

Jeffrey Paul Burdges

Mathematics Department
Wesleyan University, Science Tower 655
265 Church St., Middletown, CT 06459-0128
<http://www.maths.manchester.ac.uk/~burdges>

+1 609-216-5141 (mobile)
+1 860-685-2172 (Wesleyan)
+33 661095118 (France)
Jeffrey.Burdges@manchester.ac.uk

Personal Information

Born January 17th, 1976 in Atlanta, GA. U.S. Citizen.
Speaks English (native) and French.

Education

- 9/99-10/04 Ph.D. Mathematics: Rutgers University, New Brunswick, NJ
Thesis: “Simple Groups of Finite Morley Rank of Odd and Degenerate Type”
Under the direction of Gregory Cherlin
- 8/95-5/99 B.A. Mathematics (Summa Cum Laude): Georgia Institute of Technology, Atlanta
Certificate in Social Psychology GPA 3.72

Research Interests

The classification project for simple groups of finite Morley rank. Interactions between model theory and algebra, especially group theory. Pure model theory.

Finite group theory, especially methods of the classification. Algebraic groups, representation theory, and associated geometries. Applied mathematics involving group theory and representation theory. Random walks on groups. Algebraic geometry.

Probability, especially divergence (relative entropy). Estimating probability distributions and the maximal entropy principle. Free probability.

Appointments

- 7/09–3/10 Chargé de Recherche Invité: CNRS Université Lyon-1. Visiting Researcher: Istanbul Bilgi University. Van Vleck Visiting Researcher: Wesleyan University.
- 9/05–6/09 NSF Postdoctoral Fellow: University of Manchester.
- 1/06–12/06 Chateaubriand Fellow: Institut Camille Jordan, Université Lyon-1.
- 9/04–8/05 Postdoctoral Researcher (DFG): Universität Würzburg, University of Birmingham, Universität Bielefeld, and the Isaac Newton Institute, Cambridge.
- 9/02–7/04 Teaching & Research Assistant : Math. Dept., Rutgers University.
- 9/99–9/02 NSF Graduate Research Fellow: Math. Dept., Rutgers University.
- 3/98–3/99 Research Assistant: Math. Dept., Georgia Institute of Technology.
Working in graph theory under the direction of Robin Thomas.
- 9/97–3/99 Teaching Assistant: Math. Dept., Georgia Institute of Technology.

Publications

1. With Gregory Cherlin. Borovik-Poizat rank and stability. *J. Symbolic Logic*, 67(4):1570–1578, 2002.
2. A signalizer functor theorem for groups of finite Morley rank. *J. Algebra*, 274(1):215–229, 2004.

3. Sylow theory for $p = 0$ in solvable groups of finite Morley rank. *J. Group Theory*, 9(4):467–481, 2006.
4. The Bender method in groups of finite Morley rank. *J. Algebra*, 312(1):33–55, 2007.
5. With Gregory Cherlin and Eric Jaligot. Minimal connected simple groups of finite Morley rank with strongly embedded subgroups. *J. Algebra*, 314(2):581–612, 2007.
6. With Alexandre Borovik and Gregory Cherlin. Involutions in groups of finite Morley rank of degenerate type. *Selecta Math.*, 13(1):1–22, 2007.
7. With Alexandre Borovik and Gregory Cherlin. Simple groups of unipotent type. In: B. Loewe, editor, *Algebra, Logic, Set Theory. Festschrift für Ulrich Felgner zum 65 Geburtstag*, pages 47–62. Studies in Logic, College Publications at Kings College London, 2006.
8. With Ayşe Berkman, Alexandre Borovik, and Gregory Cherlin. A generic identification theorem for L^* -groups of finite Morley rank. *J. Algebra*, 319(1):50–76, 2008.
9. With Alexandre Borovik and Ali Nesin. Uniqueness cases in odd type groups of finite Morley rank. *J. London Math. Soc.*, 77(1):240–252, 2008.
10. With Alexandre Borovik. A new trichotomy theorem. *J. London Math. Soc.*, 77(1):1–14, 2008.
11. Signalizers and balance in groups of finite Morley rank. *J. Algebra*, 321:1383–1406, 2009.
12. With Tuna Altınel. On analogies between algebraic groups and groups of finite Morley rank. *J. London Math. Soc.*, 78(1):213–232, 2008.
13. With Adrien Deloro. Weyl groups of small groups of finite Morley rank. *Israel J. Math.*, 2009. To appear.
14. With Gregory Cherlin. A generation theorem for groups of finite Morley rank. *J. Math Logic*, 2010. To appear.

Preprints

15. With Gregory Cherlin. Semisimple torsion in groups of finite Morley rank. Submitted. 2008.
16. With Alexandre Borovik. Linear groups of finite Morley rank. Submitted. 2008.

Conference Talks

- 8/09 *More quasi-thin simple groups of finite Morley rank*. Model Theory. Banach Center, Bedlewo, Poland. (invited)
- 6/09 *Quasi-thin simple groups of finite Morley rank*. Groups and Models: Cherlin Bayram. Bilgi University, Istanbul. (invited)
- 11/08 *A generation theorem for groups of finite Morley rank* AMS Sectional, Wesleyan University. (invited)
- 7/08 *Genericity arguments in groups of finite Morley rank*. Short course (5 lectures), Mod-Net Summer School, University of Manchester. (invited)
- 5/07 *Our current picture of torsion in connected groups* Camerino, Italy. (invited)
- 7/05 *Involutions in simple groups of finite Morley rank* Logic Colloquium, Athens. (contributed)

- 3/05 *Sylow theory for “ $p = 0$ ” in solvable groups of finite Morley rank.* Newton Institute, Cambridge. (invited)
- 9/04 *0-Unipotence in odd type groups of finite Morley rank.* Groupes, géométrie, et logique, CIRM Luminy, France. (invited)
- 2003 *A characteristic zero notion of unipotence.* Logic Colloquium, Helsinki; ASL Annual Meeting, University of Illinois, Chicago; and Boston Logic Colloquium. (contributed)

Invited Seminar Talks

- 2/10 *Recent genericity argument in groups of finite Morley rank.* Logic seminar, M.I.T.
- 11/09 *Simple groups of finite Morley rank.* Colloquium, Bosphorus University, Istanbul.
- 3/09 *Connectedness of centralizers of tori.* University of Leeds and Rutgers University.
- 12/08 *Simple groups of finite Morley rank.* Algebra Seminar, University of Georgia, Athens.
- 12/08 *A generation principle for groups of finite Morley rank.* University of Illinois, Chicago.
- 3/08 *Quelques idées sur les groupes simples infinis.* Université Paris-7.
- 2/08 *Odd type L^* -groups with strongly embedded subgroups.* Université de Mons-Hainaut.
- 3/07 *On connectedness of the centralizers of tori.* Oxford University.
- 3/07 *Les sous-groupes fortement inclus dans un L^* -groupe de rang de Morley fini.* Lyon-1.
- 1/07 *On automorphisms of simple groups of finite Morley rank.* Logic Seminar, Paris-7.
- 11/06 *Semisimple torsion in groups of finite Morley rank.* University of Wisconsin, Madison.
- 2/06 *Involutions in linear groups of finite Morley rank and Toral p -elements in connected groups of finite Morley rank.* Logic and Model Theory Seminars, Paris-7.
- 2/06 *Involutions in linear groups of finite Morley rank.* Rutgers University.
- 1/06 *Genericity arguments in groups of finite Morley rank.* Logic Seminar, Leeds.
- 4/05 *Sylow theory for “ $p = 0$ ” in solvable groups of finite Morley rank.* Paris-7.
- 3/05 *Simple groups of finite Morley rank.* Algebra Seminar, University of Manchester.
- 1/05 *Groupes simples minimaux ayant un sous-groupe fortement inclus II.* Lyon-1.
- 8/04 *Borovik’s Program: Towards the Endgame.* University of Illinois, Chicago.
- 6/02 *A characteristic zero notion of unipotence.* Université Lyon-1.

Courses Taught

Lecturer :

Istanbul Bilgi University : Group Theory (4th year) and Computational Complexity Theory (4th year)

University of Manchester : Nonstandard logics (master’s level) and Representation theory (4th year / masters).

Rutgers University : Linear Algebra and Calculous I (engineering track)

Teaching Assistant :

Rutgers University : Calculous (3 times)

Georgia Institute of Technology : Multi-variable Calculous (3 times) and differential equations

Students supervised

Christine Lee, Graphical studies of the structure of free groups, MSc project, University of Manchester, 2008.

Professional Service

7/07–7/08 Organizer of Manchester Logic Seminar.

Various refereeing assignments.

Nonacademic Positions

5/07–10/07 Applied mathematics collaborator. *The Hive, Inc., Boston.*

5/99–9/99 PHP & SQL developer (web backend, DBA). *VA Linux Systems, San Jose.*

5/98–9/98 Visual Basic & SQL developer (web). *Foxfire, Inc., Atlanta.*

5/97–9/97 Perl & SQL developer (web). *Intelimedia, Inc., Atlanta.*

5/96–9/96 C developer (PCMCIA drivers). *American Megatrends Inc., Atlanta.*

5/93–9/95 Buyer & C developer. *Novatech, Inc., Atlanta.*

C developer, graphics drivers. *Georgia Tech Research Institute, Atlanta.*

Programming Experience

Significant Perl since before 1995, personal “go to” language. C & C++ since roughly 1989, but minimal C++ after 2000. SQL since 1996. TeX & LaTeX since 1994.

Incidental Java, JavaScript, PHP, visual basic, Tcl/Tk, and GTK for about 1 year each. x86 assembler during early 1990s. GAP, Mathematica & Maple as needed.

Entertainment Sage, Peri & R. Haskell, ML, & Python.

Other Information

Member of the American Mathematical Society, the Association for Symbolic Logic, the British Logic Colloquium, the European Mathematical Society, and the Société Mathématique de France.

Extensive software development experience including professional work in C, perl, SQL, PHP, visual basic, Tcl/Tk, x86 assembler, and others.

Please address postal correspondence to

Jeff Burdges, 620 Branch Valley Ct. / Roswell, GA 30076-3003, USA

February 3, 2010