 B.Sc. in Mathematics with First Class Honors,
Chinese University of Hong Kong, Hong Kong.

Peer-Reviewed Publications

1. (Published in Feb 2017)
“Paired many-to-many disjoint path covers of hypertori,”
Brian Kronenthal and Tony W. H. Wong,
Discrete Applied Mathematics **218** (2017), 14-20.
2. (Published in Jun 2014)
“Integrality of relative BPS state counts of toric Del Pezzo surfaces,”
Michel van Garrel, Tony W. H. Wong, and Gjergji Zaimi,
Communications in Number Theory and Physics **7** (2013), 671-687.
3. (Published in May 2014)
“Diagonal forms and zero-sum (mod 2) bipartite Ramsey numbers,”
Tony W. H. Wong,
Journal of Combinatorial Theory, Series A **124** (2014), 97-113.
4. (Published in Jan 2014)
“Diagonal forms of incidence matrices associated with t -uniform hypergraphs,”
Richard M. Wilson and Tony W. H. Wong,
European Journal of Combinatorics **35** (2014), 490-508.
5. (Published in Jul 2013)
“Algebraic techniques in designing quantum synchronizable codes,”
Yuichiro Fujiwara, Vladimir D. Tonchev, and Tony W. H. Wong,
Physical Review A **88** (2013), 012318.

6. (Published in Mar 2007)
“Intersecting families in the alternating group and direct product of symmetric groups,”
Cheng Yeaw Ku and Tony W. H. Wong,
Electronic Journal of Combinatorics **14** (2007), #R25.

Other Published Work

1. (Published in Feb 2016)
“Flow Free on a torus,”
Brian Kronenthal and Wing Hong Tony Wong,
*Math Horizons** **23.3** (2016), 2.
* This is an article written for undergraduate readers, solicited by the Chief Editor of the journal *Math Horizons*.
2. (Published in Dec 2015)
Integer sequences A265919 and A265920,
Wing Hong Tony Wong and Jiao Xu**,
On-Line Encyclopedia of Integer Sequences (OEIS), URL: <https://oeis.org/A265919>,
<https://oeis.org/A265920>.
** Jiao Xu is an undergraduate student at Kutztown University.

Articles Review for Mathematical Reviews / MathSciNet

- Jul 2016 Linear Algebra and its Applications, “*Relating p -adic eigenvalues and the local Smith normal form*”.
- Jan 2016 Linear Algebra and its Applications, “*Sinkhorn normal form for unitary matrices*”.
- Aug 2015 Discrete Applied Mathematics, “*On equienergetic signed graphs*”.
- Mar 2015 Linear and Multilinear Algebra, “*Trace index of a $(0, 1)$ -matrix*”.
- Dec 2014 Australian Journal of Combinatorics, “*A note on packing spanning trees in graphs and bases in matroids*”.
- Jul 2014 Discrete Mathematics, “*Ramsey-minimal saturation numbers for matchings*”.

Papers Refereed

- May 2014 Advances and Applications in Discrete Mathematics, “*The distribution of Ramsey numbers*”.
- Apr 2014 Electronic Journal of Combinatorics, “*More on Wilson $W_{tk}(v)$ Matrices*”.

Research with Undergraduate Students

- Jul 2015 – Present Jiao Xu
- *She received the Carole and Ray Neag Undergraduate Research Fund (\$1,500) from the College of Liberal Arts and Sciences to continue working on this project over the Summer 2016.*
 - *She presented the project externally in the Fall Meeting of the Eastern Pennsylvania and Delaware (EPaDel) Section of the Mathematical Association of America (MAA) at Delaware Valley University, Doylestown, PA.*
 - *She presented the project internally in the Math Club Meeting, Discrete Mathematics Seminar, and the Third Annual Larry R. Mugridge Symposium on Undergraduate Mathematics Research.*
 - *We submitted two integer sequences to the On-Line Encyclopedia of Integer Sequences (OEIS).*
 - *We submitted one paper to the Journal of Integer Sequences.*
- May 2016 – Present Diego Manzano-Ruiz
- *This project is supported by the Kutztown University Bringing Experiences About Research in Summer (KU BEARS) Grant.*
 - *He presented the project externally in the 3rd Annual PASSHE Undergraduate Research Conference in Science, Technology, Engineering and Mathematics at Millersville University, Millersville, PA.*

Grants and Fellowships

- May 2016 – Sep 2016 Kutztown University Bringing Experiences About Research in Summer (KU BEARS). (\$2000)
- Jan 2015 – May 2015 Grant for developing an Inquiry-Based Learning (IBL) course, sponsored by the Educational Advancement Foundation (EAF) through the Academy for Inquiry-Based Learning (AIBL). (\$1500)
- Oct 2014 Travel Grant to the DIMACS Conference on “Challenges of Identifying Integer Sequences”, sponsored by National Science Foundation (NSF) through the Center for Discrete Mathematics and Theoretical Computer Science at Rutgers University (DIMACS). (Approx. \$700)
- Sep 2008 – Jun 2011 Sir Edward Youde Memorial Fellowship for Overseas Studies, sponsored by Sir Edward Youde Memorial Fund Council. (Approx. \$36,300 per year)

Awards and Recognition

- Feb 2016 Sponsored Programs Recognition for having received a Grant Award from an External Sponsor in Fiscal Year 2015.
- Feb 2015 Sponsored Programs Recognition for having submitted a Grant Proposal to an External Sponsor in Fiscal Year 2014.
- Jun 2012 Scott Russell Johnson Prize for Excellence in Graduate Teaching.
- Jun 2010 Apostol Award for Excellence in Teaching in Mathematics.

Scholarly Presentations at National / International Conferences

- Jan 2017 Joint Mathematics Meetings, Seattle, WA.
- *When "Flow Free" is played on a torus.*
- Jun 2016 SIAM Conference on Discrete Mathematics, Atlanta, GA.
- *Diagonal forms of incidence matrices arising from bipartite graphs and applications to zero-sum Ramsey problems.*
- Jan 2016 Joint Mathematics Meetings, Seattle, WA.
- *Diagonal forms and zero-sum (mod 2) bipartite Ramsey numbers.*
- Aug 2015 Mathematics of Various Entertaining Subjects (MOVES) Conference, National Museum of Mathematics, New York, NY.
- *Paired many-to-many disjoint path covers of cuboids.*
- Jan 2015 Joint Mathematics Meetings, San Antonio, TX.
- *Constructing matroids with fixed parameters.*
- Oct 2014 DIMACS Conference on Challenges of Identifying Integer Sequences, DIMACS Center, Rutgers University, New Brunswick, NJ.
- *Diagonal forms of some integer matrices.*
- Jun 2014 SIAM Conference on Discrete Mathematics, Minneapolis, MN.
- *On the number of bases in a matroid.*
- Jan 2013 Joint Mathematics Meetings, San Diego, CA.
- Jun 2012 SIAM Conference on Discrete Mathematics, Halifax, Canada.
- Sep 2011 European Conference on Combinatorics, Graph Theory and Applications, Budapest, Hungary.

Scholarly Presentations at Regional Conferences / Seminars

- Nov 2016 Jointly-Organized Fall Meeting of the Eastern Pennsylvania and Delaware (EPaDel) and New Jersey (NJ) Sections of the Mathematical Association of America (MAA), Villanova University, Villanova, PA.
- *A two-person graph coloring game.*
- Jul 2016 Research Experiences for Undergraduates (REU), Muhlenberg College, Allentown, PA.
- *An integer sequence arising from chip collecting.*
- Nov 2015 Fall Meeting of the Eastern Pennsylvania and Delaware (EPaDel) Section of the Mathematical Association of America (MAA), Delaware Valley University, Doylestown, PA.
- *Playing "Flow Free" on different boards.*
- Apr 2015 The Pennsylvania State System of Higher Education Mathematics Association (PASSHE-MA) Conference, Kutztown University of Pennsylvania, Kutztown, PA.
- *Ramsey theory and some variations.*
- Mar 2015 Spring Meeting of the Eastern Pennsylvania and Delaware (EPaDel) Section of the Mathematical Association of America (MAA), Franklin and Marshall College, Lancaster, PA.
- *Existence of matroids with specific size, rank, and number of bases.*
- Apr 2014 The Pennsylvania State System of Higher Education Mathematics Association (PASSHE-MA) Conference, Lock Haven University of Pennsylvania, Lock Haven, PA.
- *Building matroids with special constraints.*
- Dec 2013 Discrete Mathematics Seminar, University of Delaware, Newark, DE.
- *A problem on matroid theory by Dominic Welsh.*
- Feb 2013 Combinatorics Seminar, UCSD, San Diego, CA.
- Jul 2012 Toronto Set Theory Seminar, Fields Institute, Toronto, Canada.
- Mar 2012 WilsonFest – a Conference in honor of Rick Wilson, Caltech, Pasadena, CA.

Internal Scholarly Presentations

- Sep 2014 Discrete Mathematics Seminar.
- *From Flow Free to disjoint path covers.*

- Apr 2014 Mathematics Colloquium.
 - *Catalan numbers.*
- Nov 2013 Discrete Mathematics Seminar.
 - *A problem on matroid theory by Dominic Welsh.*
- Oct 2013 Discrete Mathematics Seminar.
 - *Some interesting problems in combinatorics.*
- Apr 2013 Mathematics Colloquium.
 - *Zero-sum Ramsey theory.*
- May 2011 Combinatorics Seminar, Caltech, Pasadena, CA.

Other Conferences Attended

- Nov 2016 PASSHE Undergraduate Research Conference in Science, Technology, Engineering and Mathematics, Millersville University of Pennsylvania, Millersville, PA.
- Apr 2016 Spring Meeting of the Eastern Pennsylvania and Delaware (EPaDel) Section of the Mathematical Association of America (MAA), Muhlenberg College, Allentown, PA.
- Oct 2014 Fall Meeting of the Eastern Pennsylvania and Delaware (EPaDel) Section of the Mathematical Association of America (MAA), University of the Sciences, Philadelphia, PA.

Service Highlights

- Oct 2014 – Apr 2015 **Co-Chief Organizer** (with Dr. Brian Kronenthal) of the Pennsylvania State System of Higher Education – Mathematics Association (PASSHE-MA) Conference on Apr 10–11, 2015 at Kutztown University of Pennsylvania.
- Aug 2013 – Present **Founder and Trainer** of the Mathematics Team at Kutztown University of Pennsylvania.
 - Form a Mathematics Team consisting of 6 to 8 students.
 - Have regular meetings every week (5 hours per week in the Fall, 3 hours per week in the Spring).
 - Develop training materials.

Selected Competition results

- Nov 2016 Lehigh Valley Association of Independent Colleges Mathematics Competition
- *Nathaniel Benjamin, David Foley, and Jacob McCann won the Champion among 15 teams.*
 - *Brooke Eshbach, Grant Fickes, and Diego Manzano-Ruiz ranked 4th.*
- Dec 2015 The William Lowell Putnam Mathematics Competition
- *Kevin Ruppert achieved the 78th percentile (ranked 945 out of 4275 contestants).*
- Oct 2015 Virginia Tech Regional Mathematics Contest
- *GuoZhi Zhang achieved the 74th percentile (ranked 184 out of 701 contestants);*
 - *Michael Bosetti and Kevin Ruppert achieved the 55th percentile (ranked 317 out of 701 contestants).*
- Dec 2014 The William Lowell Putnam Mathematics Competition
- *Adriana Kaplan and Jacob Kramer achieved the 46th percentile (ranked 2333.5 out of 4320 contestants);*
 - *Nathaniel Benjamin achieved the 38th percentile (ranked 2662 out of 4320 contestants).*
- Oct 2014 Virginia Tech Regional Mathematics Contest
- *Kevin Ruppert achieved the 75th percentile (ranked 196 out of 786 contestants).*
- Dec 2013 The William Lowell Putnam Mathematics Competition
- *Andrew Seligman achieved the 54th percentile (ranked 1880.5 out of 4113 contestants).*

Service at University Level

- Aug 2016 – Present At-Large Faculty Representative to the University Senate.
- Member of the Financial Aid Committee.
- Jun 2016 Participated in Discussions with Woodrow Wilson Foundation Representatives.
- Oct 2015 – Present Member of the International Advisory Council.

- Oct 2015 Participated in the Fall 2015 Willingness-to-Serve appointment process.
- Aug 2015 – Present Member of the Institutional Climate Committee.
- Jan 2015 – Apr 2016 Member of the University Senate Ad Hoc Task Force on Faculty and Staff Retention.
- Apr 2014 Participated in the Spring 2014 Willingness-to-Serve appointment process.

Service at College Level

- Oct 2016 Science, Technology, and Math Open House organized by the College of Liberal Arts and Sciences.
- Apr 2016 Science, Technology, and Math Open House organized by the College of Liberal Arts and Sciences.
- Jan 2016 – Present Member of the College and Liberal Arts and Sciences Assessment Committee.
- Oct 2015 Science, Technology, and Math Open House organized by the College of Liberal Arts and Sciences.
- Apr 2015 Science, Technology, and Math Open House organized by the College of Liberal Arts and Sciences.
- Apr 2014 Science, Technology, and Math Open House organized by the College of Liberal Arts and Sciences.

Service at Department Level

- Aug 2016 – Present Co-Chair of the Outreach Committee.
- Member of the General Education Committee.
- Member of the Program Review Committee.
- Member of the Promotion, Evaluation, and Tenure (PET) Committee.
- Member of the Recruitment Committee.
- Member of the Tenure-track Search Committee.

Aug 2015 – May 2016 Chair of the Outreach Committee.

- *Developed the Kutztown Appreciation of Mathematics Program (KAMP) for grade school students.*
- *Visited Fleetwood Area High School for classroom demonstration.*

Co-Chair of the Communications Committee.

Co-Organizer (with Dr. Pdraig McLoughlin) of the Third Annual Larry R. Mugridge Symposium on Undergraduate Mathematics Research.

Developed Mathematics Game Time for undergraduates with Dr. Brian Kronenthal, Dr. Eric Landquist, and Dr. Amy Lu.

Member of the General Education Assessment Committee.

Member of the Math Subgroup.

Member of the Placement Committee.

Member of the Promotion, Evaluation, and Tenure (PET) Committee.

- *Provide peer evaluations for two temporary faculty members.*

Member of the Recruitment Committee.

Member of the Retention Committee.

Aug 2014 – May 2016 Co-Organizer (with Dr. Brian Kronenthal) of the Problem of the Week Competition.

Aug 2014 – May 2015 Chair of the Colloquium Organizing Committee.

Member of the Contests Committee.

Member of the Master's Program Committee.

Member of the Math Subgroup.

Member of the Placement Committee.

Member of the Recruitment Committee.

Member of the Retention Initiatives Committee.

Member of the Sequencing, Offerings, and Program Review Committee.

Aug 2013 – May 2014 New Course Development:
MAT 300 – Problem Solving in Mathematics (approved by UCC).

New Course Development:
MAT 123 – Discrete Mathematics (approved by UCC, and is offered as
a course in the Honors program).

Co-Organizer (with Dr. Padraig McLoughlin) of the First Annual Larry
R. Mugridge Symposium on Undergraduate Mathematics Research.

Member of the Math Subgroup.

Member of the Master's Program Committee.

Substitutes for Department Members in Committees at the University and College Level

Sep 2016 Substituted for Dr. Eric Landquist in the College of Liberal Arts and
Sciences Curriculum Committee.

Dec 2015 Substituted for Dr. Padraig McLoughlin in the University Senate.

Student Organization

Aug 2014 – Present Faculty Advisor of Math Club.

Service in External Professional Organizations

Oct 2014 – Present Treasurer of the Pennsylvania State System of Higher Education –
Mathematics Association (PASSHE-MA).

Aug 2015 Potential Collaboration with Lafayette College REU Site Program.

Jun 2014 – Present Reviewer for Mathematical Reviews.

Moderators in Conferences

Jun 2016 Session Chair at the SIAM Conference on Discrete Mathematics,
Atlanta, GA.

Jan 2016 Moderator at the Joint Mathematics Meetings, Seattle, WA.

Aug 2015 Moderator at the Mathematics of Various Entertaining Subjects
(MOVES) Conference, New York, NY.

Jan 2015 Moderator at the Joint Mathematics Meetings, San Antonio, TX.

Participations in Assessments and Studies

Dec 2015 General Education Assessment at Kutztown University.

Sep 2015 – Dec 2015 Research Study conducted by the University of Colorado Boulder.

Service at Community Level

Aug 2016 Move In Volunteer at Kutztown University of Pennsylvania.

Apr 2016 Faculty Volunteer in “The Walking in the Shoes Of” (W.I.T.S.O) Program, organized by the Kutztown University Frederick Douglass Institute.

Mar 2016 Judge at the CE Pennsylvania Science Olympiad Tournament.

Feb 2016 Judge at the 82nd Pennsylvania Junior Academy of Science Region #3 Meeting.

Apr 2015 Faculty Volunteer in “The Walking in the Shoes Of” (W.I.T.S.O) Program, organized by the Kutztown University Frederick Douglass Institute.

Feb 2015 Judge at the 81st Pennsylvania Junior Academy of Science Region #3 Meeting.

Nov 2014 Referee for the Hang Lung Mathematics Award 2014 in Hong Kong.

Mar 2014 Judge at the CE Pennsylvania Science Olympiad Tournament.

Feb 2014 Judge at the 80th Pennsylvania Junior Academy of Science Region #3 Meeting.

Sep 2008 – Jun 2013 Volunteer at the Rise Program at California Institute of Technology (a low-cost afterschool math and science-focused tutoring program).

Academic Improvement

2014 – 2015 Member of the Project NExT (New Experiences in Teaching) in the Eastern Pennsylvania and Delaware Section of the Mathematical Association of America.

College of Liberal Arts and Sciences Faculty Advising Workshop (Fall 2014).

2013 – 2014

Inquiry-Based Learning Workshop, organized by Academy of Inquiry Based Learning (4-day workshop in Summer 2014)

DO-IT *Prof* Online Course on Accommodating Students with Disabilities (12-week online course in Spring 2014).

College of Liberal Arts and Sciences Faculty Advising Workshop (Fall 2013).

Courses Taught

Kutztown

MAT 106 (Trigonometry),
MAT 115 (Precalculus Mathematics),
MAT 121 (Mathematics for Business and Information Science),
MAT 123 (Discrete Mathematics),
MAT 260 (Linear Algebra),
MAT 300 (Problem Solving in Mathematics) – Individualized Instruction,
MAT 431 (Topology) – Individualized Instruction,
MAT 460 (Linear Algebra II) – Individualized Instruction.

Chinese University
of Hong Kong

MATH 2010 (Advanced Calculus I).

Caltech

Instructor:

Ma 1d (Calculus – Sequences and Series),
Ma 17 (How to Solve It).

Lead Teaching Assistant:

Ma 1b (Linear Algebra – Analytical Track),
Ma 1c (Calculus of Several Variables – Analytical Track).

Teaching Assistant:

Ma 1a (Calculus),
Ma 1b (Linear Algebra – Practical Track),
Ma 6a (Introduction to Discrete Mathematics – Combinatorics),
Ma 6b (Introduction to Discrete Mathematics – Graph Theory),
Ma 6c (Introduction to Discrete Mathematics – Logic),
Ma 121a,b (Combinatorial Analysis I & II).

Memberships of Professional Societies

Jul 2014 – Present Society for Industrial and Applied Mathematics (SIAM).

Sep 2008 – Present American Mathematical Society (AMS).