

**GEORGE ANDROULAKIS**  
CURRICULUM VITAE

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**EDUCATION**

Ph.D. in Mathematics	1996
University of Texas, Austin	1990-1996
Thesis Advisor: H.P. Rosenthal	
B.S. in Mathematics	1989
University of Crete, Greece	1985-1989

**ACADEMIC CAREER**

Visitor	Georgia Tech	2008-2009
	Visiting: Prof. Jean Bellissard	
Associate Professor	University of South Carolina	2006-present
Assistant Professor	University of South Carolina	2000-2005
Visiting Assistant Professor	Texas A & M University	1998-2000
Postdoctoral Fellow	University of Missouri at Columbia	1996-1998

**HONORS and AWARDS**

NSF Workshops in Linear Analysis and Probability

Texas A&M University; College Station, TX

Invited participant

Summers: 95, 96, 97, 98, 99, 00, 01, 02, 04, 05, 08

Program on Convex geometry and Geometric Functional Analysis

Mathematical Sciences Research Institute; Berkeley, CA

Invited Participant and member of the MSRI

January 1996

Professional Development Award

University of Texas at Austin; Austin, TX

Recipient of Graduate Teaching and Research award

AY 95-96

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## RESEARCH

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### PUBLICATIONS

#### In preparation

- [27 ] G. Androulakis, K. Beanland *Embedding  $c_0$  in the space of all operators on a dual Banach space.*
- [26 ] G. Androulakis, Th. Schlumprecht, *On the subsymmetric sequences in  $S$ .*
- [25 ] C. Sadel, G. Androulakis, J. Bellissard, *A model for Mott hopping conductivity.*

#### Accepted

- [24 ] G. Androulakis, A. Flattot, *Hyperinvariant subspace for weighted composition operator on  $L^p([0, 1]^d)$* , Journal of Operator Theory.
- [23 ] G. Androulakis, S.J. Dilworth, N.J Kalton, *A new approach to the Ramsey-type games and the Gowers dichotomy in  $F$ -spaces*, Combinatorica.
- [22 ] G. Androulakis, N.J. Kalton, A. Tcaciuc *On Banach spaces containing  $\ell_p$  or  $c_0$* , Houston J. Math.

#### Appeared

- [21 ] G. Androulakis, A.I. Popov, A. Tcaciuc, V.G. Troitsky, *Almost invariant half-spaces of operators on Banach spaces*, Integral Equations and Operator Theory **65** (2009), 473-484.
- [20 ] G. Androulakis, P. Dodos, G. Sirotkin, V.G. Troitsky, *Classes of strictly singular operators and their products*, Israel J. Math. **169**, (2009), 221-250.
- [19 ] G. Androulakis, F. Sanacory, *An extension of Schreier unconditionality*, Positivity **12** (2008), no. 2, 313–340.
- [18 ] G. Androulakis, K. Beanland, *Descriptive set theoretic methods applied to strictly singular and strictly cosingular operators*, Quaestiones Mathematicae, **31** (2008), 151-161.
- [17 ] G. Androulakis, F. Sanacory, *Some equivalent norms on the Hilbert space*, Banach spaces and their applications in analysis, 241–250, Walter de Gruyter, Berlin, 2007.
- [16 ] G. Androulakis, *A new method for constructing invariant subspaces*, J. Math. Anal. Appl. **333** (2007) 1254–1263.
- [15 ] G. Androulakis, K. Beanland, *A Hereditarily Indecomposable Asymptotic  $\ell_2$  Banach Space*, Glasgow Mathematical Journal **48** (2006) 503-532.
- [14 ] G. Androulakis, K. Beanland, S.J. Dilworth, F. Sanacory, *Embedding  $\ell_\infty$  in the space of bounded operators on certain Banach spaces*, Bull. London Math. Soc. **38** (2006) 979-990.
- [13 ] G. Androulakis, E. Odell , Th. Schlumprecht and N. Tomczak-Jaegermann, *On the structure of the spreading models of a Banach space*, Canadian J. Math. **57** (4), (2005), 673–707.
- [12 ] G. Androulakis and S. Dostoglou, *Space averages and homogeneous fluid flows*, Mathematical Physics Electronic Journal, Vol. **10**, no 4 (2004), 1–12.
- [11 ] G. Androulakis and P. Enflo, *A property of strictly singular 1-1 operators*, Ark. Mat. **41** (2003), 233–252.

- [10 ] G. Androulakis, *A note on the method of minimal vectors*, Trends in Banach spaces and operator theory (Memphis, TN, 2001), Contemp. Math., (Amer. Math. Soc., Providence, RI), **321**, (2003), 29–36.
- [9 ] G. Androulakis and Th. Schlumprecht, *The Banach space  $S$  is complementably minimal and subsequentially prime*, Studia Math. **156** (3), (2003), 227–242.
- [8 ] G. Androulakis and Th. Schlumprecht, *Strictly singular, non-compact operators exist on the Gowers-Maurey space*, J. London Math. Soc. (2) **64**, no 3, (2001), 655–674.
- [7 ] G. Androulakis, P. Casazza and D. Kutzarova, *Some more  $\ell_2$ -saturated weak Hilbert spaces*, Canad. Math. Bull. **43**, no. 3, (2000), 257–267.
- [6 ] G. Androulakis and S. Dostoglou, *Positivity results for the Yang-Mills-Higgs Hessian*, Pacific J. Math, **194**, no. 1, (2000), 1–17.
- [5 ] G. Androulakis and E. Odell, *Distorting mixed Tsirelson spaces*, Israel J. Math. **109** (1999), 125–149.
- [4 ] G. Androulakis and S. Dostoglou, *On the stability of monopole solutions*, Nonlinearity **11** No 3 (1998), 377–408.
- [3 ] G. Androulakis, C. D. Cazacu and N. J. Kalton, *Twisted sums, Fenchel-Orlicz spaces and property (M)*, Houston J. Math. **24** No 1 (1998), 105–126.
- [2 ] G. Androulakis, *A counterexample to a question of R. Haydon, E. Odell and H. Rosenthal*, Proc. Amer. Math. Soc. **126** No 5 (1998), 1425–1428.
- [1 ] G. Androulakis, *A subsequence characterization of sequences spanning isomorphically polyhedral Banach spaces*, Studia Math. **127** No 1 (1998), 65–80.
- [0 ] G. Androulakis, *Isomorphically polyhedral Banach spaces and mixed Tsirelson spaces of arbitrary distortion*, Ph.D. dissertation, University of Texas, Austin, TX, 1996.

### RESEARCH GRANTS

National Science Foundation DMS-9970547 <i>Isomorphic Theory of Banach Spaces</i> Principal Investigator	\$ 56,709	06/99-07/02
No cost extension of above grant		07/02-07/03
National Science Foundation DMS-9623260 NSF Young Investigator	\$ 7,000	07/98-08/98

### INVITED COLLOQUIUM ADDRESSES

12. University of Tennessee at Chattanooga 6/09  
*The invariant subspace problem*
11. University of Alberta, (seminar) 3/08  
*A simple proof of a theorem of Gowers*
10. University of Crete 6/07  
*An new proof of Gowers' dichotomy*
9. University of North Texas 10/06  
*Games in Banach spaces*

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|--|-------|
| 8. University of Mississippi   | 04/04 |
| <i>Some Ramsey type results in Banach spaces</i>   |       |
| 7. East Carolina University  | 10/00 |
| <i>Spreading models in Banach spaces</i>   |       |
| 6. University of South Carolina  | 03/00 |
| <i>Towards a positive solution of the invariant subspace problem in Banach spaces</i>                    |       |
| 5. Kent State University   | 03/00 |
| <i>Existence of strictly singular non-compact operators in Hereditarily Indecomposable Banach spaces</i> |       |
| 4. Miami University of Ohio  | 02/00 |
| <i>On the stability of Yang-Mills-Higgs Hessian</i>  |       |
| 3. Bowling Green State University  | 02/00 |
| <i>On a question of Gowers and Maurey</i>  |       |
| 2. University of Texas; San Antonio  | 10/99 |
| <i>New classes of weak Hilbert spaces</i>  |       |
| 1. Miami University of Ohio  | 09/97 |
| <i>Distortion of Banach spaces</i>   |       |

#### INVITED CONFERENCE ADDRESSES

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|---|-------|
| 27. International Conference on Interdisciplinary Mathematical and Statistical Techniques | 5/07  |
| Memphis, TN   |       |
| <i>A new approach to Ramsey-type results in <math>F</math>-spaces</i>                     |       |
| 26. AMS Regional Meeting: Special Session on Vector Measures                              | 03/07 |
| Miami, OH   |       |
| <i>Some of my favourite problems and related results on spaces of operators</i>           |       |
| 25. Conference in honor of N.J. Kalton's 60th birthday                                    | 05/06 |
| Miami University at Ohio  |       |
| <i>The invariant subspace problems in Banach spaces</i>                                   |       |
| 24. AMS Regional Meeting: Special Session on Banach spaces and applications               | 04/06 |
| Florida International University  |       |
| <i>Some operator ideals and their products</i>  |       |
| 23. Workshop in Linear Analysis and Probability   | 08/05 |
| Texas A & M University  |       |
| <i>A new method for constructing invariant subspaces</i>                                  |       |
| 22. Workshop in Linear Analysis and Probability   | 08/05 |
| Texas A & M University  |       |
| <i>Gowers' trichotomy in <math>F</math>-spaces</i>  |       |
| 21. AMS Regional Meeting: Special Session on spaces of vector valued functions            | 01/05 |
| Atlanta, GA   |       |
| <i>Some remarks about the Invariant subspace problem</i>                                  |       |
| 20. Workshop in Linear Analysis and Probability   | 08/04 |
| Texas A & M University  |       |
| <i>Embedding <math>\ell_\infty</math> in the space of all operators</i>                   |       |

19. AMS Regional Meeting: Special Session on Recent trends in Banach spaces 03/04  
Athens, OH  
*Banach spaces which admit homogeneous measures*
18. Workshop on Banach spaces and Ramsey Theory 02/03  
Fields Institute, Toronto, Canada  
*Constructing hyper-invariant subspaces of certain operators in Banach spaces*
17. Workshop in Geometric Functional Analysis 08/02  
University of British Columbia, Vancouver, Canada  
*A new sufficient condition for the existence of invariant subspaces*
16. AMS Regional Meeting: Special Session on Banach spaces and applications 03/02  
Georgia Institute of Technology  
*A property of strictly singular 1-1 operators*
15. Conference on “Trends on Banach spaces and Operator Theory” 10/01  
University of Memphis  
*A note on the method of minimal vectors,*
14. Workshop in Linear Analysis and Probability 08/00  
Texas A & M University  
*Strictly singular non compact operators*
13. AMS Regional Meeting: Special Session on Banach and Operator Spaces 08/99  
University of Texas, Austin  
*Subsymmetric sequences in Schlumprecht space*
12. Workshop in Linear Analysis and Probability 08/99  
Texas A & M University  
*Candidates for prime Banach spaces*
11. Workshop in Geometric Functional Analysis 07/99  
University of British Columbia, Vancouver, Canada  
*The Banach space  $S$  is subsequentially prime*
10. Workshop in Linear Analysis and Probability 08/98  
Texas A & M University  
*New  $\ell_2$  saturated weak-Hilbert spaces*
9. AMS Regional Meeting: Special Session on Banach spaces 03/98  
University of Louisville  
*Twisted sums of Orlicz spaces*
8. AMS Regional Meeting: Special Session on Banach spaces and Wavelets 10/97  
Georgia Institute of Technology  
*Spectral analysis of Yang-Mills-Higgs functionals*
7. Workshop in Linear Analysis and Probability 08/97  
Texas A & M University  
*On the spectrum of Quadratic forms*
6. Wabash Extramural Modern Analysis Mini-conference 10/96  
Indiana University- Purdue University at Indianapolis  
*A subsequence characterization of sequences spanning isomorphically polyhedral Banach spaces*

5. Workshop in Linear Analysis and Probability 08/96  
Texas A & M University  
*Isomorphically polyhedral Banach spaces*
4. AMS Regional Meeting: Special Session on Banach spaces and related topics 06/96  
University of Missouri, Columbia  
*Distorting mixed Tsirelson spaces*
3. Concentration on Infinite-dimensional Convex Geometry 02/96  
Mathematical Sciences Research Institute, Berkeley  
*The  $\ell_1$  index as an invariance for distortion*
2. Workshop in Linear Analysis and Probability 07/95  
Texas A & M University  
*Estimates of the  $\ell_1$  index for some mixed Tsirelson spaces*
1. AMS Annual Meeting: Special Session in Banach space Theory 01/93  
University of Texas, San Antonio  
*On a question of R. Haydon, E. Odell and H. Rosenthal*

**REFEREE FOR PROFESSIONAL JOURNALS, MANUSCRIPTS  
AND GRANT PROPOSALS**

34. Rocky Mountain Journal of Mathematics 2009
33. Collectanea Math. 2008
32. Studia Mathematica
31. Journal of Mathematical Analysis and Applications
30. National Science Foundation proposal review
29. Abstract and Applied Analysis
28. Proceedings of the American Mathematical Society
27. Discovery Grant for NSERC (National Sciences and Engineering Research Council of Canada)
26. Houston Journal of Mathematics
25. Proceedings of the American Mathematical Society
24. Journal of Functional Analysis 2007
23. Proceedings of the American Mathematical Society
22. Conference Proceedings in honor of N.J. Kalton
21. Canadian Journal of Mathematics 2006
20. Archiv der Mathematik
19. International Journal of Mathematics and Mathematical Sciences 2005
18. Journal of Function spaces and Applications 2004
17. Indiana University Mathematics Journal
16. Research and productivity Scholarship awards, USC
15. Proceedings of the American Mathematical Society 2003
14. Proceedings of the American Mathematical Society
13. Proceedings of the Royal Society of Edinburgh
12. International Journal of Mathematics and Mathematical Sciences
11. Israel Science Foundation
10. Proceedings of the American Mathematical Society 2002
9. Proceedings of the Royal Society of Edinburgh

8. Journal of Functional Analysis
7. Contemporary Mathematics: Trends in Banach spaces and Operator Theory
6. Journal of Australian Mathematical Society
5. National Research Council 2001
4. Prentice Hall
3. International Journal of Mathematics and Mathematical Sciences
2. Far East Journal of Mathematical Sciences 2000
1. Journal of Functional Analysis

### REVIEWER FOR MATHEMATICAL REVIEWS

29. Int. J. Math. Anal. 2009
28. Banach spaces and their applications in analysis, Walter de Gruyter, Berlin 2007.
27. J. Math. Anal. Appl.
26. Contemporary Mathematics 2008
25. Archiv der Mathematik
24. Studia Mathematica
23. J. London Math. Soc. 2007
22. RACSAM Rev. R. Acad. Cienc. Exactas Fis. Nat. Ser. A Mat.
21. Bull. Cl. Sci. Math. Nat. Sci. Math.
20. J. Korean Math. Soc. 2006
19. J. Funct. Anal. 2005
18. Israel J. Math.
17. Math. Rep. (Bucur.)
16. Chinese Ann. Math. Series B
15. Hokkaido Mathematical Journal 2004
14. Sequences spaces and Applications 2003
13. Bull. Fac. Educ. Utsunomiya Univ.
12. Nonlinear Functional Analysis and Applications 2002
11. Acta Math. Hungar.
10. Set Valued Analysis
9. Bull. Australian Mathematical Society
8. Extracta Math. 2001
7. Nonlinear Funct. Anal. Appl.
6. Comment. Math. Univ. Carolinae
5. Israel Journal of Mathematics 1999
4. Contemporary Mathematics
3. Functional Analysis, Conference proceedings, Narosa, New Delhi 1998
2. Functional Analysis, Conference proceedings, Narosa, New Delhi
1. Atti Sem. Mat. Fis. Univ. Modena

### BOOK REVIEWS

3. *Calculus*, Anton, Bivens, Davis, Editor: Wiley (8th edition). 2006
2. *Ramsey methods in Analysis*, S.A. Argyros, S. Todorcevic, Editor: Birkhauser. 2005
1. *Calculus*, J. Rogawski, Editor: Freeman, .

### OTHER RESEARCH GRANTS APPLIED

National Science Foundation	2007
DMS-0802784	
<i>Set theory and topology methods for Banach spaces and operators</i>	
Principal Investigator	
National Science Foundation	2006
DMS-0701152	
<i>The richness of the space of operators on a Banach space</i>	
Principal Investigator	
National Science Foundation	2005
DMS 0600886	
<i>Invariant subspaces and the space of all operators</i>	
Principal Investigator USC Research and Productivity Award	2005
<i>Examining the structure of the space of all operators</i>	
Principal Investigator	
Co-Principal Investigator-Sponsor: Prof. M. Girardi	
National Science Foundation	2004
DMS-0500843	
<i>The geometry of the space of all operators</i>	
Principal Investigator	
National Science Foundation	2003
DMS-0404532	
<i>The geometry of the space of operators and related properties of the underlying Banach space</i>	
Principal Investigator	
USC Research and Productivity Award	2003
<i>The Invariant subspace problem</i>	
Principal Investigator	
National Science Foundation	2002
DMS-0301277	
<i>New geometric aspects of Banach space theory</i>	
Principal Investigator	
National Science Foundation	2001
DMS-0200654	
<i>Operators on Banach spaces and spreading models</i>	
Principal Investigator	

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## TEACHING

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TERM	COURSE	COURSE TITLE	ENROLLMENT	Student Evaluation		
				Class Avg.	G.A.	DEP
Spring 10	Math 141	Calculus I				
	Math 554/703I	Analysis I				
Fall 09	Math 141	Calculus I	26 + 25	2.57		
	Math 242	Diff. Equations	46	2.22		
Spring 08	Math 141	Calculus I	28 + 25	1.85	3.8/5	
	Math 242	Diff. Equations	37	1.85	4.4/5	
Fall 07	Math 524	Nonlinear Optim.	16	1.97	3.2/5	
	Math 141	Calculus I	30 + 30	2.23	3.5/5	
Spring 07	Math197X	Research & Careers	10	N/A	Not Obtained	
	Math 757	Funt. An. II	5	4	4	
Fall 06	Math 142	Calculus II	26+24	2.15	2.9	
	Math 756	Funct. An. I	8	4	3.3	
	Math 890	Graduate Sem.	1	S	-	
	Math 899	Dissertation	1	T	-	
	Math 241	Vector Calculus	45	2.44	2.87	
Spring 06	Math 550	Vector Analysis	15	2.29	3.15	
	Math 899	Dissertation	2	T	-	
	Math 142	Calculus II	26+25	1.99	3.05	3.0
Fall 05	Math 242	Elem. Diff. Eq.	51	2.31	3.167	3.0
	Math 890	Grad. Sem.	1	S	-	
	Math 899	Dissertation	2	T	-	
Sum. II 05	Math 899	Dissertation	2	T	-	
Spring 05	Math 704	Real Analysis	16	3.16	2.81	3.0
	Math 890	Grad. Sem.	2	S	-	
	Math 899	Dissertation	2	T	-	
Fall 04	Math 141	Calculus I	26+24	1.94	2.36	2.8
	554-703I H	Analysis I	10	3.25	3.8	2.8
	Math 890	Grad. Sem.	2	S	-	
	Math 899	Dissertation	2	T	-	
Sum. II 04	Math 798	Dir. Read. Res.	1	4	-	
Spring 04	Math 544H	Linear Alg.	13	3	2.7	2.9
	Math 757	Funct. An. II	5	4	3.8	2.9
Fall 03	Math 142H	Calculus II	25	2.48	3.3	2.8
	Math 756	Funct. An. I	6	4	4	2.8
Spring 03	Math 704	Compl. An.	5	3.3	3.00	2.9
Fall 02	Math 141	Calculus I	31+35	2.52	3.53	3.0
	Math 703	Real Analysis	10	3.61	2.33	3.0
Spring 02	Math 142	Calculus II	31	2.48	3.63	3.0
	Math 554	Analysis I	11	1.86	3.50	3.0
Fall 01	Math 141	Calculus I	26+33	2.00	2.88	2.9
	Math 241	Calculus III	33	2.09	2.47	2.9
Spring 01	Math 142	Calculus II <sub>10</sub>	25+35	2.46	3.33	3.2
	Math 550	Vector An.	14	2.00	2.85	3.2
Fall 00	Math 141	Calculus I	32+35	2.28	3.08	2.8

**POSTDOCTORAL FELLOW ADVISOR**

Dr. Bünyamin Sari; AY 2004-2005 (co-advised by Prof. S.J. Dilworth)

Dr. Antoine Flattot, AY 2006-2010

**GRADUATE STUDENT RESEARCH SUPERVISION**

Ph.D. Advisor

Kevin Beanland; graduated in 08/06

Frank Sanacory; graduated in 06/07

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## SERVICE

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### USC COMMITTEES

#### DEPARTMENT

Committee for writing and grading the graduate analysis qualifying exam  
12/02, 8/03, 8/05, 1/06, 1/07, 8/09, 1/10.

Masters theses committee

01 (for Joseph Patterson), 04 (for Geoffrey Dillon)

Calculus Textbook Committee

03-04, 04-05

Graduate Advisory Council

Spring 06, 06-07, 07-08, 09-10.

Undergraduate Advisory Council

02-03, 03-04

Chair of the Committee of tenured faculty

4/15/07-4/15/08

Chair of the Colloquium Committee

00-01

Faculty Mentor (for Antoine Flattot)

Faculty Advisory Committee

01-02, 02-03, 04-05, 06-07

Physical Facilities Committee

01-02

Undergraduate Advisor

00-01, 01-02, 02-03, 03-04, 04-05, 05-06

Post tenure review committee

06-08, 09-10

Textbook Committee

04-05

#### UNIVERSITY

Faculty Senate

03-06

### OTHER SERVICE TO USC

Visited and provided feedback on TA taught classes at the request of the Graduate Director:  
2004, 2005, 2006, 2007, 2008, 2009.

Reference letters written for students: 2001 (1 letter), 2004 (2 letters), 2005 (7 letters), 2006  
(4 letters), 2007 (2 letter), 2008 (3 letter), 2009 (3 letter).

## **EXTERNAL SERVICE**

Referee for research papers

Reviewer for research grant proposals

Reviewer for books

Regular reviewer for Mathematical Reviews

Reviewer for Math Zentralblatt

## CONFERENCE ORGANIZING COMMITTEES

AMS Regional Meeting: Special Session on Banach spaces  
University of South Carolina at Columbia  
co-organizer with Professors S.J. Dilworth and M. Girardi

03/16/01-03/18/01