Éva Czabarka
Resume

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	Columbia, SC 29208	**Homepage:**	http://people.math.sc.edu/czabarka/

Degrees:

1998   Ph.D. in Mathematics, University of South Carolina, Columbia.
Shifting Technique in Finite Vector Spaces. Thesis advisor: Jerrold Griggs.

1991   M.S. in Mathematics, József Attila University, Szeged, Hungary.
Bin Packing Algorithms. Thesis advisor: Gábor Galambos

Education (non-degree):

Fall 2003   Nonparametric Statistics course at the Foundation for Advanced Education in the Sciences Graduate School at the National Institutes of Health (NIH)

Oct 2001   Computational Genomics course at Cold Spring Harbor Laboratory, Cold Spring Harbor.

Fall 2000   Evolutionary Biology course at FAES Graduate School at NIH

1998-1999   M.S. studies in Statistics at the University of South Carolina, Columbia (coursework only).

1988-1990   Member of the Eötvös Kollégium (Honors College) of József Attila University, Szeged, Hungary.

Work Experience:

2012-now   Tenured Associate Professor, Dept. of Math., University of South Carolina, Columbia, SC

2006-2012   Tenure Track Assistant Professor, Dept. of Math., University of South Carolina, Columbia, SC

2004-2006   Tenure Track Assistant Professor, Dept. of Math., College of William & Mary, Williamsburg, VA

2001-2004   Research Fellow at the National Center for Biotechnology Information (NCBI), National Library of Medicine, National Institutes of Health, Bethesda, MD.

2000-2001   Visiting Fellow at NCBI, NLM, NIH, Bethesda, MD.

1991-2000   Graduate Teaching Assistant at the Department of Mathematics, University of South Carolina, Columbia.

Aug 1996   Internship at Mosaic Computing Incorporated, Columbia, SC.

Research Support (Grants, Fellowships):

10) 2016-2017 Mathematrics Research Communities Workshop: Beyond Planarity: Crossing Numbers of Graphs, co-PI, co-PIs: S. Fernández-Merchant(CSU Math), G. Salazar (San Luis Potosi, Math), M. Scaefer (DePaul Math), L.A. Székely (USC Math)

9) 2015 Twenty-Eighth Cumberland Conference on Combinatorics, Graph Theory and Computing, NSF, co-PI; PI: Linyuan Lu (USC Math)

8) 2015 Visiting professor - University of Minnesota: Discrete Structures: Analysis and Application, University of Minnesota/NSF

7) 2014-2015 Ensemble-based Modeling of Large Graphs and Its Application to Social Networks, DARPA GRAPHS, Phase II (15 months) co-PI in the USC subcontract with L.A. Székely (USC Math), PI: Z. Toroczkai (UND Physics/CSE) (15 months) Other co-PI-s: K.E. Bassler (UH Physics), N.V. Chawla (UND CSE), G. Korniss (RPI Physics)

6) 2014-2017 Internationalization — a Pillar of Development of the University of Maribor, European Union and the government of Slovenia, foreign collaborator, PI: Drago Bokal (Maribor, Slovenia)

5) 2012-2013 Ensemble-based Modeling of Large Graphs and Its Application to Social Networks, DARPA GRAPHS, Phase I (15 months) co-PI in the USC subcontract with L.A. Székely (USC Math), PI: Z. Toroczkai (UND Physics/CSE) Other co-PI-s: K.E. Bassler (UH Physics), N.V. Chawla (UND CSE), P.L. Erdős (Rényi), G. Korniss (RPI Physics), I. Miklós (Rényi)

4) 2010-2011 Extremal combinatorics and biological applications of combinatorics: Promising Investigator Research Award, Track 1, Office of Research and Graduate Education, University of South Carolina

3) Hungarian Bioinformatics: Marie Curie Fellowships at the Rényi Institute of Mathematics of the Hungarian Academy of Sciences 2007-2010 (2 month in each summer, a total of 8 month)

2) Administrative Supplement: Phylogenetic Analysis with Complex Genome Rearrangement Events (2009-2010) by NIH NIGMS 3 R01 GM078991-03S1, co-I, PI: J. Tang (USC CSE), co-I's: L.A. Székely (USC Math) and T.J. Vision (UNC Biology)

1) Travel grants to:

    (ii) Babai is 60 Conference, Ohio State University, Columbus, Ohio, March 2010

    (i) Trotter is 65 Conference, Georgia Tech, Atlanta, May 2008

Invited and Supported Participant (Workshop/Conference/Special Program)

13) 31st Clemson Mini-Conference on Discrete Mathematics and Algorithms, Clemson, SC, Oct 21 2016

12) International conference on current trends in graph theory and computation South Asian University New Delhi, India, Sept 11-19, 2016

11) A New Era of Discrete and Computational Geometry Monte Veritá, Ascona (inviation only conference at the Congressi Stefano Franscini conference center of ETH Zurich), Switzerland, June 26-July 1 2016

10) Intersectionfest (plenary speaker) Virginia Commonwealth University March 7-9, 2016

9) 29th Midwestern Conference on Combinatorics & Combinatorial Computing (plenary speaker) College of Charleston, Oct 17-19, 2015

8) Institute of Mathematics and Applications Special Year in Discrete Structures, University of Minnesota, Spring Semester 2015, including invited workshops

- Convexity and Optimization: Theory and Applications February 23-27, 2015

- Information Theory and Concentration Phenomena April 13-17, 2015

7) NSF-CBMS Conference on Mathematical Phylogenetics, Winthrop University, Rockhill, SC June 2014

6) Combinatorial Optimization Approaches to Graph Crossing Numbers, Maribor, Slovenia, June 2014

5) Exact Crossing Numbers Workshop, American Institute of Mathematics, Palo Alto, California, April 2014

4) Search Methodologies III Bielefeld, Germany, September 3-7, 2012

3) Mathematical Physics of Complex Networks: from Graph Theory to Biological Physics, Max-Planck-Institut für Physik komplexer Systeme, Dresden, Germany, May 2012

2) BIRS Workshop Crossing Numbers Turn Useful, Banff, Canada, August 21-26 2011

1) Hypergraph Turán Workshop, American Institute of Mathematics, Palo Alto, California, March 2011

Awards:

2008	Two Thumbs Up Award (student nominated award given by the USC's Student Disability Services)
2004	Performance Bonus Award for year 2003 at NCBI
2003	Performance Bonus Award for year 2002 at NCBI.
2002	Performance Bonus Award for year 2001 at NCBI.

Dates of Longer Research Visits without Employment:

Dec 2014	1 month in South Africa, visiting the Universities of Johannesburg and Stellenbosch
May 2014	1 month at the Rényi Institute of Mathematics, Budapest, Hungary
March 2014	2 weeks at the Department of Mathematics, University of Florida, Gainsville, FL
Feb 2014	2 weeks at the Department of Physics, University of Houston, TX
Dec 2013	2 weeks in China (Tongji University in Shanghai, Zhejiang University in Hongzhu, Nanjing Normal University in Nanjing)
Aug-Nov 2013	3 months at the Interdisciplinary Center for Network Science & Applications, University of Notre Dame, IN
June 2013	40 days at the Rényi Institute of Mathematics, Budapest, Hungary
June 2011	2 weeks at the University of East Anglia, Norwich, and at the Isaac Newton Institute, University of Cambridge
Dec 2010	1 month at the Bioinformatics Research Centre, University of Canterbury, NZ
Sep-Nov 2010	3 months at the Institut für Diskrete Mathematik in Bonn, Germany
Dec 2007-Jan 2008	3 weeks in South Africa, University of Kwa-Zulu Natal and Stellenbosch University
May-June 2006	1 month at the Department of Computer Science, Loughborough University, UK
May-June 2005	1 month at the Department of Computer Science, Loughborough University, UK
May-June 2004	1 month at the Department of Computer Science, Loughborough University, UK

Short Research Visits (without a talk):

Oct 2010	4 days at Technische Universität Braunschweig, Germany
Aug 2010	5 days at the Institute of Mathematics, Slovak Academy of Sciences, Bratislava
July 2010	1 week at the University of Maribor, Slovenia
May 2010	3 days at the Institute of Mathematical Biosciences, Columbus, Ohio
July 2009	5 days at the Institute of Mathematics, Slovak Academy of Sciences, Bratislava
July 2008	3 days at the Institute of Mathematics, Slovak Academy of Sciences, Bratislava
June 2007	2 days at the National Evolutionary Synthesis Center, Durham, NC

Teaching Experience:

Courses taught include:

- Basic College Mathematics
- Precalculus Mathematics
- Calculus for Business Adm. & Social Sciences
- Finite Mathematics
- Discrete Mathematics for Computer Science
- Basic Concepts of Elementary Mathematics
- Elementary Probability and Statistics
- Advanced Applied Statistics
- Calculus I
- Vector Calculus

- Differential Equations
- Transition to Advanced Mathematics
- Foundations of Mathemarics (major course)
- Abstract Algebra (major course)
- Discrete Mathematics (major/honors course)
- Discrete Geometry (graduate course)
- Discrete Mathematics I (graduate course)
- Discrete Mathematics II (graduate course)
- Graph Theory I (graduate course)
- Graph Theory II (graduate course)

Ph.D. student Virginia Johnson led two undergraduates in an REU in Summer 2012 under my supervision; one of them, Chanequa Roy won best presentation award in her category. Taught preparatory seminars for the National Teacher's Examination (NTE); gave outreach talks (see talks for general audience). Has been cited by at least one graduate of the University of South Carolina as a teacher who significantly contributed to his/her success. Individual work with a talented undergraduate at the College of William & Mary

Graduate Students and Postdoctortal Advisees:

Postdoctoral Advisees:

- Aaron Dutle, 2012-2014 (co-advising with L.A. Székely), became research computer scientist at Langley Research Center, NASA

Ph.D. students:

- Inne Singgih, current
- Garner Cochran, current
- Mojca Bračič, University of Maribor, Slovenia, co-advising with Drago Bokal
- Virginia Johnson, Aug 2012 *Enumeration Results on Leaf-Labeled Trees*, tenure track job at Columbia College, Columbia SC

M.S. students:

- Joe Hidakatsu, May 2016, *Structure of the Stable Marriage and Stable Roommate Problems and Applications*, moved to Japan to teach English.
- Clifford Gaddy, Aug 2013, *Spectral Analysis of Randomly Generated Networks with Prescribed Degree Sequences*, studying at the School of Medicine at Tulane University.
- Kevin Hathcock, Aug 2012 *Phylogenetic Tree Inferences Using Quartet Splits*, moved to North Carolina to teach as instructor in college/high school.
- Tatiana Orlova, Aug 2010, *Mathematical Models, Algorithms and Statistics of Sequence Alignment*, went to obtain Ph.D. in computer science at the University of Chicago.

- Charles Cavalier, Aug 2009, *Graceful Labelings*, went to obtain M.S. in Information Systems and Decision Sciences at E.J. Ourso College of Business, Lousiana State University, and became a Sr. Associate Analytical Consultant at the SAS institute.
- Ivan Haynes, Dec 2008, *Analysis of generalized Sudoku puzzles: A mixture of discrete techniques*, instructor at the University of South Carolina.

Publications:

31) É. Czabarka, J. Rauh, K. Sadeghi, T. Short, L.A. Székely, On the Number of Non-zero Elements of Joint Degree Vectors, *submitted*

30) É. Czabarka, L.A. Székely, S. Wagner, Inducibility in binary trees and crossings in random tanglegrams *in submitted*

29) É. Czabarka, L.A. Székely, S. Wagner, Paths vs. stars in the local profile of trees *in submitted*

28) É. Czabarka, L.A. Székely, S. Wagner, On the number of nonisomorphic subtrees in a tree *submitted*

27) É. Czabarka, A. Dutle, T. Johnston, L. A. Székely, Abelian groups yield many large families for the diamond problem, Vol 1, Issue 2, 320-328 (2015)

26) Sz. Horváth, É. Czabarka, Z. Toroczkai, Removing degeneracy in maximum enthropy models of networks, Physical Review Letters, Vol. 114, Issue 15, 15871, (2015)

25) É. Czabarka, R. Florez, L. Junes, A discrete convolution on the generalized Hosoya triangle, Journal of Integer Sequences, Vol 18, Article 15.1.6, 22 pp(2015)

24) É Czabarka, R Florez, J. Junes, Some enumerations on non-decreasing Dyck paths, Electronic Journal of Combinatorics, Vol. 22, Issue 1 22 pp (2015)

23) É. Czabarka, A. Dutle, P.L. Erdős, I. Miklós, On realizations of a joint degree matrix, Discrete Applied Math, Vol. 181, 283-288, (2015)

22) F. Molnár, N. Derzsy, É. Czabarka, L.A. Székely, K. Szymanszki, G. Korniss, Dominating scale free networks using generalized probabilistic methods, Scientic Reports 4, article number 6308, Sept. 2014

21) H. Aydinian, É. Czabarka, L.A. Székely, Mixed orthogonal arrays, k-dimensional M-part Sperner multi-families, and full multi-transversals, Information Theory, Combinatorics and Search Theory, LNCS 7777, (2013) 371-401, Springer, Heidelberg

20) É. Czabarka, M. Marsili, L.A. Székely, Threshold functions for distinct parts: revisiting Erdős-Lehner, Information Theory, Combinatorics, and Search Theory, LNCS 7777, (2013) 463-471, Springer, Heidelberg

19) É. Czabarka, P.L. Erdős, V. Johnson, V. Moulton: Generating functions for multi-labeled trees, Discrete Applied Mathematics 161 (2013) 107-117

18) Cs. Biró, É. Czabarka, Peter Dankelmann L.A. Székely, Remarks on the domination number of graphs. Bulletin of the I.C.A. 64 (2012) 73-82

17) É. Czabarka, P. L. Erdős, V. Johnson, A. Kupczok, L.A. Székely, Asymptotically normal distribution of some tree families relevant for phylogenetics and of partitions without singletons, Moscow J. Comb. Numb. Theory, 1(3) (2011)

16) H. Aydinian, É. Czabarka, P. L. Erdős, L.A. Székely, A tour of M-part L-Sperner families, JCT A, 118 (2011) 702–725

15) H. Aydinian, É. Czabarka, K. Engel, P.L. Erdős, L.A. Székely, A note on full transversals and mixed orthogonal arrays, Australasian J. Combin. 48 (2010) 133–141

14) D. Bokal, É. Czabarka, L.A. Székely, I. Vrťo, General lower bounds for the minor crossing number of graphs, Discrete and Computational Geometry 44 (2010) 463–483

13) É. Czabarka, L.A. Székely, S. Wagner, The inverse problem for certain tree parameters, Discrete Applied Math 157 (15) (2009) 3314–3319

12) É. Czabarka, P. Dankelmann, L.A. Székely, Diameter of 4-colourable graphs, European J. of Combin. 30 (2009) 1082–1098

11) É. Czabarka, O. Sýkora, L.A. Székely, I. Vrťo, Biplanar crossing numbers. II. Comparing crossing numbers and biplanar crossing numbers using the probabilistic method. Random Structures and Algorithms 33 (4) (2008 Dec) 480–496

10) D. Bokal, É. Czabarka, L.A. Székely, I. Vrťo, Graph minors and the crossing number of graphs, Electronic Notes in Discrete Math. 28 (2007) 169-175

9) É. Czabarka, O. Sýkora, L. A. Székely and I. Vrťo, Crossing numbers and biplanar crossing numbers I: a survey of problems and results, More Sets, Graphs and Numbers, eds. E. Győri, G. O. H. Katona and L. Lovász, Bolyai Society Mathematical Studies 15, Springer Verlag, (2006) 57–77.

8) J.L. Spouge, É. Czabarka, Some central limit theorems pertinent to the effectiveness of database retrieval, Technical Reports of the Industrial Mathematics Institute, Department of Mathematics, University of South Carolina, `http://imi.cas.sc.`

edu/django/site_media/media/papers/2006/2006_15.pdf

7) É. Czabarka, O. Sýkora, L.A. Székely, I. Vrťo, Outerplanar crossing numbers, circular arrangement problem, and isoperimetric functions, Electronic Journal of Combinatorics 11(1), (2004) R81 20pp

6) G.T. Marth, É. Czabarka, J. Murvai, S.T. Sherry, The allele frequency spectrum in genome-wide human variation data reveals signals of differential demographic history in three large world populations. Genetics 166 (2004) 351-372

5) G.T. Marth, G. Schuler, R. Yeh, R. Davenport, R. Agarwala, D. Church, S. Wheelan, J. Baker, M. Ward, M. Kholodov, L. Phan, É. Czabarka, J. Murvai, D. Cutler, S. Wooding, A. Rogers, A. Chakravarty, H.C. Harpending, P.-Y. Kwok, S.T. Sherry, Sequence variations in the public human genome data reflect a bottlenecked population history, Proc. Natl. Acad. Sci. USA (2003) 100: 376-381.

4) I.B. Rogozin, K.S. Makarova, J. Murvai, É. Czabarka, Y.I. Wolf, R.L. Tatusov, L.A. Székely, E.V. Koonin, Connected gene neighborhoods in prokaryotic genomes. Nucleic Acids Res.; 30(10) (2002 May) 2212-23.

3) É. Czabarka, G. Konjedov, M. V. Marathe, A.G. Percus, D.C. Torney, Algorithms for Optimizing Production DNA Sequencing, Proceedings of the Eleventh Annual ACM-SIAM Symposium on Discrete Algorithms (SODA'2000) 399-408.

2) É. Czabarka, Intersecting Chains in Finite Vector Spaces, Combinatorics, Probability and Computing 8, (1999), 509-528.

1) S. Visvanathan, É. Czabarka, A. Sengupta: Fault-Tolerant Embedding of Hamiltonian Circuits in Line Digraph Interconnection Networks, Information Processing Letters 57, (1996), 265-271

Invited Seminar/Colloquia (Seminars at place of employment not listed):

51) Iowa State University, Ames, *Maximum number of entries in a joint degree vector*, Oct 31, 2016

50) University of Szeged, Combinatorics Seminar, *Tanglegram crossing numbers*, July 4, 2016

49) University of Szeged, Combinatorics Seminar, *Maximum number of entries in a joint degree vector*, Jun 23 2015

48) University of Maribor, Slovenia, *Sampling graphs with given assortativity*, Jun 2015

47) University of Maribor, Slovenia, *Basic results in extremal set theory*, Jun 1, 2015 (90 min)

46) Institute for Mathematics and Its Applications Annual Seminar, *Beyond degree sequences of graphs*, Feb 5 2015

45) Colloquium talk at Stellenbosch University, South Africa: *Beyond degree sequences of graphs*, Dec 17, 2014

44) Combinatorics Seminar at the Department of Mathematics, University of British Columbia, Vancouver, Canada: *Mixed orthogonal arrays and more-part Sperner families*, Oct 21 2014

43) Combinatorics seminar at Dept. Math. University of Szeged, Hungary, Combinatorics Seminar, *Partition adjacency matrices*, May 29 2014

42) Dept. Math. University of Szeged, Hungary, Combinatorics Seminar, *Partition adjacency matrices*, May 29 2014

41) Dept. Physics, University of Houston, Seminar of the Bassler Research Group, *A gentle introduction to the Lovász Local Lemma*, Feb 27, 2014 (90 min)

40) Dept. Physics, University of Houston, Seminar of the Bassler Research Group, *Sampling graph ensembles with given assortativity*, Feb 24, 2014 (90 min)

39) Dept. of Math, Zhejiang University, Hangzhou, China, *Sperner type problems and design of experiments*, Dec 19, 2013

38) Dept. of Math., Tongji University, Shanghai, China, *Sperner type problems and design of experiments*, Dec 16 2013

37) Dept. of Math, Nanjing Normal University, Nanjing, China, *Partition adjacency matrices*, Dec 13, 2013

36) Dept. of Math., Tongji University, Shanghai, China, *Partition adjacency matrices*, Dec 9 2013

35) Dept. of Math, University of Louisville, KY, *Partition adjacency matrices*, Oct 23, 2013

34) University of Notre Dame, Interdisciplinary Center for Network Science & Applications, *A gentle introduction to the Lovász Local Lemma and its applications II* (2 hours), Oct 10 2013

33) University of Notre Dame, Interdisciplinary Center for Network Science & Applications, *A gentle introduction to the Lovász Local Lemma and its applications I* (2 hours), Oct 8 2013

32) Univerity of Notre Dame Combinatorics Seminar, *Connecting Sperner problems to mixed orthogonal arrays*, Oct 7, 2013

31) Colloquium, Dept. of Applied Math., Illinois Institute of Technology, *From Sperner-type problems to mixed orthogonal arrays*, Aug 26, 2013

30) Fall Meeting of the Carolina Math Seminar at the Citadel, South Carolina, *Phylogenetic trees and Stirling numbers*, Oct 26 2012

29) University of Szeged Combinatorics Seminar, *Crossing numbers and minor crossing number of graphs*, June 4 2012

28) Colloquium, Dept. of Math., University of Alabama, Birmingham, *Structural and enumeration resultson some families of trees relevant to bioinformatics*, Feb 17, 2012

27) Dept. of Computer Science, University of Alberta, Canada, *From M-part Sperner theorems to mixed orthogonal arrays*, Aug 17-20, 2011

26) Dept of Math., University of Alaska, *M-part Sperner families, transversals and mixed orthogonal arrays.* Aug 15, 2011

25) NIH, NLM, NCBI, *Structural results on gene trees and species trees*, July 2011

24) University of Szeged Combinatorics Seminar, *Graph orientations and crossing numbers*, June 27 2011

23) Biomathematics Research Centre, *Some results on gene trees and phylogenetic trees*, University of Canterbury, NZ, Dec 19

22) Technische Universität Berlin, Dept. of Math, *More part Sperner families*, Nov 19, 2010

21) University of Maribor, Dept. of Math, *Analogues of crossing numbers*, Oct 18, 2010

20) University of Szeged, Combinatorics Seminar, *M-part Sperner families*, Aug 27, 2010

19) Colloquium University of Southern Georgia, Dept. of Math, *Models for bootstrapping in database retrieval*, Oct 16, 2008.

18) Stellenbosch University, South Africa, *What does database bootstrapping mimic?*, January 6, 2008

17) University of Kwa-Zulu Natal, Durban, South Africa, *Crossing numbers and minor crossing numbers*, January 10, 2008.

16) Colloquium, University of Alabama at Birmingham, *Modeling evaluation of database retrieval*, Sept. 7, 2007.

15) Rényi Institute of Mathematics of the Hungarian Academy of Sciences, Budapest, Hungary, *A model for database bootstrap* (in Hungarian), May 2007.

14) SZTAKI (Computer Science Research Institute of the Hungarian Academy of Sciences), Budapest, Hungary, *Justifying database bootstrapping* (in Hungarian) May 2007.

13) Department of Computer Science, University of Alberta, Edmonton, Canada*Bootstrapping the ROC_n* Oct 2006:

12) Department of Computer & Information Sciences & Engineering, University of Florida, *Bootstrapping the ROC_n*, Oct 2006

11) Department of Mathematics, University of South Carolina, *Bootstrapping the ROC_n* March 2 2006

10) Colloquium, Department of Mathematics, College of William & Mary, *Comparing the efficiency of database retrieval methods* May 3, 2004

9) Colloquium, Virginia Polytechnic Institute and State University, Department of Computer Science, *Analysis of allele frequency spectrum in human variation data*, April 19, 2004

8) Colloquium, Department of Mathematics, San Jose State University, San Jose, CA, *Comparing the efficiency of database retrieval methods*, March 4, 2004

7) Colloquium, Department of Mathematics, Georgetown University, Washington DC, *Comparing the efficiency of database retrieval methods*, Feb. 24 2004

6) Bioinformatics Seminar of the Department of Computer Science, University of South Carolina, Columbia, *Which algorithm to choose?*, January 23 2004

5) Joint colloquium of the Departments of Mathematics/Computer Science, Biology and Chemistry, Valparaiso University, Valparaiso, IN, *Which algorithm to choose?* Nov. 10 2003

4) Colloquium, Virginia Polytechnic Institute and State University, Computer Science Department, *Comparing the efficiency of database retrieval methods* March 19, 2003

3) Genetics Discussion Group of the University of South Carolina, Columbia, SC, *Sequence alignment and accuracy of database retrieval* May 30, 2001

2) Departments of Mathematics and Computer Science, Gettysburg, PA, *Sequence alignment, protein structure matching and the Chen-Stein method*, April 19, 2001

1) NIH, NLM, National Center for Biotechnology Information, *Shifting in Finite Vector Spaces*, Nov 23, 1998

Invited Conference Talks:

39) 2016 Fall Southeastern Sectional AMS Meeting, North Carolina State University, Raleigh, NC *The maximum number of nonzero entries in a joint degree vector*, Nov. 12-13, 2016 (25 min)

38) 2016 Fall Central Sectional AMS Meeting, University of St. Thomas, Minneapolis MN, *Inducibility in binary trees and tanglegram crossing numbers*, October 28–30, 2016 (25 min)

37) 31st Clemson Mini-Conference on Discrete Mathematics and Algorithms , Clemson, SC *Sampling networks: the joint degree vector*, Oct 21, 2016 (40 min)

36) International Symposium on Biomathematics and Ecology Education and Research, College of Charleston, *Inducibility in binary trees and tanglegram crossing number* October 14-16, 2016 (25 mins)

35) International Conference on Current Trends in Graph Theory and Computing, New Delhi, India, *Inducibility in binary trees and tanglegram crossing number* September 17-19, 2016 (30 min)

34) SIAM Conference on Discrete Mathematics, *Inducibility in binary trees and tanglegram crossing number*, June 6-10 2016

33) IntersectionFest, Virginia Commonwealth University, *More-part Sperner families and multifamilies* March 7-9 2016 (1hr plenary talk)

32) Spring Southeastern Sectional Meeting of the AMS, University of Georgia, Athens, *On the number of nonisomorphic subtrees of a tree.*, March 5-6, 2016

31) 29th Midwestern Conference on Combinatorics & Combinatorial Computing, College of Charlestown, Charleston, SC, *Sampling graphs with given degree sequence and (somewhat) fixed assortativity*, Oct 17 2015, (1 hr plenary talk)

30) Spring Eastern Sectional Meeting of the AMS, Georgetown University, Washington, DC, *Graph orientation lower bounds for crossing numbers*, March 8, 2015 (25 min)

29) 2014 SIAM Conference on Discrete Mathematics, Minneapolis, *Networks with similar assortativity — JDMs and PAMs*, June 16 2014 (25 min)

28) Combinatorial Optimizations Approaches to Graph Crossing Numbers Workshop, Maribor, Slovenia, *Combinatorial optimization models in crossing numbers*, June 2014 (25 min)

27) Fall Southeastern Sectional Meeting of the AMS, University of North Carolina at Greensboro, Joint degree matrices and partition adjacency matrices, Nov 8 2014 (25 min)

26) Fall Southeastern Sectional Meeting of the AMS, University of Louisville, KY, *On realizations of a joint degree matrix*, Oct 5-6 2013 (25 min)

25) SIAM-SEAS meeting, Knoxville TN, Extremal Problems in Combinatorics, *Large families for the diamond problem based on Abelian groups* March 2013 (25 min)

24) Advances in Interdisciplinary Statistics and Combinatorics, University of North Carolina Greensboro, *Mixed orthogonal arrays, k-dimensional M-part Sperner multi-families and full multi-transversals*, Oct 5-7 2012 (20 min)

23) Search Methodologies III, Zentrum für interdisziplinäre Forschung, *Mixed orthogonal arrays, k-dimensional M-part Sperner multi-families and full multi-transversals* Sep 1-5, 2012 (45 min)

22) GraDR 2012 Crossing Number Workshop and Minischool, Valtice, Czech Republic, *Minor crossing numbers*, May 20-24 (20 min)

21) Spring Southeastern Sectional Meeting of the AMS, University of South Florida, Tampa, *Phylogenetic trees and cyclic permutations*, March 10-11 2012 (25 min)

20) Fall Southeastern Sectional Meeting of the AMS, Wake Forest , University in Winston-Salem, *Graph orientations and crossing numbers*, North Carolina, Sept 24-25, 2011

19) Crossing Numbers Turn Useful, Banff International Research Station, Canada, *Crossing number lower bounds and orientations*, Aug 20-26 2011

18) Phylogenetics: New data, new Phylogenetic challenges, Isaac Newton Institute for Mathematical Sciences, Cambridge, UK *Generalized Stirling numbers and distribution of phylogenetic trees*, June 20-24, 2011 (20 min)

17) Midsummer Phylogenetics at University of East Anglia, UK, *Optimal placement of multiplication events on a species tree*, June 17, 2011

16) SIAM SEAS 2011, UNC Charlotte, *Extremal questions on d-dimensional transversals in M-dimensional grids*, March 25-26, 2011 (25 min)

15) 2011 Southeastern Sectional Meeting of AMS, Statesboro, GA *Higher dimensional transversals in M-dimensional grids*, March 12-13, 2011 (25 min)

14) Search Methodologies II, Zentrum für interdisziplinäre Forschung, *Full transversals and mixed orthogonal arrays* Oct 25-29, 2010 (30 min)

13) 2010 Fall Eastern Sectional Meeting of the AMS, Syracuse, NY, *Some combinatorial results on gene trees*, October 2-3, 2010 (20 min),

12) Workshop on Theory and Algorithmic Aspects of Graph Crossing Number, Brno, Czech Republik, *Analogues of crossing numbers*, Aug 21-22 2010 (20 min)

11) 2009 Molecular Informatics and Bioinformatics International Symposium, Institute of Advanced Studies, Budapest, Hungary

Minimizing the number of episodes on a species tree — an extension of Gallai's theorem on intervals March 17-19 2009 (30 min)

10) SIAM Discrete Mathematics biannual meeting, Burlington, Vermont *Minor crossing numbers*, 2008 (30 min)

9) International Conference on Interdisciplinary Mathematical and Statistical Techniques (IMST 2008/FIM XVI), Memphis, *The diameter of 4-colorable graphs*, May 2008 (30 min)

8) Sectional AMS Meeting, Special Session on Extremal and Probabilistic Combinatorics, DePaul University, Chicago, *M-part L-Sperner families*, Oct. 5-6, 2007 (30 min)

7) 6th Slovenian International Conference on Graph Theory, Minisymposium on Crossing Numbers of Graphs, *Minor crossing number and crossing number of graphs*, June 2007 (30 min)

6) Ondrej Sýkora Memorial Theory Day, Loughborough University, Loughborough, UK, *What does bootstrapping mimic?* June 2006: (20 min)

5) PARADAY V, PÅRC, Dept. of Computer Science, Loughborough University, Loughborough, UK, *Bootstrapping the ROC_n in database retrieval* May 24 2004 (30 min)

4) PÅRC Mini-symposium, Parallel Algorithms and Architecture Research Centre, Department of Computer Science, Loughborough University, Loughborough, UK, *Sequence alignment algorithms* June 18 2002: (60 min)

3) 2001 Spring Southeastern Section, Columbia, SC, *Protein structure matching — an extension of the largest clique size in Erdős-Rényi random graphs* March 16-18, 2001, (20 min)

2) Third University of North Carolina at Greensboro Mini-Conference in Combinatorics and Graph Theory, *Algorithms for Optimizing Production DNA Sequencing* November 1999, (30 min)

1) Center for Nonlinear Studies Workshop, Los Alamos National Laboratory, Los Alamos, New Mexico, *Shifting in finite vector spaces* July 29-Aug 7, 1998 (60 min).

Talks for General Audience/Outreach:

13) PME/Gamecock Math Club, University of South Carolina, Sudoku and Latin squares, March 26, 2013

12) Spring Meeting of the Carolina Math Seminar at Benedict College, Columbia, Feb 10, 2012: Orthogonal arrays and transversals

11) Talk on interesting problems to elementary school students at Mossy Oaks Elementary School, Beaufort, SC, May 2008

10) Colloquium talk at the Department of Mathematics and Computer Science, South Carolina State University, June 2006: Crossing numbers

9) Colloquium talk at the Department of Mathematics, Eastern Michigan University, November 2004: Which algorithm to choose

8) Eastern Pennsylvania and Delaware Section of the MAA, Gettysburg College, Gettysburg, PA, October 18, 2003, panelist: Careers in Mathematics

7) Career Night, Mathematics and Statistics Departments of the University of South Carolina, Columbia, SC, January 21, 2003

6) Mathematics Awareness Month Talk Series, Department of Mathematics and Computer Science of South Carolina State University, Orangeburg, SC, March 29, 2002: Sequence alignment algorithms

5) Spring Colloquium Series, Gettysburg College, Departments of Mathematics and Computer Science, Gettysburg, PA, April 19, 2001, panelist: Jobs in government

4) Mathematics Awareness Month Talk Series, Department of Mathematics and Computer Science of South Carolina State University, Orangeburg, SC, April 16, 1997: Mathematics and the internet

3) Euclidean Club at the Department of Mathematics and Computer Science of South Carolina State University, Orangeburg, SC, October 22, 1996: Trigonometry of the ancient Greek astronomers

2) Euclidean Club at the Department of Mathematics and Computer Science of South Carolina State University, Orangeburg, SC, March 20, 1996: Fractals

1) Euclidean Club at the Department of Mathematics and Computer Science of South Carolina State University, Orangeburg, SC, November 14, 1995: Oh, that colorful mathematics! (Problems that can be solved by coloring)

Conference Organization:

9) Mathematics Research Communities Workshop, Beyond Planarity – Crossing Numbers of Graphs, Snowbird, Utah, June 11-18, 2017

8) SIAM Discrete Math Conference, Structures in Trees Minisymposium, Atlanta, June 6-10 2016 (co-organizing with S. Fernández-Merchant, G. Salazar, M. Schaefer, L.A. Székely)

7) 28th Cumberland Conference on Combinatorics, Graph Teory and Computing, March 15-17 2015 (co-chair; Chair: Linyuan Lu)

6) SIAM Discrete Math Conference, Modeling Networks under Exact and Soft Constraints Minisymposium, Minnesota 2014 (co-organizing with L.A. Székely)

5) Summer School in Network Science May 20-24, 27-31, University of South Carolina, Columbia. (member of the organizing committee, chair: L.A. Székely; co-chairs: L. Lu, Q. Wang; other organizing members: V. Gudkov, X. Li)

4) Special Session on Graphs, Hypergraphs and Counting, Spring Sectional Meeting of the AMS, Iowa State University, Ames, IA, Apr 27-28, 2013 (co-organizer with L.A. Székely)

3) Discrete Mathematics and Bioinformatics Minisymposium (3 sessions) at the 33rd SIAM Southeastern Atlantic section Conference, April 4-5, 2009, Columbia, SC

2) Mini-Conference on Applied Combinatorics (member of the organizing committee, chair: G.O.H. Katona, committee members: J.R. Griggs and L.A. Szekely) October 15-16, 2007, Columbia, SC

1) Ondrej Sýkora Memorial Theory Day, (member of the organizing committee, committee members: L.A. Székely and Imrich Vrťo) June 7 2006, Loughborough University, UK

Service:

at University of South Carolina:

- Ad-Hoc Committee for Criteria for Promotion of Clinical Faculty (2016-17)
- Post Tenure Review Committee (2015-present)
- Scholarship and Advisory Committee (2011-present): Knowles Fellowship advisor (mentored 2011 scholarship winner Madison Miller); Participated in advising Goldwater Scholarship applicants (advised 2012 winners William Franks and Daniel Grier), country expert in Fulbright Scholarship Committee (2016)
- Faculty Advisory Council (2008-2010, 2015-present)
- Undergraduate Advisor for math majors (2004-2013, 2015-present)
- Undergraduate Advisory Council (2006-2013, 2015-present)
- Member of the Peer Review of Teaching Committees, 2014-2015)
- Scholar Review Committee Member for Carolina and McNair Scholars (2013-2014)
- Member of the College of Arts and Sciences Curiculum Committee (2012-1013)
- Co-organizer of combinatorics research seminar (with L.A. Székely) 2010-present)
- Faculty Senator (2011-2013)
- Hiring Committee Member (2009-2010)
- PME/Gamecock Math Club Faculty Advisor (2009-2010)
- Gamecock Leadership Society Faculty Advisor (2009-2010)
- Co-organizer of bioinformatics research seminar (with J.Tang and L.A. Székely) 2009-2010
- Events Committee (2009-2010)
- Qualifying Exam Comitte chair (2009)
- Webpage Committee (2006-2008) — maintenance of Industrial Mathematics Institute webpages
- Member of High School Mathematics Committee (2006-2008)
- Comprehensive exam committee member/reader for math Ph.D. students Aaron Dutle, Paisa Seeulangsawat, Xing Peng, Heather Smith, Danny Rorabaugh, Ed Boehnlein, Taylor Short, Gregory Clark, Anton, Strizhov, Hays Whitlatch, Duncan Wright
- Mentor at the Women's Mentor Network of South Carolina (2011-2013)
- First-Year Scholar Mentor, Mentor Program of the Office of Fellowships and Scholar Programs (2012-2013)
- M.S. defense exam committee member/reader for computer science student Thorben Primke
- Ph.D. committee member for computer science student Annamaria Kish
- Organizer of the combinatorics seminar (2012-2013)

at College of William & Mary:

- Undergraduate Advisor for math majors (2004-2006)

- Undergraduate Curriculum Committee (2005-2006)

Membership in Professional Organizations: AMS, SIAM, János Bolyai Mathematical Society in Hungary

Editorial Board Member: Theory and Applications of Graphs

Refereeing Work: Electronic Journal of Combinatorics, SIAM Journal on Discrete Mathematics, Discrete Mathematics, Discrete Applied Mathematics, Australasian Journal of Combinatorics, Journal of Statistical Theory and Practice, Nucleic Acids Research, Electronic Jornal of Combinatorics

Additional Information:

- Publication 4. (list of publications) has been reviewed by Faculty of 1000 and received a rating of 6 (must read)
- Publication 4. has been reviewed in the September 30, 2002 issue of The Scientist.
- Publication 5. has been discussed in the December 23, 2002 issue of University of Utah News and Public Relations
- Publication 5. has been discussed in the December 24, 2002 issue of BBC News World Edition (Science/Nature)
- Publication 5. has been discussed in the December 24, 2002 issue of Noticias (in Portuguese)
- Publication 5. has been discussed in the December 27, 2002 issue of The Washington Times (page A3)
- Publication 5. has been discussed in the December 30, 2002 issue of Washington Post (page A09, Science Notebook)