CURRICULUM VITAE

Konrad Aguilar
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Mathematics and Statistics Department
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Employment
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Assistant Professor, Spring 2021-
Pomona College, Mathematics and Statistics Department

Postdoc, Spring 2020 - Fall 2020
University of Southern Denmark, IMADA (Department of Mathematics and
Computer Science), partially funded by *The Independent Research Fund Denmark*.

Postdoctoral Associate, Fall 2017 - Fall 2019
Arizona State University, School of Mathematical and Statistical Sciences

Visiting Positions
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Ph.D. Internship, September 2016 - December 2016
Instytut Matematyczny Polskiej Akademii Nauk (IMPAN)/ University of Warsaw
(Simons Semester: Noncommutative geometry, the next generation)
Topic: Compact Quantum Groups and Quantum Metric Spaces

Education
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Ph.D. in Mathematics, 2014 - 2017
University of Denver
Advisor: Dr. Frédéric Latrémolière
Dissertation title: Quantum metrics on Approximately finite-dimensional algebras

M.S. in Mathematics, 2012- 2013
University of Denver

B.S. in Applied Mathematics, June 2009
California State Polytechnic University, Pomona

Publications
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17. K. Aguilar, Stephan Ramon Garcia, and Elena Kim ('21), *Frobenius–Rieffel norms on finite-dimensional C*-algebras*, 23 pages, submitted, arXiv:2112.13164.

16. K. Aguilar, Michael Hartglass, and David Penneys, *Compact Quantum Metric Spaces from Free Graph Algebras*, 15 pages, submitted, arXiv:2109.06985.

15. K. Aguilar, Samantha Brooker, Frédéric Latrémolière, and Alejandra López, *An ideal convergence*, Notices Amer. Math. Soc. **68** (2021), no. 8, 1269–1281

14. K. Aguilar, Ángel Chávez, and Stephan Ramon Garcia, and Jurij Volčič, *Norms on complex matrices induced by complete homogeneous symmetric polynomials*, 18 pages, submitted (2021), arXiv: 2106.01976.

13. K. Aguilar, Jens Kaad, and David Kyed, *Polynomial approximation of quantum Lipschitz functions*, 18 pages, submitted, arXiv: 2104.04317.

12. K. Aguilar, Jens Kaad, and David Kyed, *The Podleś spheres converge to the sphere*, 33 pages, submitted, arXiv: 2102.12761.

11. K. Aguilar, Frédéric Latrémolière, and Timothy Rainone, *Bunce-Deddens algebras as quantum Gromov-Hausdorff distance limits of circle algebras*, Integral Equations Operator Theory **94** (2022), no. 1, Paper No. 2. arXiv: 2008.07676.

10. K. Aguilar, *Quantum metrics on the tensor product of a commutative C*-algebra and an AF C*-algebra*, 31 pages, submitted, arXiv: 1907.07357.

9. K. Aguilar and Alejandra López, *A quantum metric on the Cantor space*
   22 pages, submitted, arXiv: 1907.05835.

8. K. Aguilar, *Inductive limits of C*-algebras and compact quantum metric spaces*
   24 pages, (Accepted 2019), to appear in *J. Aust. Math. Soc.*, arXiv: 1807.10424.

7. K. Aguilar and Jens Kaad, *The Podleś sphere as a spectral metric space*
   J. Geom. Phys. 133 (2018), 260–278, arXiv: 1803.03027.

6. K. Aguilar and Samantha Brooker, *Quantum metrics from traces on full matrix algebras*
   Involve **12** (2019), no.2, 329–342, arXiv: 1906.09728.

5. K. Aguilar and Tristan Bice, *Standard Homogeneous C*-algebras as compact quantum metric spaces*, 32 pages, (Accepted 2018) to appear in *Banach Center Publications*, arXiv: 1711.08846.

4. K. Aguilar and Frédéric Latrémolière, *Some applications of conditional expectations to convergence for the quantum Gromov-Hausdorff propinquity*, 12 pages, (Accepted 2018) to appear in *Banach Center Publications*, arXiv: 1708.00595.

3. K. Aguilar, *Convergence of Quotients of AF Algebras in Quantum Propinquity by Convergence of Ideals*, 48 pages, (Accepted 2019), to appear in *Journal of Operator Theory*, arXiv: 1608.07016.

2. K. Aguilar, *AF algebras in the quantum Gromov-Hausdorff propinquity space*
   32 pages, submitted, arXiv: 1612.02404.

1. K. Aguilar and Frédéric Latrémolière, *Quantum Ultrametrics on AF algebras and the Gromov-Hausdorff propinquity*, Studia Mathematica **231** (2015) 2, pp. 149-193, arXiv: 1511.07114.

Research Interests

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1. Noncommutative Metric Geometry (quantum metric spaces)

2. C^*-algebras and Compact Quantum Groups

3. Quantum Information Theory

Seminar and Conference Presentations

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2021 *Automorphisms and Invariants of Operator Algebras Conference* at University of Copenhagen, Invited Talk.

2021 *C*-algebra Seminar*, a joint seminar with Arizona State University and Embry-Riddle Aeronautical University, Invited Talk.

2021 *Mathematical Physics and Dynamical Systems Seminar* at University of California, Riverside, Invited talk.

2021 *Operator Algebras Seminar* at University of California, Riverside, Invited talk.

2021 *Great Plains Operator Theory Symposium, virtual*, contributed talk.

2021 *North Atlantic Noncommutative Geometry Seminar*, Invited talk.

2021 *Claremont Colleges Mathematics Colloquia*, Invited talk.

2021 *Mathematical Physics and Dynamical Systems Seminar* at University of California, Riverside, Invited talk.

2020 *Noncommutative Geometry and Topology Prague seminar*, Invited talk.

2020 *NYC noncommutative geometry seminar*, Invited talk.

2020 *Joint Mathematics Meetings: AMS Special Session on C*-Algebras, Dynamical Systems and Applications*, Invited talk.

2020 *Joint Mathematics Meetings: AMS Special Session on Noncommutative Geometry and Applications*, Invited talk.

2019 *QLA Meets QIT* at Purdue University, Invited talk.

2019 *AMS Fall Western Sectional Meeting: AMS special session on Advances in Operator Algebras* at University of California, Riverside, Invited talk.

2019 *Fractal Research Group Seminar* at University of California, Riverside, Invited talk.

2019 *Analysis Seminar* at Kansas State University, Invited talk.

2019 *Wabash Miniconference* at Indiana University - Purdue University Indianapolis, Invited talk.

2019 *Analysis Seminar* at University of Illinois, Urbana-Champaign, Invited talk.

2019 *C*-algebra Seminar* at Arizona State University.

2019 *Workshop on New Geometry of Quantum Dynamics* at The Fields Institute, Invited talk.

2019 *Great Plains Operator Theory Symposium* at Texas A&M University, Contributed talk.

2019 *ULAM Noncommutative Geometry Seminar* at University of Colorado at Boulder, Invited talk.

2018 *Great Plains Operator Theory Symposium* at Miami University, Contributed talk.

2018 *Mathematics Seminar* at University of Southern Denmark, Invited talk and research visit.

2018 *C*-algebra Seminar* at Arizona State University.

2018 *Mathematical Physics and Dynamical Systems Seminar* at University of California, Riverside, Invited talk.

2018 *Fractal Research Group Seminar* at University of California, Riverside, Invited talk.

2018 *Young Researchers Colloquium* at IMPAN, Warsaw, Poland, Invited talk.

2018 *New Geometry of Quantum Dynamics Conference* at IMPAN, Warsaw, Poland, Invited talk.

2017 *AMS Fall Western Sectional Meeting: AMS special session on Advances in Operator Algebras* at University of California, Riverside, Invited talk.

2017 *C*-algebra Seminar* at Arizona State University

2017 *Great Plains Operator Theory Symposium* at Texas Christian University, Contributed talk.

2017 *Functional Analysis Seminar*, University of Colorado, Boulder, Invited speaker.

2017 *Joint Mathematics Meetings: AMS special session in Advances in Operator Algebras*, Invited talk.

2016 *AMS Fall Western Sectional Meeting: AMS special session in Noncomutative Geometry and fundamental applications* at University of Denver, Invited talk.

2016 *Noncommutative Geometry Seminar* at Institute of Mathematics Polish Academy of Sciences (IMPAN), Invited talk.

2016 *Canadian Annual Symposium on Operator Algebras and their Applications (COSy)* at Université de Montréal, Contributed talk.

2016 *Great Plains Operator Theory Symposium* at University of Illinois, Urbana-Champaign, Contributed talk.

2016 *Analysis Seminar*, University of Wyoming.

2016 *Quantum Geometry Seminar*, University of California, Berkeley.

2016 *Groupoids and Analysis Seminar*, University of Colorado, Boulder, Invited speaker.

2014-2016 *Analysis Seminar*, University of Denver, several 1 hour talks.

2013-2016 *Graduate Colloquium*, University of Denver, several 1 hour talks.

Awards and Grants
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2. *AMS-Simons Travel Grant*, $4,000 USD, July 1, 2019 - June 30, 2023, awarded by the American Mathematical Society and the Simons Foundation.

1. *Ph.D. Internship for Simons Semester: Noncommutative geometry the next generation*, $10,000 USD, September 2016 - December 2016, awarded by IMPAN and University of Warsaw partially supported by the Simons - Foundation grant 346300 and the Polish Government MNiSW 2015-2019 matching fund.

Teaching
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- **Teacher (Pomona College)**
  Principles of Real Analysis I, Principles of Real Analysis II, Calculus III

Teacher (Arizona State University)
Metric Spaces (taught twice), Normed vector spaces and Measure Theory, Linear Algebra (taught twice), Multivariable Calculus (taught three times)

Teacher (University of Denver)
College Algebra, College Algebra and Trigonometry (taught twice)

Teacher (Red Rocks Community College Fall 2012 - Spring 2015)
College Algebra (taught four times), other basic algebra courses

- **Teaching Assistant (IMPAN and Simons Semester)- Graduate level course**
Noncommutative topology by Dr. Tatiana Shulman (duties included: official note taker with notes published on conference website found here:
`http://bcc.impan.pl/16Simons-III/index.php/programme.html`)

Teaching Assistant (University of Denver) - Graduate level courses
Real Analysis, Metric Spaces, Topology

Teaching Assistant (University of Denver) - Undergraduate level courses
Business Calculus, Calculus I, Calculus II, Honors Calculus II, Calculus III, Multivariable Calculus, Differential Equations, Linear Algebra

Advising
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2021-2022   Graduate Research Advisor of Sireesh Vinnakota at Claremont Graduate University.

2021-2022   Undergraduate Research Advisor of Zoë Batterman at Pomona College.

2021-2022   Undergraduate Thesis Advisor of Amber Lee at Pomona College. Thesis title: TBD.

2021-2022   Undergraduate Thesis Advisor of Adam Guo at Pomona College. Thesis title: TBD.

2020-2021   Undergraduate Thesis Advisor of Elena Kim at Pomona College. Thesis title: Equivalence constants for generalized Frobenius norms.

2019   Undergraduate Research Advisor of Alejandra López at Arizona State University, which resulted in a preprint listed above under Publications.

2018-2019   Undergraduate Research Advisor of Olga N. Bustamante at Arizona State University. Project title: "Quantum metrics on the diagonal of the Podleś sphere."

2017-2019   Honors project advisor of six Honors projects for Honors students of Barrett, the Honors College, at Arizona State University.

2016   Undergraduate Research Advisor of Samantha Brooker under *2016 Summer Research Grant* at the University of Denver Undergraduate Research Center, which resulted in a paper published in the journal *Involve* listed above under Publications.

Service
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2021-   Committee member of the Admissions and Financial Aid committee at Pomona College

2021-   Math teacher for Pomona College Academy for Youth Success (PAYS)

2021-   Mentor for The National Alliance for Doctoral Studies in the Mathematical Sciences at Purdue University (Math Alliance)

2021-   Liaison to the Math Liaisons for the Mathematics and Statistics Department at Pomona College

2019   Panel Member for *Professional Development Seminar* for the School of Mathematical and Statistical Sciences at Arizona State University

2019   Undergraduate Honors Thesis Defense Committee Member for Arturo Jaime, Arizona State University

2019   Award presenter for two awards for the *2019 School of Mathematical and Statistical Sciences Scholarship and Awards Ceremony* at Arizona State University

2018   Co-organizer for *AMS Special Session on Noncommutative Geometry and Fundamental Applications* at the 2018 Fall Western Section Meeting at San Francisco State University.

2018   Doctoral Dissertation defense committee member for Nathan Davidoff, University of Colorado, Boulder.

2018   Panel Member for the *TA seminar* for the School of Mathematical and Statistical Sciences at Arizona State University

2018   Referee for the *Journal of Mathematical Analysis and Applications*

2015-2017   Peer Mentor for *NSMentoring: Face to Face Program*, a STEM focused Inclusive Excellence program at the University of Denver

2015   Volunteer and Grader for *2016 Denver Metro MathCOUNTS*, a middle school math competition

2014   Local Assistant for *West Coast Operator Algebra Seminar 2014* at the University of Denver

Memberships and Board appointments
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- 2nd Vice Program Chair on the board of the Mathematical Association of America (MAA) Southern California-Nevada Section

- Member of Latinx Mathematician Research Community (LMRC) funded by AIM and NSF

- Member of Project NExT Gold 21' cohort

- Mentor for The National Alliance for Doctoral Studies in the Mathematical Sciences at Purdue University (Math Alliance)

- Member of Mathematical Association of America (MAA)

- Member of American Mathematical Society (AMS)

References

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University of California at Berkeley
Evans Hall, Berkeley, CA 94720

Dr. Jack Spielberg
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Wexler Hall, Tempe, AZ 85287

Dr. Judith A. Packer
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