

Arturo Magidin Curriculum Vitæ

Mathematics Department
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Main Research Area: Algebra, group theory, p -groups, capability, amalgams.
Other Research Interests: Number theory, arithmetic geometry, universal algebra.

EDUCATION

- **University of California at Berkeley.** Ph. D. in Mathematics, May 1998.
Advisor: George M. Bergman.
- **Universidad Nacional Autónoma de México.** Matemático, April 1993.

ACADEMIC POSITIONS

- 2009–** **University of Louisiana at Lafayette.** Department of Mathematics.
Associate Professor. Graduate Coordinator since April 2012.
- 2005–2009** **University of Louisiana at Lafayette.** Department of Mathematics.
Assistant Professor.
- 2003–2005** **University of Montana.** Dept. of Mathematical Sciences. Adjunct
Assistant Professor.
- 2002–2003** **University of Montana.** Dept. of Mathematical Sciences. Visiting
Assistant Professor.
- 1998–2002** **Universidad Nacional Autónoma de México.** Instituto de Mate-
máticas. Research Assistant Professor.
- 1994–1998** **University of California at Berkeley.** Dept. of Mathematics. Grad-
uate Student Instructor.
- 1993** **Universidad Nacional Autónoma de México.** Fac. Química. In-
structor.
- 1991–1993** **Universidad Nacional Autónoma de México.** Fac. Ciencias.
Teaching Assistant.

PUBLICATIONS

1. *Capable p -groups*, with Robert F. Morse. *Groups St Andrews 2013, London Mathematical Society Lecture Note Series* **422**, November 2015, pp. 399–427.
2. *On the capability of finite groups of class two and prime exponent*. *Publ. Math. Debrecen* **85/3-4** (2014), pp. 309–337.
3. *Two generator p -groups of nilpotency class two and their conjugacy classes*, with Azhana Ahmad and Robert F. Morse. *Publ. Math. Debrecen* **81** (2012), no. 1-2, 145–166. MR 2957506.

4. *Certain homological functors for 2-generator p -groups of class two*, with Robert F. Morse. *Computational Group Theory and the Theory of Groups, II*, CONTEMPORARY MATHEMATICS **511**, American Mathematical Society, 2010, pp. 127–166. MR 2655297 (**2011e**:20048)
5. *Computational Group Theory and the Theory of Groups, II. Proceedings of the Special Session on Computational Group Theory, Kalamazoo 2008, and the Harlaxton Conference on Computational Group Theory and Cohomology, 2008*. Editor (with Luise-Charlotte Kappe and Robert Morse). *Contemporary Mathematics* **511**, American Mathematical Society, 2010.
6. *Embedding p -groups of class two and prime exponent in capable and non-capable groups*. *Bull. Austral. Math. Soc.* **79** (2009), pp. 303–308. MR 2496934 (**2010d**:20023).
7. *Computational Group Theory and the Theory of Groups. Proceedings of the Special Session on Computational Group Theory, Davidson College 2007*. Editor (with Luise-Charlotte Kappe and Robert Morse). *Contemporary Mathematics* **470**, American Mathematical Society, 2008.
8. *Capability of nilpotent products of cyclic groups II*. *Journal of Group Theory* **10** (2007) no. 4, pp. 441–451. MR 2334753 (**2008e**:20047).
9. *Capable two-generator 2-groups of class two*. *Comm. Algebra* **34** (2006) no. 6, pp. 2183–2193. MR 2236108 (**2007b**:20037).
10. *Gauss's Lemma for number fields*, with David McKinnon. *The American Mathematical Monthly* **112** no. 5 (2005), pp. 385–416. MR 2139573 (**2005m**:11199).
11. *Capability of nilpotent products of cyclic groups*. *J. Group Theory* **8**, no. 4 (2005), pp. 431–452. MR 2152690(**2006c**:20073).
12. *On the orders of generators of capable p -groups*. *Bull. Austral. Math. Soc.* **70** no. 3 (2004), pp. 391–395. MR 2103970(**2005i**:20030).
13. *Amalgams of nilpotent groups of class two*. *J. Algebra* **274**, pp. 1–63 (2004). MR 2040861(**2004m**:20050).
14. *Introducción a la Criptología* (lecture notes), with José Galaviz. *Vínculos Matemáticos* no. 15 (2003), F. Ciencias, UNAM, 378 pp.
15. *Nonsurjective epimorphisms in decomposable varieties*. *Algebra Universalis* **48**, 145–150 (2002). MR 1929901(**2003h**:20052).
16. *Dominions in varieties generated by simple groups*. *Algebra Universalis* **48**, 133–143 (2002). MR 1929900(**2003h**:20051).
17. *Dominions in decomposable varieties*. *Algebra Universalis* **43** (2-3), 217–232 (2000). MR 1773940(**2001m**:20038).
18. *Dominions in varieties of nilpotent groups*. *Comm. Algebra* **28**(3), 1241–1270 (2000). MR 1742653(**2000m**:20053).
19. *Absolutely closed nil-2 groups*. *Algebra Universalis* **42**(1-2), 61–77 (1999). MR 1736342(**2001a**:20055).
20. *Dominions in finitely generated nilpotent groups*. *Comm. Algebra* **27**(9), 4545–4559 (1999). MR 1705886(**2001f**:20070).

21. *Capable groups of prime exponent and class two, II.* arXiv math.GR/0506578 (2005), 30 pp.
22. *Capable groups of prime exponent and class two.* arXiv math.GR/0401423 (2004), 20 pp.
23. *A correction to a result of B. Maier.* arXiv math.GR/0102215 (2001), 5 pp.
24. *Amalgamation bases for nil-2 groups of odd exponent.* arXiv math.GR/0006065 (2000), 29 pp.

TEACHING EXPERIENCE

- **University of Louisiana.** Calculus, 2005-2006, 2008, 2010-2011. Honors Calculus, 2008-2011, 2013-2014. Fundamentals of Mathematics, 2009. Number Theory, 2006, 2015. Advanced Linear Algebra, 2006, 2008-2010, 2012-2013. Undergraduate Abstract Algebra, 2007, 2013. Calculus and Applications, 2007. Linear algebra, 2005, 2007, 2009. Graduate Abstract Algebra, 2007-2008, 2009-2010, 2011-2012, 2013-2014. Topics in Group Theory, 2012. Multivariable Calculus, 2014.
- **University of Montana.** Linear algebra (with computer lab), 2005; Multivariable calculus, 2004; Precalculus, 2003-2004; Calculus, 2002-2005; Graduate Algebra, 2002-2003.
- **Universidad Nacional Autónoma de México.** Cryptology, 2002; Linear Algebra, 2001; Number Theory, 2000; Introductory Algebra, 2000; Calculus, 1998; Introductory Algebra (Instructor), 1993; Introductory Algebra (Teaching Assistant) 1991, 1993; Calculus (Teaching Assistant), 1992; Abstract Algebra (Teaching Assistant), 1993.
- **University of California at Berkeley.** Linear Algebra (Instructor) 1997; Multivariable Calculus (Teaching Assistant) 1996-1997; Calculus (Teaching Assistant) 1995; Linear Algebra (Teaching Assistant) 1994.

GRANTS

- **Provost's Travel Grant**, University of Louisiana at Lafayette, 2015.
- **Research Competitiveness Grant**, Louisiana Board of Regents. Research and travel grant, to help achieve national competitiveness for federally funded grants. 2007-2010.
- **Summer Research Award**, University of Louisiana at Lafayette, 2007.
- **Summer Research Award**, University of Louisiana at Lafayette, 2006.
- **Research Grant**, CONACyT, Mexico, 1999-2002.
- **Research Grant**, PRIDE Level B, UNAM. 1999-2002.
- **Travel and Research Grant.** CONACyT, Mexico, 1999.
- **Graduate Fellowship.** DGAPA, UNAM, 1994-1998.
- **Department of Education National Need Fellowship.** 1993-1994.
- **NSF Graduate Research Fellowship.** Honorable Mention, 1993, 1994.

ACADEMIC HONORS

- **Member, Graduate Faculty.** University of Louisiana at Lafayette. 2005–present.
- **National Science Foundation Graduate Research Fellowship.** Honorable Mention, 1993, 1994.
- **Best Undergraduate Thesis in Mathematics in Mexico.** Sotero Prieto Prize, Mexican Mathematical Society, 1993.
- **Top graduating student in Mathematics.** Gabino Barreda Medal, UNAM, 1993.
- **Graduation with Highest Honors.** Facultad de Ciencias, UNAM, 1993.

ACADEMIC SERVICE

Professional Service.

- **Editor.** INTERNATIONAL ELECTRONIC JOURNAL OF ALGEBRA. <http://www.ieja.net>. November 2011–present.
- **Referee.** Refereed papers for ISRAEL JOURNAL OF MATHEMATICS, SEMI-GROUP FORUM, JOURNAL OF GROUP THEORY, COMMUNICATIONS IN ALGEBRA, JOURNAL OF ALGEBRA, MALAYSIAN JOURNAL OF SCIENCE, STUDIA LOGICA, PROCEEDINGS OF THE AMS, GLASGOW JOURNAL OF MATHEMATICS, PUBL. MATH. DEBRECEN, FORUM MATHEMATICUM, INTERNATIONAL ELECTRONIC JOURNAL OF ALGEBRA, JOURNAL ADVANCED RESEARCH IN PURE MATHEMATICS, JOURNAL OF THE AUSTRALIAN MATHEMATICAL SOCIETY, INDIAN JOURNAL OF PURE AND APPLIED MATHEMATICS, FRONTIERS IN MATHEMATICS IN CHINA, JOURNAL OF ALGEBRA AND APPLICATIONS, and Proceedings volumes.
- **Co-organizer, Special Session “What’s new in Group Theory?”** With Elizabeth Wilcox. National Joint Meeting of the AMS and the MAA, San Antonio TX, January 2015.
- **Co-organizer, Group Theory Session.** With L-C Kappe and Ronald Solomon. 2012 Ohio State-Denison Mathematics Conference, Columbus, Ohio, May 2012.
- **Co-organizer, Special Session on Computational Group Theory.** With L-C Kappe and Robert Morse. AMS Sectional Meeting, Kalamazoo MI, October 2008.
- **Co-organizer, Special Session on Computational Group Theory.** With L-C Kappe and Robert Morse. AMS Sectional Meeting, Davidson NC, March 2007.
- **Evaluator.** Postdoctoral Grant, Fonds National de la Recherche Luxembourg, 2009.
- **Reviewer.** Math Reviews, 2005–present. 56 reviews written as of November 3, 2015.
- **Chair, Contributed Paper Session.** AMS National Meeting, Atlanta, January 2005. Group Theory session.

University and Departmental Service.

- **Graduate Council**, University of Louisiana at Lafayette. Appointed by the Dean of Sciences. September 2014–present.
- **Graduate Council**, University of Louisiana at Lafayette. Appointed by the Dean of the Graduate School, September 2013–August 2014.
- **Graduate coordinator**. Department of Mathematics, University of Louisiana at Lafayette; April 2012–present.
- **Master exam committee**. Chair, one student. University of Louisiana at Lafayette, 2009. Member, seven students (up to 2014).
- **Coordinator, Departmental Seminar**. Algebra seminar. Spring 2010, Fall 2012, Spring 2014, Fall 2014.
- **Doctoral thesis committee**. Six students (mathematics), University of Louisiana at Lafayette, 2006, 2007, 2010, 2013, 2014.
- **Master thesis committee** (outside observer). One student (Astronomy), University of Louisiana at Lafayette, 2006.
- **Doctoral thesis committee** (outside observer). One student (Computer Science), University of Louisiana at Lafayette, 2009.
- **University committees**. Student Discipline Committee, University of Louisiana at Lafayette (2008–present). Graduate Faculty Membership Committee (2012–present). College of Science WEAVE Committee (2012–present). Grade Appeals Committee (2014–present).
- **Departmental committees**. Department of Mathematics, University of Louisiana at Lafayette. Sundry committees, including Assessment Committee, Hiring Committee, Graduate Admissions Committee, Evaluation Rubrics Committee, English Proficiency for Teaching Assistants, Graduate Courses sequences and testing, Rhodes Outstanding Teaching Award committee, and Rubrics for Faculty Merit Evaluation Committee. 2005–present.
- **Exam coordinator**. First year calculus. U. Montana, Fall 2004.
- **Course coordinator**. Calculus. U. Montana, Fall 2003.
- **Seminar coordinator**. Algebra seminar, U. Montana, Fall 2002.
- **Program restructuring**. Undergraduate program in Mathematics, Facultad de Ciencias, UNAM, (1999-2000).
- **Colloquium Coordinator**. Graduate Student Colloquium, Dept. of Mathematics, University of California at Berkeley, 1995–1996.

COMPUTER SKILLS

Programming in C and Pascal (advanced). Programming in Scheme and C++, GAP (intermediate). HTML (intermediate). Use of T_EX, L^AT_EX, Windows, UNIX, etc.

LANGUAGES

Spanish (Native language).

English (Near native).

Hebrew (advanced spoken, intermediate written).

Yiddish (advanced spoken, intermediate written).

German (beginning written).

French (beginning written).

Japanese (rudimentary knowledge).

PROFESSIONAL MEMBERSHIPS

American Mathematical Society; Mathematical Association of America; Pi Mu Epsilon.

TALKS, SEMINARS, AND CONFERENCES

- **2014 Ohio State-Denison Meeting.** *A proof that a 4-generated group of class 2 and prime exponent is either cyclic, extra-special, or capable, using algebraic geometry.* Research paper on Group Theory. Columbus, Ohio, 2014.
- **AMS National Meeting.** *A proof that a 4-generated group of class 2 and prime exponent is either cyclic, extra-special, or capable, using algebraic geometry.* Contributed paper session on Group Theory. Baltimore, MD, 2014.
- **Groups St. Andrews 2013.** *Capability of groups of class two and prime exponent.* Research paper. St. Andrews University, St. Andrews, United Kingdom, August 2013.
- **2013 Zassenhaus Meeting.** *A sufficient condition for capability of groups of class two and prime exponent.* Research paper. Asheville, NC, 2013.
- **AMS National Meeting.** *A sufficient condition for capability of p -groups of class two and exponent p .* Contributed paper session on Group Theory. San Diego, CA, 2013.
- **Algebra Seminar.** Several talks on the capability of p -groups. Lafayette, LA, October and November 2012.
- **2012 Ohio State-Denison Meeting.** *Nonabelian tensor squares of nilpotent products of cyclic groups.* Research paper on Group Theory. Columbus, OH, 2012.
- **AMS National Meeting.** *The nonabelian tensor square of nilpotent products of cyclic groups.* Contributed papers session on Group Theory. Boston, MA, 2012.
- **2011 Zassenhaus Meeting.** *Towards a characterization of the capable groups of class two and exponent p .* Research paper on group theory. Towson University, MD, 2011.
- **AMS National Meeting.** *Capability of p -groups of class two and exponent p .* Contributed papers session on Group Theory. New Orleans, LA, 2011.
- **Departmental Colloquium.** *The many faces of free groups.* Department of Mathematics, University of Louisiana at Lafayette. Lafayette, LA, 2010.
- **2010 Ohio State University–Denison Meeting.** *Nonabelian tensor squares and cartesian products of nilpotent products.* Research paper on group theory. Columbus, OH, 2010.
- **AMS National Meeting.** *The nilpotent product and the nonabelian tensor square of groups.* Contributed papers session on Group Theory. San Francisco, CA, 2010.
- **Groups St. Andrews in Bath 2009.** *Classifying 2-generator p -groups of class 2 and computing their nonabelian tensor square and related functors.* University of Bath, Bath, UK, 2009.
- **2009 Zassenhaus Group Theory Conference.** *Embedding p -groups of class two and prime exponent into capable and non-capable groups.* Franklin and Marshall College, Lancaster, PA, 2009.

- **AMS National Meeting.** *A new classification of 2-generated p -groups of class two.* Contributed papers session on Group Theory. Washington DC, 2009.
- **AMS Sectional Meeting.** *A classification of 2-generated p -groups of class two.* Special Session on Computational Group Theory. Western Michigan University, Kalamazoo, MI, 2008.
- **Harlaxton Conference on Computational Group Theory and Cohomology.** *A new classification of 2-generated p -groups of class two.* Harlaxton College, United Kingdom, 2008.
- **2008 Ohio State University–Denison Meeting.** *Capability of semiextraspecial groups.* Preliminary report. Columbus, OH, 2008.
- **AMS National Meeting.** *More results on the capability of finite groups of class two and prime exponent.* Contributed paper in Group Theory. San Diego, CA, 2008.
- **Joint Meeting of the AMS and NZMS.** *Capable groups of class two and prime exponent.* Special Session on Group Theory, Actions, and Computation. Victoria University, Wellington, New Zealand, 2007.
- **Southern Regional Algebra Conference.** *Capability of groups of class two and prime exponent. Preliminary report.* University of Louisiana at Lafayette, Lafayette, LA, 2007.
- **Tulane University.** *Capable p -groups of class two and prime exponent.* Algebra seminar. New Orleans, LA, 2007.
- **2007 Zassenhaus Group Theory Conference.** *Capability of p -groups of class two and prime exponent.* Saint Louis University, St. Louis, MO, 2007.
- **AMS National Meeting.** *Capability of p -nilpotent products of cyclic p -groups.* Contributed talk on Group Theory. New Orleans, LA, 2007.
- **AMS National Meeting.** *Capability of nilpotent groups of class two and prime exponent. Preliminary Report.* Contributed talk on Group Theory. San Antonio, TX, 2006.
- **Southeastern Louisiana University.** *The Prehistory of the Fundamental Theorem of Arithmetic.* Invited Colloquium Talk, Mathematics Department. Hammond, LA, 2005.
- **University of Louisiana at Lafayette.** *The Prehistory of Unique Factorization into Primes.* Colloquium Talk, Department of Mathematics. Lafayette, LA, 2005.
- **University of Waterloo.** *Coproducts, Grassmannians, and Groups, Oh My!* Invited Colloquium Talk, Dept. of Pure Mathematics. Waterloo, Canada, 2005.
- **Zassenhaus Group Theory Conference.** *Capability of nilpotent groups of class two and prime exponent.* Auburn University - Montgomery. Montgomery, AL, 2005.
- **University of Louisiana at Lafayette.** *Capable p -groups: using old ideas to get new results.* Invited Colloquium Talk. Lafayette, LA, 2005.
- **Auburn University - Montgomery.** *Capable p -groups.* Invited Colloquium Talk. Montgomery, AL, 2005.

- **AMS National Meeting.** *Capable two-generator p -groups of class two.* Contributed talk on Group Theory. Atlanta, GA, 2005.
- **U. Montana.** *How is an election like a triangle? Some of the geometry and paradoxes of voting and elections.* Math Club talk. Missoula, MT, 2004.
- **U. Montana.** *Peering profoundly into p -groups.* Algebra Seminar, Missoula, MT, 2004.
- **AMS National Meeting.** *Capability of certain nilpotent products of cyclic groups.* Contributed talk on Group Theory. Phoenix, AZ, 2004.
- **St. Louis University.** *Capability of nilpotent products of groups.* Invited talk, Algebra Seminar. St. Louis, MO, 2003.
- **St. Louis University.** *Are the Isomorphism Theorems for groups and rings really the same theorem?* Invited Colloquium talk. St. Louis, MO, 2003.
- **U. Montana.** *Elliptic curves and modular forms.* Math Club invited talk. Missoula, MT, 2003.
- **AMS National Meeting.** *An analogue of Gauss's Lemma for number fields.* Contributed paper on Number Theory. Baltimore, MD, 2003.
- **U. Montana.** *Amalgams, or, a brief story of two groups who wish to become one.* Colloquium of the Department of Mathematical Sciences, Missoula, MT, 2002.
- **Vanderbilt University.** *Amalgams and dominions of nilpotent groups of class two.* International Conference on Modern Algebra, Nashville, TN, 2002.
- **Instituto de Matemáticas, Unidad Morelia.** *Amalgamas: una breve historia de grupos que quieren estar juntos.* Colloquium of the Mathematics Institute. Morelia, Mexico, 2002.
- **Universidad Veracruzana.** *La Conjetura de Hanna Neumann.* XVII Colloquium of Graph Theory, Combinatorics, and Applications. Xalapa, Mexico, 2002.
- **AMS Annual Meeting.** *Amalgams of nilpotent groups of class two.* Contributed talk in Group Theory. San Diego, CA, 2002.
- **Instituto de Matemáticas, UNAM.** *Amalgamas, o cómo pegar dos grupos.* Colloquium of the Mathematics Institute. Mexico City, Mexico, 2001.
- **University of California, Santa Barbara.** *Gluing group.* First Annual UC Berkeley-UC Santa Barbara Algebra Day. Santa Barbara, CA, 2001.
- **Annual Meeting of the AMS.** *Amalgamation bases for nilpotent groups of class two and odd exponent.* Contributed talk in Group Theory. New Orleans, LA, 2001.
- **Vanderbilt University.** *A (somewhat) biased look at dominions and epimorphisms.* First Annual Thomasina Coverly Memorial Conference on Ordered Sets and Universal Algebra. Nashville, TN, 2000.
- **Tufts University.** *How to glue groups together.* Mathematics Department Colloquium. Somerville, MA, 2000.
- **University of Melbourne.** *Dominions in decomposable varieties of groups.* 17th Annual Victoria Algebra Conference. Melbourne, Australia, 1999.

- **IAS-Park City Mathematics Institute.** Participant in Summer School in Arithmetic Algebraic Geometry. Park City, UT, 1999.
- **Tulane University.** *Amalgamation bases for nilpotent groups of class two.* Conference on Algebra in Honor of Laszlo Fuchs. New Orleans, LA, 1999.
- **University of California at Berkeley.** *Amalgamation bases for nilpotent groups of class two.* Geometric Group Theory Seminar. Berkeley, CA, 1998.
- **Annual Meeting of the Sociedad Matemática Mexicana.** *Dominios y epimorfismos no suprayectivos en variedades de grupos.* Featured talk in Group Theory. Hermosillo, Mexico, 1998.
- **University of Arkansas, Fayetteville.** *Dominions in varieties of nilpotent groups.* Conference on Combinatorial Methods in Algebra. Fayetteville, AK, 1998.
- **University of California at Berkeley.** *Varieties of groups are the spice of life.* Graduate Student Colloquium, Department of Mathematics. Berkeley, CA, 1997.
- **University of California at Berkeley.** *Gödel's Incompleteness Theorem.* Graduate Student Colloquium, Department of Mathematics. Berkeley, CA, 1996.
- **University of California at Berkeley.** *Underlying sets, adjoint functors, and other 'Abstract Nonsense'.* Graduate Student Colloquium, Department of Mathematics. Berkeley, CA, 1996.
- **University of California at Berkeley.** *The dominions of Isbell.* General Algebra Seminar, Department of Mathematics. Berkeley, CA, 1996.
- **Annual Meeting of the Sociedad Matemática Mexicana.** *Generalización de condiciones suficientes para la existencia de núcleos en digráficas.* Contributed talk in Graph Theory. Guanajuato, Mexico, 1992.

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