Matthew Dawson

Personal Data

Address:	Matthew Dawson	Email:	matthew.dawson@cimat.mx
	CIMAT, Jalisco S/N	Website:	http://personal.cimat.mx:8181/∼matthew.dawson
	Colonia Valenciana	Citizenship:	United States
	Guanajuato, GTO 36240	Birth Year:	1990
	México		

Academic Background

- **Education**

  1. Bachelor of Science in Mathematics, Union University, Jackson, Tennessee, 2008.

  2. M.Sc. in Mathematics, Louisiana State University, Baton Rouge, Louisiana, 2010.

  3. Ph.D. in Mathematics, Louisiana State University, Baton Rouge, Louisiana, 2014 under the direction of Gestur Olafsson.
     Title of thesis: "Conical representations for direct limits of Riemannian symmetric spaces."

- **Work Experience**

  2. Postdoctoral researcher at El Centro de Investigación en Matemáticas (CIMAT) en Guanajuato, Mexico since September 2014.

  1. Programmer at Datatel, Inc. in Fairfax, Virginia, Summer 2007.

- **Research Areas**

  1. Representation theory: Unitary representations for direct limits of Lie groups and symmetric spaces.

  2. Harmonic analysis: Invariant means and quasi-invariant measures for direct limits of Lie groups.

  3. Analysis: Toeplitz operators over bounded symmetric domains.

- **Membership in Academic Societies**

  - The American Mathematical Society (AMS) since 2008.
  - La Sociedad Matemática Mexicana (SMM) since 2015.
  - El Sistema Nacional de Investigadores (SNI) in Mexico as candidate member starting January 2016.

- **Awards and Fellowships**

  5. VIGRE Dissertation Year Trainee, LSU, August–December 2013.

  4. VIGRE Doctoral Dissertation Trainee, LSU, August 2012 to May 2013.

  3. Board of Regents Fellow, Louisiana State University, August 2008 to December 2011.

  2. Pasquale Porcelli Academic Excellence Award of the math department at LSU, Spring 2009 (awarded to one student per year).

  1. MAA Outstanding Undergraduate Student Presentation Award, MathFest 2008, Madison, Wisconsin.

Research Papers

5. M. Dawson, G. Ólafsson, R. Quiroga. *An Application of the Restriction Method for the Holomorphic Discrete Series to the Commutativity of Toeplitz Operators.* In progress.

4. M. Dawson, G. Ólafsson. *Conical Representations and Direct Limits of Symmetric Spaces.* Submitted. arXiv:1511.07045

3. M. Dawson, G. Ólafsson. *A Survey of Amenability Theory for Direct-Limit Groups*, Trends in Harmonic Analysis and Its Applications, Contemp. Math. **650** (2015), 89–109.

2. M. Dawson, G. Ólafsson, R. Quiroga. *Commuting Toeplitz Operators on Bounded Symmetric Domains and Multiplicity-Free Restrictions of Holomorphic Discrete Series.* Journal of Functional Analysis **268** (2015), No. 7, 1711–1732.

1. M. Dawson, G. Ólafsson, J. A. Wolf. *Direct Systems of Spherical Functions and Representations.* Journal of Lie Theory **23** (2013), No. 3, 711–729.

Expository Papers

1. M. Dawson. *Bridging the Group Definition Gap.* Harvard College Mathematics Review **2** (2008), No. 1, 34 – 42.

Teaching and Service

- **Classes Taught**

    4. Analysis 1 for new master's degree students at CIMAT, Fall 2015.
    3. Graduate seminar on representations of semisimple Lie groups, CIMAT, Spring 2015.
    2. Calculus 1, LSU, Spring 2014.
    1. Calculus 1, LSU, Spring 2010.

- **Other Educational Activity**

    3. Grader for differential equations and functional analysis classes, Spring 2012.
    2. Mentor for students in the SMILE REU at LSU, Fall 2010.
    1. Mentor for students in the SMILE REU at LSU, Fall 2009.

- **Administrative Service**

    3. Organizer of the student harmonic analysis seminar at LSU, August 2013 to May 2014.
    2. Member of the GEAUX committee for organizing the two-week orientation program for new graduate students, 2010–2011.
    1. Chair of the student colloquium committee for the LSU math department, August 2009 to August 2011.

Talks and Conference Participation

- **Conference Talks**

    9. *Commuting Toeplitz operators and holomorphic discrete series representations*, Fall Eastern sectional meeting of the AMS, Rutgers University, New Brunswick, New Jersey, November 15, 2015.

8. *Representation-theoretic methods in Toeplitz-operator theory*, International workshop on the Weiner-Hopf method, Toeplitz operators, and their applications, Boca del Río, Veracruz, Mexico, November 3–7, 2015.

7. *Commuting Toeplitz operators and holomorphic discrete series representations*, International conference on harmonic analysis and applications, CUNY Graduate Center, New York, June 5, 2015.

6. *Invariant means and harmonic analysis on direct-limit groups*, Workshop on representation theory and analysis on Lie groups over local fields, U. Ottawa, Ottawa, Canada, May 9, 2015.

5. *Representations of direct-limit Lie groups*, congreso sobre non-associative algebra and Lie theory, Oaxaca, Oaxaca, México, January 30, 2015.

4. *Conical representations for direct limits of Riemannian symmetric spaces*, workshop "Análisis: Norte-Sur 2014," Mexico City, November 22, 2014.

3. *Conical representations for direct limits of Riemannian symmetric spaces*, AMS Spring Sectional Meeting, Lubbock, Texas, April 12, 2014.

2. *Direct systems of spherical functions and representations*, Lie theory workshop, University of California, Berkeley, California, November 5, 2011.

1. *Bridging the group definition gap*, MAA MathFest, Madison, Wisconsin, July 31 – August 2, 2008.

- **Poster Presentations**

   1. *Direct systems of spherical functions and representations*, Workshop in Geometric Analysis on Euclidean and Homogeneous Spaces, Tufts University, Boston, Massachusetts, January 9, 2012.

- **Local Talks**

   17. *Operadores de Toeplitz y la serie discreta holomorfa de representaciones* (Toeplitz operators and holomorphic discrete series representations), Diferential geometry seminar in CIMAT, November 23, 2015.

   16. *Conical Representations and the Radon Transform*, harmonic analysis seminar in CIMAT, Fall 2014.

   15. *Recent progress in infinite-dimensional Lie groups*, CIMAT colloquium, September 25, 2013.

   14. *Conical representations of direct-limit groups*, harmonic analysis seminar, LSU, September 18, 2013.

   13. *Introduction to invariant means and their applications to harmonic analysis*, harmonic analysis student seminar, LSU, September 11, 2013.

   12. *An introduction to harmonic analysis*, GEAUX Program at LSU for incoming graduate students, August 19, 2013.

   11. *An introduction to measure theory*, GEAUX Program, LSU August 16, 2012.

   10. *A brief overview of direct limits and group representations*, GEAUX Program, LSU, August 7, 2012.

   9. *Introduction to direct integrals and the abstract Plancherel formula* for the seminar "Everything You Ever Wanted To Know About $SL(2, \mathbb{R})$," LSU, Spring 2012.

   8. *The spherical transform on the unit disk*, for the seminar "Everything You Ever Wanted To Know About $SL(2, \mathbb{R})$," LSU, Fall 2011.

   7. *Introduction to Lie theory and the Bruhat decomposition* for the seminar class on cluster algebras, LSU, Spring 2011.

   6. *On invariant vectors, spheres, and direct limits*, graduate student harmonic analysis seminar, LSU January 24, 2011.

   5. *Introduction to the technical details of direct limits* for the seminar class "Analysis on the Sphere," LSU August 27, 2010.

4. *Review of multivariable real analysis*, GEAUX Program, LSU, Baton Rouge, Louisiana, 20 de agosto de 2010.

3. *Discrete series representations of* $\mathrm{SL}(2,\mathbb{R})$ for the seminar class "Representation Theory and Physics," LSU, Spring 2010.

2. *Quantum mechanics and the hydrogen atom* for the seminar class "Representation Theory and Physics," LSU, November 24, 2009.

1. *Interchanging Limits*, GEAUX Program, LSU, August 21, 2009.

- **Conference Attendance**

21. Fall eastern sectional meeting of the AMS, special session on reductive Lie groups, Rutgers University, New Brunswick, New Jersey, November 14-15, 2015.

20. International workshop on the Weiner-Hopf method, Toeplitz operators, and their applications, Boca del Río, México, November 3–7, 2015.

19. Inaugural geometry lectures at CIMAT Mérida, Mérida, Veracruz, México, September 30 – October 2, 2015.

18. International conference on harmonic analysis and applications, CUNY Graduate Center, New York, June 1–5, 2015.

17. Representation theory and analysis on Lie groups over local fields, U. Ottawa, Ottawa, Canada, May 7–10, 2015.

16. Seventh minimeeting in differential geometry, CIMAT, Guanajuato, Mexico, February 17–19, 2015.

15. Conference on non-associative algebra and Lie theory, Oaxaca, Oaxaca, Mexico, January 26–30, 2015.

14. Workshop "Análisis: Norte-Sur 2014", Mexico City, November 20–22, 2014.

13. AMS spring sectional meeting, Lubbock, Texas, April 11–13 2014.

12. AMS and MAA Joint Meetings, Baltimore, Maryland, January 15–18, 2014.

11. Southeastern Lie Theory Workshop, LSU, Baton Rouge, Louisiana, May 10–12, 2013.

10. AMS and MAA Joint Meetings, San Diego, California, January 9–12, 2013.

9. Lie Theory Workshop, LSU, Baton Rouge, Louisiana, October 6–7, 2012.

8. Workshop in Geometric Analysis on Euclidean and Homogeneous Spaces, Tufts University, Boston, Massachusetts, January 8–9, 2012.

7. AMS and MAA Joint Meetings, Boston, Massachusetts, January 4–7, 2012.

6. Lie Theory Workshop, University of California, Berkeley, California, November 5–6 2011.

5. Lie Theory Workshop, LSU, Baton Rouge, Louisiana, February 12–13, 2011.

4. AMS and MAA Joint Meetings, New Orleans, Louisiana, January 6–9, 2011.

3. Workshop in Analysis and Geometry, LSU, Baton Rouge, Louisiana, January 4–5, 2011.

2. AMS and MAA Joint Meetings en San Fransisco, January 13–16, 2010.

1. MAA MathFest Madison, Wisconsin, July 31 – August 2, 2008.