

Julia Chifman

Department of Mathematics
University of Kentucky
Lexington, KY, 40506-0027

Phone: (859)-539-6966
E-mail: jchifman@ms.uky.edu
Web: www.ms.uky.edu/~jchifman

Curriculum Vitae

Place of Birth: Ukraine
Languages: English (fluent), Russian (fluent)
Citizenship: US

EDUCATION

- Ph.D., Mathematics, University of Kentucky, May 2009.
Advisor: James C. Beidleman.
Thesis: *Direct products and the intersection map of certain classes of finite groups.*
- M.A., Mathematics, University of Kentucky, 2005.
Advisor: Uwe Nagel.
Topic: *Toric ideals of phylogenetic invariants.*
- B.S. , Mathematics, King's College, Wilkes-Barre, PA, 2003.

RESEARCH INTERESTS

Applications of algebra to problems in evolutionary biology, in particular to phylogenetics, the area of research concerned with finding the genetic relationship between species based on their DNA sequences.

Direct products of finite groups in which normality, permutability and Sylow permutability are transitive relations. The intersection map of subgroups.

Working with other departments on developing projects and courses for undergraduate and graduate students that help students to build connections among disciplines.

PUBLICATIONS

- *Toric ideals of phylogenetic invariants for the general group-based model on claw trees* , with S.Petrović, Proceedings of the Second international conference on Algebraic Biology, (eds. H. Anai, K. Horimoto and T. Kutsia), Springer LNCS, 4545, Springer-Verlag, 307-321, 2007.

PUBLICATIONS (CONTINUED)

- *Note on direct products of certain classes of finite groups*, Communications in Algebra, (2009) 37:5, 1831 — 1842.
- *The intersection map of subgroups and the classes PST_c , PT_c and T_c* , with James C. Beidleman, Ricerche mat. (2008) 57:301-309.
- *Phylogenetic invariants of the general group-based DNA model*, with Sonja Petrović (in preparation).

FELLOWSHIPS

- *Kentucky Opportunity Fellowship*, July 2008 - June 2009.
- *Algebra Cubed Fellowship*, NSF sponsored fellowship, University of Kentucky, August 2006 - July 2007.
- *Graduate School Fellowship*, University of Kentucky, August 2003- July 2004.

HONORS AND AWARDS

- Summer Research Support Award, Summer 2008.
- Edgar Enoch Algebra Scholarship, University of Kentucky, May 2007.
- Summer Research Support Award, Summer 2006.
- The Reverend James E. Kline Award for Mathematics, King's College, 2003.
- Outstanding Adult Learner of the Year, King's College, 2003.
- Delta Epsilon Sigma Undergraduate Scholarship, King's College, 2002-2003.
- Certificate of Honor from the President and Faculty of King's College, 2002.

DEPARTMENTAL SERVICE

- Member of the Mathematics Outreach Recruiting Committee, Department of Mathematics, University of Kentucky, Fall 2008 – until the position is filled.
- Organized Graduate Student Colloquium, Department of Mathematics, University of Kentucky, Spring 2005-Fall 2005.
- Managing Algebra Cubed website, Department of Mathematics, University of Kentucky, Fall 2006- Spring 2009.

PROFESSIONAL ACTIVITIES

- Member of the *Evolutionary Biology Working Group*, Statistical and Applied Mathematical Sciences Institute (SAMSI), Research Triangle Park, NC.
- In residence at SAMSI:
November 10-21, 2008.
March 31-April 15, 2009.

PROFESSIONAL MEMBERSHIPS

- American Mathematical Society.
- The Mathematical Association of America.
- Delta Epsilon Sigma national scholastic honor society.

TEACHING EXPERIENCE

- Calculus IV, Primary Instructor, University of Kentucky, Spring 2008.
- Intermediate Algebra, Primary Instructor, University of Kentucky, Fall 2007.
- Matrix Algebra, Primary Instructor, University of Kentucky, Summer 2005.
- Finite Mathematics, Primary Instructor, University of Kentucky, Spring 2005.
- Elementary Calculus, Primary Instructor, University of Kentucky, Fall 2004.
- Calculus III, Teaching Assistant, University of Kentucky, Spring 2004.

MATHEMATICS OUTREACH

- Algebra Cubed, University of Kentucky, August 2006 - July 2007.
To increase the mathematical conceptual understanding and procedural fluency of Middle and High school students in Bath and Powell counties.
- Research Assistant for Appalachian Math Science Partnership (AMSP), University of Kentucky, Fall 2005- Spring 2006.

PRESENTATIONS / POSTERS

- *Phylogenetic invariants of the general group-based DNA model*, SAMSI, Research Triangle Park, NC, November 18, 2008.
- *Phylogenetic invariants*, poster. Opening workshop of the SAMSI program on Algebraic Methods in Systems Biology and Statistics, Research Triangle Park, NC, September, 2008.
- *Toric ideals of phylogenetic invariants*. 29th Ohio State University - Denison Mathematics Conference, Columbus, OH, May, 2008.
- *The intersection map and the classes PST_c , PT_c , and T_c* . Symposium to Mark the 70th Birthday of Professor Derek J. S. Robinson, Auburn University at Montgomery, AL, March, 2008.
- *A note on direct products of solvable PST-groups*. Zassenhaus 2007 (group theory conference), Saint Louis University, St. Louis, MO, March 2007.
- *Representations of the rotation group in 3-dimensional space*. University of Kentucky, April 2006.
- *Finite groups in which Sylow permutability is transitive* (Qualifying Examination), University of Kentucky, February 2006.
- *Syzygies of unimodular Lawrence ideals*, University of Kentucky, Fall 2005.
- *Toric ideals of phylogenetic invariants* (master examination). University of Kentucky, April 2005.
- *Phylogenetic algebraic geometry*, University of Kentucky, Fall 2004.
- *A Mini-Yahtzee Game*, MAA (section meeting), Wilkes-Barre, PA, Spring 2003.

CONFERENCES / WORKSHOPS ATTENDED

- Molecular Evolution and Phylogenetics Workshop, Research Triangle Park, NC, April 2-3, 2009.
- Opening workshop of the SAMSI program on Algebraic Methods in Systems Biology and Statistics, Research Triangle Park, NC, September, 2008.
- 29th Ohio State University - Denison Mathematics Conference, Columbus, OH, May, 2008.
- Symposium to Mark the 70th Birthday of Professor Derek J. S. Robinson, Auburn University at Montgomery, AL, March, 2008.
- Zassenhaus 2007 (group theory conference), Saint Louis University, March 2007.
- The XXVIIIth Ohio State-Denison Mathematics Conference, May 2006.
- Midwest Algebra, Geometry and their Interactions Conference, October 2005.

REFERENCES

- James C. Beidleman, Professor of mathematics, University of Kentucky,
e-mail: clark@ms.uky.edu
phone: 859-257-1452
- Uwe Nagel, Associate professor of mathematics, University of Kentucky,
e-mail: uwenagel@ms.uky.edu
phone: 859-257-6793
- Richard Millman, Professor of mathematics, Center for Education Integrating
Science, Mathematics, and Computing (CEISMC) Director, Georgia Institute of
Technology,
e-mail: richard.millman@ceismc.gatech.edu
phone: 404-894-6179
- Benjamin Brewster, Professor of mathematics, Binghamton University,
e-mail: ben@math.binghamton.edu
phone: 607-777-4201