

# Florent P. Baudier

## Curriculum Vitae

Department of Mathematics  
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### Biographical and Additional Information

Citizenships: French, US Permanent Resident

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### Current Position

08/19– **Assistant Professor**, Texas A&M University, College Station, Texas.

### Articles Published in Peer-Reviewed Journals

(lastname<sup>(g)</sup>: graduate student, lastname<sup>(p)</sup>: postdoc)

14. F. Baudier, K. Swięcicki<sup>(g)</sup>, and A. Swift<sup>(p)</sup>, *No dimension reduction for doubling subsets of  $\ell_p$ ,  $p > 2$ , revisited*, to appear in J. Math. Anal. Appl., **504** (2021), no.2, 125407.
13. F. Baudier, P. Motakis<sup>(p)</sup>, Th. Schlumprecht, and A. Zsák, *On the bi-Lipschitz geometry of lamplighter graphs*, Discrete Comput. Geom., **66** (2021), no.1, 181-214.
12. F. Baudier, G. Lancien, P. Motakis<sup>(p)</sup>, and Th. Schlumprecht, *Coarse and Lipschitz universality*, Fund. Math., **254** (2021), no. 2, 181-214.
11. F. Baudier, G. Lancien, and Th. Schlumprecht, *The coarse geometry of Tsirelson's space and applications*, J. Amer. Math. Soc., **31** (2018), no. 3, 699-717.
10. F. Baudier, R. Causey<sup>(p)</sup>, S. Dilworth, D. Kutzarova, N. L. Randrianarivony, Th. Schlumprecht, and S. Zhang<sup>(g)</sup>, *On the metric geometry of the countably branching diamond graphs*, J. Funct. Anal., **273**, (2017), no. 10, 3150-3199.
9. F. Baudier, D. Freeman, Th. Schlumprecht, and A. Zsák, *The metric geometry of the Hamming cube and applications*, Geom. Topol., **20**, (2016), no. 3, 1427-1444.
8. F. Baudier and S. Zhang<sup>(g)</sup>,  *$(\beta)$ -distortion of some infinite graphs*, J. Lond. Math. Soc. (2), **93** (2016), no. 2, 481-502.
7. F. Baudier, *Quantitative nonlinear embeddings into Lebesgue sequence spaces*, J. Topol. Anal., **8** (2016), no. 1, 117-150.
6. F. Baudier and G. Lancien, *Tight embeddability of proper and stable metric spaces*, Anal. Geom. Metr. Spaces, **3** (2015), 140-156.
5. F. Albiac and F. Baudier, *Embeddability of snowflaked metrics with applications to the nonlinear geometry of the spaces  $L_p$  and  $\ell_p$  for  $0 < p < \infty$* , J. Geom. Anal. **25** (2015), no. 1, 1-24.
4. F. Baudier, *Embeddings of proper metric spaces into Banach spaces*, Houston J. Math. **38** (2012), no. 1, 209-223.

3. F. Baudier, N. J. Kalton, and G. Lancien, *A new metric invariant for Banach spaces*, *Studia Math.* **199** (2010), no. 1, 73-94.
2. F. Baudier and G. Lancien, *Embeddings of locally finite metric spaces into Banach spaces*, *Proc. Amer. Math. Soc.* **136** (2008), 1029-1033.
1. F. Baudier, *Metrical characterization of super-reflexivity and linear type of Banach spaces*, *Archiv Math.* **89** (2007), 419-429.

### Articles Published in Peer-Reviewed Conference Proceedings

1. F. Baudier and R. Deville, *Lipschitz embeddings into  $c_0$* , *Harmonic Analysis, Function Theory, Operator Theory, and Their Applications: Conference Proceedings, Bordeaux, June 1-4, 2015*, (2018), 29-42.

### Articles Accepted for Publication in Peer-Reviewed Journals

2. F. Baudier, G. Lancien, P. Motakis<sup>(p)</sup>, and Th. Schlumprecht, *The geometry of Hamming-type metrics and their embeddings into Banach spaces*, to appear in *Israel J. Math.* (2020), arXiv:2004.04805, 29 pages.
1. F. Baudier, G. Lancien, P. Motakis<sup>(p)</sup>, and Th. Schlumprecht, *A new coarsely rigid class of Banach spaces*, *J. Inst. Math. Jussieu*, **online first**, (2020), 19 pages.

### Preprints Submitted for Publication in Peer-Reviewed Journals

4. F. Baudier, B. de Mendonça Braga<sup>(p)</sup>, Ilijas Farah, Ana Khukhro, Alessandro Vignati, R. Willett, *Uniform Roe algebras over uniformly locally finite metric spaces are rigid*, submitted (2021), arXiv:2106.11391, 25 pages.
3. F. Baudier and C. Gartland<sup>(p)</sup>, *Umbel convexity and the geometry of trees*, submitted (2021), arXiv:2103.16011, 46 pages.
2. F. Baudier, *Barycentric gluing and geometry of stable metrics*, submitted (2020), arXiv:1409.7738v2, 37 pages.
1. F. Baudier, P. Motakis<sup>(p)</sup>, and Th. Schlumprecht, and A. Zsák, *Stochastic approximation of lamplighter metrics*, submitted (2020), arXiv:2003.06093, 22 pages.

### Other Publications

2. F. Baudier, *Asymptotic structure and nonlinear geometry of Banach spaces*, MFO Report 19/2018, (2018), (contribution to the report for the Oberwolfach Mini-Workshop: Superexpanders and Their Coarse Geometry).
1. F. Baudier and W. B. Johnson, Review of the book *Embeddings: bilipschitz and coarse embeddings*, by M. I. Ostrovskii, *Bull. Amer. Math. Soc.* **53** (2016), 495-506.

### Monographs in Preparation

2. F. Baudier, G. Lancien, and A. Procházka, *Nonlinear Geometry of Banach Spaces*, in preparation, commissioned by the Société Mathématique de France and to appear in the series "Cours Spécialisés".
1. F. Baudier, *Geometric Embeddings and Metric Invariants*, in preparation.

### Mentoring

## Postdocs, Visiting Assistant Professors

2020-2023 **C. Gartland**, *Texas A&M University*.

## Ph.D. Students

in progress **K. Swieçicki**, *Texas A&M University*.  
*co-advisor Prof. G. Yu*

2014-2018 **A. Swift**, *Texas A&M University*, now a Robotic Process Automation Programming Analyst at American Fidelity after holding a Visiting Assistant Professor position at the University of Oklahoma (2018-2020).  
*co-advisor Prof. Th. Schlumprecht*

## Graduate Students

Spring 2021 **M. Mathey-Prévot**, *Université de Neuchâtel*, Master Thesis on Transportation Metrics.  
*co-advisor Prof. A. Valette*.

2018 **K. Swieçicki**, *Texas A&M University*, Research on equivariant embeddings, MATH 691, Summer semester.

## Undergraduate Students

Sum. 2021 **D. Finkel**, *Texas A&M University*, Coarse embeddability between Lebesgue spaces, MATH 485 Directed Studies.

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## Grants, Fellowships, Scholarships

### Federal and State Grants

2021-2024 **PI, NSF standard grant**, *Geometry of Graphs and Banach Spaces*, reference number DMS-2055604, funding period 07/01/2021-06/30/2024, total amount: \$249,460.

2020-2022 **PI, NSF continuing grant**, (*co-PIs I. Holmes, W. B. Johnson, E. Procaccia*) *Workshop in Analysis and Probability*, reference number DMS-1900844, funding period 06/01/2019-05/31/2022, total amount: \$174,000.

2020-2023 **AIM SQuaRE grant**, *Expanders, Ghosts, and Roe Algebras*, SQuaRE group composed of F. Baudier, B. de Mendonça Braga, I. Farah, A. Khukhro, A. Vignati, R. Willett.

2018-2022 **PI, NSF standard grant**, *Banach Spaces and Graphs: Geometric Interactions and Applications*, reference number DMS-1800322, funding period 07/01/2018-06/30/2022, total amount: \$112,771.

2014-2016 **PI, ANR research grant (Agence Nationale de la Recherche, French national research agency)**, *NoLiGeA Project*, reference number ANR-13-PDOC-0031, funding period January 2014-January 2016, total amount: 150,000€ (\$195,000).

2013-2015 **Co-PI, FAPESP research grant (São Paulo Research Foundation, state of São Paulo (Brazil) research agency)**, (*PI Prof. V. Ferenczi, USP*) *Somas torcidas, posicoes, e teoria de Ramsey*, reference number 2013/11390-4, funding period: October 2013-September 2015, total amount: 76,398 R\$ (\$34,380).

### Fellowships and Scholarships

Fall 2011 **Invited research member**, *MSRI, Berkeley, California*, partially supported by an NSF grant DMS-0932078 administered by the MSRI.

2010-2012 **Fields Postdoctoral Fellowship**, *Thematic Program on Asymptotic Geometric Analysis (6 months) and University of Alberta (18 months)*, declined.

2005-2008 **Ph.D. scholarship**, *Université de Franche-Comté*, Besançon, France.

#### Other external and internal grants

2014 **Internal grant**, from the *Équipe d'Analyse Fonctionnelle, Université Pierre et Marie Curie (Paris 6)*, to support the organization of the Fall School “Metric Embeddings: Obstructions and Constructions”, total amount: 1,000 €.

**External grant**, from the *GDR AFHP*, to support the organization of the Fall School “Metric Embeddings: Obstructions and Constructions”, total amount: 1,000 €.

**Internal grant**, from the *Institut de Mathématiques de Jussieu-Paris Rive Gauche*, to support the organization of the Fall School “Metric Embeddings: Obstructions and Constructions”, total amount: 3,000 €.

**External grant**, from the “*Function Theory on Infinite Dimensional Spaces XIII*” organizing committee, covering the regular registration fee, the local expenses and accommodation expenses, total amount: equivalent of 1,500 €.

2009 **External grant**, from the *CCCI (Commission des Colloques et Congrès Internationaux)*, to attend the Workshop on Quantitative and Computational Aspects of Metric Geometry, IPAM, UCLA, California (January 2009), total amount: 1,000 €.

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#### Awards

2019 **2018-2019 Departmental Outstanding Teaching Award**, *Texas A&M University*.

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#### Conference Talks

2021 **Spring Eastern Sectional Meeting of the AMS**, virtual (formerly at *Brown University, Providence, RI*), Special Session on Metric Techniques in Analysis, (March 2021).

*invited speaker (20-minute talk)*

2020 **10ème Rencontres d'Analyse Fonctionnelle Besançon-Neuchâtel**, *Université de Neuchâtel*, Neuchâtel, Suisse, (originally June 2020, postponed).

*main speaker (50-minute talk)*

**Entangling Noncommutative Functional Analysis and Geometry of Banach Spaces**, *CIRM (Centre International de Rencontres Mathématiques)*, Luminy, France, virtual (October 2020).

*main speaker (50-minute talk)*

2019 **Geometry and Analysis: Celebrating the Mathematics of Pierre Pansu**, *Mathematical Institute University of Oxford*, Oxford, UK, (September 2019).

*main speaker (1-hour talk)*

**Spring Eastern Sectional Meeting of the AMS**, *University of Connecticut, Hartford, CT*, Special Session on Banach Space Theory and Metric Embeddings, (April 2019).

*invited speaker (20-minute talk)*

2018 **Recent Advances in Functional Analysis, dedicated to the memory of Joe Diestel and Victor Lomonosov**, *Kent State University*, Kent, Ohio, USA, (October 2018).

*invited speaker (20-minute talk)*

- SUMIRFAS 2018**, *Texas A&M University*, College Station, Texas, (August 2018).  
*main speaker (50-minute talk)*
- Workshop on Large Scale Geometry and Applications**, *The Fields Institute for Research in Mathematical Sciences*, Toronto, Canada, (May 2018).  
*main speaker (45-minute talk)*
- Mini-Workshop: Superexpanders and Their Coarse Geometry**, *MFO, Oberwolfach Research Institute for Mathematics*, Oberwolfach, Germany, (April 2018).  
*main speaker (two 1-hour lectures)*
- Non Linear Functional Analysis**, *CIRM (Centre International de Rencontres Mathématiques)*, Luminy, France, (March 2018).  
*main speaker (45-minute talk)*
- 2017 **Virginia Operator Theory and Complex Analysis Meeting (VOTCAM)**, *University of Virginia*, Charlottesville, VA, (October 2017).  
*main speaker (1-hour talk)*
- Fall Central Sectional Meeting of the AMS**, *University of North Texas*, Denton, TX, Special Session on Banach Spaces and Applications, (September 2017).  
*invited speaker (40-minute talk)*
- Spring Eastern Sectional Meeting of the AMS**, *Hunter College, City University of New York*, New York, NY, Special Session on Banach Space Theory and Metric Embeddings, (May 2017).  
*invited speaker (20-minute talk)*
- 2016 **Annual Meeting of the French Functional Analysis Research Network (GDR AFHP)**, *Institut de Mathématiques de Toulouse*, Toulouse, France, (October 2016).  
*plenary speaker (50-minute talk)*
- 6ème Rencontres d'Analyse Fonctionnelle Besançon-Neuchâtel**, *LMB, Université de Franche-Comté*, Besançon, France, (June 2016).  
*main speaker (50-minute talk)*
- Workshop in Functional Analysis**, *Universidad Politécnica de Cartagena*, Cartagena, Spain, (June 2016).  
*plenary speaker (declined)*
- 2015 **Relations Between Banach Space Theory and Geometric Measure Theory**, *Mathematics Institute, University of Warwick*, Coventry, England, (June 2015).  
*invited speaker (30-minute talk)*
- Banach spaces and their applications in analysis**, *CIRM (Centre International de Rencontres Mathématiques)*, Luminy, France, (January 2015).  
*main speaker (50-minute talk)*
- 2014 **Conference on Geometric Functional Analysis and its Applications**, *LMB, Université de Franche-Comté*, Besançon, France, (October 2014).  
*main speaker (50-minute talk)*
- Banach Methods in Non Commutative Geometry**, *Fudan University*, Shanghai, China, (June 2014).  
*plenary speaker (50-minute talk)*
- 4ème Rencontres d'Analyse Fonctionnelle Besançon-Neuchâtel**, *LMB, Université de Franche-Comté*, Besançon, France, (May 2014).  
*main speaker (45-minute talk)*

- Function Theory on Infinite Dimensional Spaces XIII**, *Instituto de Ciencias Matemáticas*, Madrid, Spain, (February 2014).  
*invited speaker (30-minute talk)*
- Joint Mathematics Meeting**, *Baltimore, Maryland*, Special Session on Banach Spaces, Metric Embeddings and Applications, (January 2014).  
*invited speaker (20-minute talk)*
- 2013 **Fall Central Sectional Meeting of the AMS**, *Washington University, St. Louis, Missouri*, Special Session on Linear and Non-linear Geometry of Banach Spaces, (October 2013).  
*invited speaker (20-minute talk)*
- Banach Spaces: Geometry and Analysis**, *Institute of Advanced Studies (IAS) at the Hebrew University of Jerusalem*, Jerusalem, Israel, (May 2013).  
*contributed talk (30-minute talk)*
- 2012 **Annual Meeting of the French Functional Analysis Research Network (GDR AFHA)**, *Université de Marne La Vallée*, Paris, France, (October 2012).  
*contributed talk (30-minute talk)*
- Banach Space Theory**, *Banff International Research Station (BIRS)*, Banff, Alberta, Canada, (March 2012).  
*main speaker (50-minute talk)*
- 2011 **Embedding Problems in Banach Spaces and Group Theory**, *Mathematical Science Research Institute (MSRI)*, Berkeley, California, (October 2011).  
*main speaker (50-minute talk)*
- Discrete Analysis Embeddings Workshop**, *Isaac Newton Institute for Mathematical Sciences (INIMS)*, Cambridge, England, (January 2011).  
*main speaker (50-minute talk)*
- 2010 **SUMIRFAS 2010**, *Texas A&M University*, College Station, Texas, (August 2010).  
*invited speaker (30-minute talk)*
- 2009 **Function Theory on Infinite Dimensional Spaces XI**, *Universidad Complutense de Madrid*, Madrid, Spain, (December 2009).  
*contributed talk (30-minute talk)*
- Annual Meeting of the French Functional Analysis Research Network (GDR AFHA)**, *Université de Franche-Comté, Besançon*, France, (November 2009).  
*contributed talk (30-minute talk)*
- 2009 **Affine Isometric Actions of Discrete Groups**, *Centro Stefano Franscini*, Ascona, Switzerland, (July 2009).  
*contributed talk (30-minute talk)*
- 2008 **Annual Meeting of the French Functional Analysis Research Network (GDR AFHA)**, *Université d'Orléans*, Orléans, France, (October 2008).  
*contributed talk (30-minute talk)*
- Spring Conference on Banach spaces**, (*Organized by the Mathematical Institute of Czech Academy of Sciences, Prague*), Pázeky, Czech Republic, (April 2008).  
*contributed talk (30-minute talk)*
- 2007 **Geometric Linearization of Graphs and Groups**, *Centre Interfacultaire Bernoulli*, EPFL Lausanne, Switzerland, (January 2007).  
*invited contributed talk (20-minute talk)*

- 2006 **Annual Meeting of the French Functional Analysis Research Network (GDR AFHA)**, *Université des Sciences et Technologies de Lille*, Lille, France, (September 2006).  
*contributed talk* (30-minute talk)

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## Lecture Series, Mini-courses, Schools

- 2015 **Group Actions and Metric Embeddings**, *Kyoto University*, Kyoto, Japan, (September 2015).  
*mini-course speaker* (three 1-hour talks)
- 2010 **Lectures of the 3rd Roman Cycle**, *Institut de Mathématiques de Neuchâtel*, Embeddings of Metric Spaces and Applications, (Spring 2010).  
*semester-long course*
- 2009 **Summer School, Geometry and Analysis in the Theory of Computation**, *Indiana University*, Bloomington, Indiana, (August 2009).  
*2-hour lecture*

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## Colloquium and Seminar Talks

- 2021 **Functional Analysis and Descriptive Set Theory Seminar**, *University of São Paulo*, virtual, São Paulo, Brazil (June 2021).  
**Operator Theory Seminar at UVA**, *University of Virginia*, Richmond, virtual (February 2021).
- 2020 **Banach Spaces Webinar**, *University of North Texas*, Denton, virtual, moderated by Buyamin Sari, (July 2020).  
**Analysis Seminar**, *University of Connecticut*, Hartford, Connecticut, (originally April 2020-postponed).
- 2019 **Colloquium**, *University of Mississippi*, Oxford, Mississippi, (March 2019).  
**Groups and Dynamics Seminar**, *Texas A&M University*, College Station, Texas, (February 2019).  
**Colloquium**, *Iowa State University*, Ames, Iowa, (February 2019).  
**Colloquium**, *Texas A&M University*, College Station, Texas, (January 2019).
- 2018 **Analysis Seminar**, *University of Houston*, Houston, Texas, (October 2018).  
**Colloquium**, *Saint Louis University*, Saint Louis, Missouri, (April 2018).
- 2017 **Séminaire d'Analyse Fonctionnelle**, *IMJ-PRG, Université Paris VI-Pierre et Marie Curie*, Paris, France, (June 2017).  
**Functional Analysis Seminar**, *Université de Franche-Comté*, Besançon, France, (June 2017).
- 2016 **Functional Analysis Seminar**, *Université de Franche-Comté*, Besançon, France, (May 2016).  
**Calderón-Zygmund Analysis Seminar**, *University of Chicago*, Chicago, Illinois, (March 2016).
- 2015 **Analysis Seminar**, *Miami University*, Oxford, Ohio, (November 2015).  
**Colloquium**, *Miami University*, Oxford, Ohio, (November 2015).  
**Analysis Seminar**, *University of Illinois at Urbana-Champaign*, Urbana-Champaign, Illinois, (October 2015).

- Colloquium**, *Florida Atlantic University*, Boca Raton, Florida, (September 2015).
- Groups and Analysis Seminar**, *Université de Neuchâtel*, Switzerland, (June 2015).
- Séminaire d’Initiation à l’Analyse**, *IMJ-PRG, Université Paris VI-Pierre et Marie Curie*, Paris, France, (June 2015).
- Logic Seminar**, *University of Illinois at Chicago*, Chicago, Illinois, (March 2015).
- Analysis Seminar**, *Universidad Complutense de Madrid*, Madrid, Spain, (January 2015).
- 2014 **Functional Analysis Seminar**, *Universidade de São Paulo*, São Paulo, Brazil, (August 2014).  
two talks
- Séminaire d’Initiation à l’Analyse**, *Université Paris VI-Pierre et Marie Curie*, Paris, France, (January 2014).
- Colloquium**, *Kansas State University*, Manhattan, Kansas, (January 2014).
- 2013 **Interview Maître de Conférence (ranked 6<sup>th</sup>)**, *Université Paris VII-Denis Diderot*, Paris, France, (May 2013).
- Functional Analysis Seminar**, *Université de Franche-Comté*, Besançon, France, (May 2013).
- Millican Colloquium**, *University of North Texas*, Denton, Texas, (April 2013).
- 2012 **Groups and Dynamics Seminar**, *Texas A&M University*, College Station, Texas, (October 2012).
- Analysis Seminar**, *Universidad Complutense de Madrid*, Madrid, Spain, (June 2012).
- Analysis Seminar**, *Universidad Pública de Navarra*, Pampelona, Spain, (June 2012).
- 2011 **Functional Analysis Seminar**, *Université de Franche-Comté*, Besançon, France, (January 2011).
- 2010 **Groups and Analysis Seminar**, *Université de Neuchâtel*, Switzerland, (December 2010).
- 2009 **Colloquium of the Mathematical Analysis Department**, *Universidad Complutense de Madrid*, Madrid, Spain, (October 2009).
- Functional Analysis Seminar**, *Université des Sciences et Technologies de Lille*, Lille, France, (May 2009).
- 2008 **Workshop on Operator Algebras**, *Université d’Orléans*, Orléans, Orléans, France. (February 2008)
- Analysis Seminar**, *IMB, Université de Bordeaux 1*, Bordeaux, France, (March 2008).

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## Synergistic Activities

### Conference Organization

- 2022 **Joint AMS-SMF-EMS Meeting**, *Special Session on “Quantitative Geometry of Transportations Metrics”*, Grenoble, France, postponed (originally 5-9 July 2020).  
*chair* (co-organizers Profs. D. Cordero-Erausquin, A. Eskenazis, and E. Pernecka)
- 2021 **SUMIRFAS 2021**, *Texas A&M University, College Station, Texas*, July 30-August 1 2021, hybrid.  
*chair* (co-organizers Profs. W. B. Johnson, I. Holmes, E. Procaccia)



- 2016 **Workshop in Analysis and Probability**, Concentration Week on “Metric Spaces: Analysis, Embeddings into Banach Spaces, and Applications”, Texas A&M University, College Station, Texas, 5-9 July 2016.  
*chair* (co-organizers Profs. M. Ostrovskii, Th. Schlumprecht, and N. Randrianarivony)
- 2014 **Fall School**, *Metric Embeddings: Constructions and Obstructions*, Institut Henri Poincaré, Paris, France, 3-7 November 2014.  
*chair* (co-organizers Profs. G. Godefroy, P. Pansu, and R. Tessera)
- First Brazilian Workshop in Geometry of Banach Spaces**, Maresias, São Paulo state, Brazil, 25-29 August 2014.  
*organizer* (co-organizers Profs. J. L. Abad, C. Brech, V. Ferenczi (*chair*), and E. Galego)
- 2011 **Workshop in Analysis and Probability**, Concentration Week on “Non-Linear Geometry of Banach Spaces, Differentiability and Geometric Group Theory”, Texas A&M University, College Station, Texas, 1-5 August 2011.  
*chair* (co-organizers Profs. W. B. Johnson, P. Nowak, and B. Sari)
- 2010 **Rencontres d’Analyse Fonctionnelle Neuchâtel-Besançon**, Université de Neuchâtel, Neuchâtel, Switzerland, 3-4 June 2010.  
*founder and organizer* (co-founder and co-organizer Prof. A. Valette)

### Seminar Organization

**Banach and Metric Space Geometry Seminar**, Texas A&M University, (2020–).  
*main organizer*

**Working Seminar on Nonlinear Geometries**, Texas A&M University, (2012–).  
*organizer* (co-organizer Prof. G. Paouris)

**Banach Spaces Seminar**, Texas A&M University, (2010-2016).  
*main organizer*

### Service Activities

**Academic Professional Track Committee**, Texas A&M University-Department of Mathematics, Fall 2018-2020.  
*elected member*

**Academic Professional Track Teaching Committee**, Texas A&M University-Department of Mathematics, Fall 2018.  
*appointed member*

**Graders and Undergraduate Teaching Assistants Operations**, Fall 2018-Fall 2019.  
*appointed supervisor*

### Outreach Activities

Outreach talk at the Texas A&M Math Club (April 2017).

Title: When the spaces of Stefan Banach and Maurice Fréchet meet the approximation algorithms of theoretical computer scientists.

### Editorial Activities

- Referee Ann. Funct. Anal.  
Bull. Belg. Math. Soc. Simon Stevin – Bul. Lond. Math. Soc.  
Discrete Math.  
Colloquium Mathematicum  
Forum Math. Pi

Houston J. Math.  
 Int. Math. Res. Not. IMRN – Israel J. Math. – Invent. Math.  
 J. Approx. Theory – J. Funct. Anal. – J. Math. Anal. Appl. – J. Topol. Anal.  
 Math. Ann. – Mathematical Inequalities & Applications – Mediterr. J. Math.  
 Nat. Acad. Sci. Lett.  
 Positivity – Proc. Amer. Math. Soc.  
 Proceedings volume for the conference on Operator Theory and its Applications  
 Studia Math.  
 Trans. Amer. Math. Soc.

Reviewer Zentralblatt MATH (since 2013).  
 MathSciNet (since 2010).

### Scientific Organization Memberships

American Mathematical Society (since 2012)  
 Société Mathématique Européenne (since 2012)  
 Société Mathématique de France (since 2012)

## Teaching Experience

### Graduate level

- 2022 **Mathematical Algorithms and their Implementations**, *MATH 689, TAMU*, Spring.  
instructor
- 2020 **Topics Course in “Metric Invariants: Algorithmic and Geometric Applications”**, *MATH 689, TAMU*, Fall.  
instructor
- 2019 **Introduction to classical analysis**, *MATH 615, TAMU*, Fall (from mid-semester).  
instructor
- 2016 **Topics Course in “Geometry of Metric Spaces”**, *MATH 663, TAMU*, Spring.  
instructor

### Undergraduate level

- 2019 **Foundations of Mathematics**, *MATH 300, TAMU*, 2 sections, Fall.  
instructor
- 2018 **Foundations of Mathematics**, *MATH 220, TAMU*, 3 sections, Fall.  
instructor
- 2017 **Foundations of Mathematics**, *MATH 220, TAMU*, 1 section, Fall.  
instructor
- Calculus**, *MATH 172, TAMU*, 2 sections, Fall.  
instructor
- 2016 **Foundation of Mathematics**, *MATH 220, TAMU*, 2 sections, Fall.  
instructor
- Engineering Mathematics I**, *MATH 151, TAMU*, 3 sections, Fall.  
instructor
- 2015 **Differential Equations**, *MATH 308, TAMU*, (2 sections), Fall.  
instructor

- Differential Equations**, *MATH 308, TAMU*, (2 sections), Summer.  
instructor
- Differential Equations**, *MATH 308, TAMU*, (2 sections), Spring.  
instructor
- 2013 **Engineering Mathematics III**, *MATH 251, TAMU*, 2 sections, Fall.  
instructor
- Linear Algebra**, *MATH 304, TAMU*, 1 section, Summer.  
instructor
- Differential Equations**, *MATH 308, TAMU*, 1 section, Spring.  
instructor
- 2012 **Engineering Mathematics I**, *MATH 151, TAMU*, 6 sections, Fall.  
instructor
- Linear Algebra**, *MATH 304, TAMU*, 1 section, Summer.  
instructor
- Engineering Mathematics II**, *MATH 152, TAMU*, 6 sections, Spring.  
instructor
- Differential Equations**, *MATH 308, TAMU*, 1 section, Spring.  
instructor
- 2011 **Engineering Mathematics II**, *MATH 152, TAMU*, 4 sections, Summer.  
instructor
- Engineering Mathematics I**, *MATH 151, TAMU*, 6 sections, Spring.  
instructor
- 2009 **Analysis for 1st year undergraduate biology students**, *Université de Franche-Comté*, Spring.  
teaching assistant in charge of recitations (60 students)
- 2008 **Analysis for 1st year undergraduate biology students**, *Université de Franche-Comté*, Fall.  
teaching assistant in charge of recitations (60 students)
- [Teaching at École Nationale Supérieure de Micro-Mécanique \(ENSMM\)](#)
- 2005–2008 **Additional Analysis and Modeling 2**, (*distribution theory in one dimension, convolution of distributions, Fourier and Laplace transforms of distributions*), ENSMM (Engineering School), Spring and Fall.  
instructor and course coordinator (100 students per semester)
- [Examinator in “Classes préparatoires aux Grandes Écoles” \(CPGE\)](#)
- 2008–2009 **MP section (math-physics second year students)**, *Lycée Victor Hugo, Besançon, France*, weekly, Spring and Fall.  
oral examiner
- 2007–2008 **MPSI section (math-physics first year students)**, *Lycée Victor Hugo, Besançon, France*, weekly, Spring and Fall.  
oral examiner
- [Study Abroad Programs \(Summer semester in Besançon, France\)](#)
- 2020 **Advanced Calculus I**, *MATH 409, TAMU*.

- Directed Studies**, *MATH 485, TAMU.*  
instructor and faculty leader (12 students, program canceled after the recruiting and pre-departure preparation phases)
- 2019 **Advanced Calculus I**, *MATH 409, TAMU.*  
**Directed Studies**, *MATH 485, TAMU.*  
instructor and faculty leader (17 students)
- 2018 **Advanced Calculus I**, *MATH 409, TAMU.*  
**Directed Studies**, *MATH 485, TAMU.*  
instructor and faculty leader (18 students)
- 2017 **Advanced Calculus I**, *MATH 409, TAMU.*  
**Directed Studies**, *MATH 485, TAMU.*  
instructor and faculty leader (students)
- 2016 **Advanced Calculus I**, *MATH 409, TAMU.*  
**Directed Studies**, *MATH 485, TAMU.*  
instructor and faculty leader (students)

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## Former Positions

- 09/17–08/19 **Instructional Assistant Professor**, *with a special appointment to the Graduate Faculty*, Texas A&M University, College Station, Texas.
- 10/10–08/17 **Visiting Assistant Professor**, *with a special appointment to the Graduate Faculty*, Texas A&M University, College Station, Texas.
- 01/14–01/15 **ANR Fellow**, *NoLiGeA Project*, Institut de Mathématiques de Jussieu-Paris Rive Gauche, Université Pierre et Marie Curie (Paris 6), Paris, France.
- Fall 2011 **Research Member**, *Mathematical Science Research Institute*, Berkeley, California.
- 01/10–09/10 **Postdoc FNS**, *Université de Neuchâtel*, Neuchâtel, Switzerland.
- 09/09–12/09 **Postdoc IMI**, *Universidad Complutense de Madrid*, Madrid, Spain.
- 09/08–08/09 **Teaching and Research Assistant**, *Université de Franche-Comté*, Besançon, France.
- 09/05–08/08 **Ph.D. student with scholarship**, *Université de Franche-Comté with a teaching appointment at ENSMM (Engineering School)*, Besançon, France.

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## Education

- 2005–2008 **Ph.D. degree in Mathematics**, *Université de Franche-Comté*, Besançon, France.  
Studies for a Ph.D. degree (with scholarship) under the supervision of Prof. Gilles Lancien.
- 2002–2005 **M.Sc. degree in Mathematics**, *Université de Franche-Comté*, Besançon, France.  
M.Sc. thesis: Extension of bi-Lipschitz mappings between  $L_p$  spaces, prepared under the supervision of Prof. Gilles Lancien.
- 2003–2004 **Agrégation de Mathématiques preparation**, *Université de Franche-Comté*, Besançon, France.  
Intensive preparatory year to the nation-wide educational contest called Agrégation de Mathématiques; selected 99<sup>th</sup> out of 2560 candidates in 2005.
- 2001–2002 **B.Sc. degree in Mathematics**, *Université de Franche-Comté*, Besançon, France.  
Studies for a “Licence de Mathématiques Pures” (equivalent to a B.Sc. degree in Mathematics)
- 1998–2001 **Classes préparatoires aux Grandes Écoles**, *Lycée Victor Hugo*, Besançon, France.

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## Research Interests

- Qualitative and quantitative aspect of metric geometry (coarse, uniform, strong, and Lipschitz geometries of metric spaces; metric geometry of graphs and groups)
- Low-distortion embeddability of finite and infinite metric spaces (probabilistic methods, Ramsey theoretic methods).
- Banach space geometry (nonlinear theory of Banach spaces, Lipschitz/uniform/coarse classification of Banach spaces, Ribe Program, Kalton Program).
- Functional Analysis (classical linear theory of Banach spaces).
- Applications of the above to geometric group theory, noncommutative geometry, topology, and theoretical computer science.

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## Computer Skills

Tools WebAssign, SMART Notebook, i>clicker.

Platforms Mac OS X, Linux, Windows.

Languages  $\LaTeX$ , HTML, Python.

Softwares MATLAB, Maple, Scilab.

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## Languages

Self-assessment European level CEFR (C2 maximum evaluation)

		<b>Comprehension</b>		<b>Speaking</b>		<b>Writing</b>
		Listening	Reading	Interaction	Production	
French	Mother Tongue	<i>C2</i>	<i>C2</i>	<i>C2</i>	<i>C2</i>	<i>C2</i>
English	Fluent	<i>C2</i>	<i>C2</i>	<i>C2</i>	<i>C2</i>	<i>C2</i>
Portuguese	Spouse Language	<i>C2</i>	<i>C1</i>	<i>C1</i>	<i>C1</i>	<i>B2</i>
Spanish	Intermediate	<i>C1</i>	<i>C1</i>	<i>B2</i>	<i>B2</i>	<i>B1</i>
German	Intermediate	<i>B2</i>	<i>B2</i>	<i>B1</i>	<i>B1</i>	<i>B1</i>