Chelsea Walton

CONTACT INFORMATION	*Work Address* : Department of Mathematics Rice University P.O. Box 1892 Houston, TX 77005-1892	*Email and Website*: notlaw@rice.edu `https://math.rice.edu/~notlaw/`

EMPLOYMENT

Rice University
Houston, Texas.

Full Professor (with tenure)	July 2023 - present
Associate Professor (with tenure)	July 2020 - June 2023

The University of Illinois at Urbana-Champaign
Urbana-Champaign, Illinois.

Associate Professor (with tenure), Smith Prof. Scholar	Aug. 2018 - June 2020

Temple University   July 2015 - June 2018
Philadelphia, Pennsylvania.
Selma Lee Bloch Brown Early Career Assistant Professor

Massachusetts Institute of Technology   Sept. 2012 - June 2015
Cambridge, Massachusetts.
C.L.E. Moore Instructor/ NSF Postdoctoral Fellow

University of Washington   Sept. 2011 - Aug. 2012
Seattle, Washington.
NSF Postdoctoral Fellow

**VISITING
POSITIONS**

University of Hamburg   June - Nov. 2022, June - July 2023
Hamburg, Germany.
Humboldt Research Fellowship Programme for Experienced Researchers

Simons Laufer Math. Sci. Inst. (SLMath/ MSRI)   Jan. 2020 - May 2020
Berkeley, California.
Program Co-organizer and Member: Quantum Symmetries

Simons Laufer Math. Sci. Inst. (SLMath/ MSRI)   Jan. 2013 - May 2013
Berkeley, California.
(NSF) Postdoctoral Fellow

EDUCATION

University of Michigan   Aug. 2011
Ph.D in Mathematics, Rackham Graduate School, Ann Arbor, Michigan.
Advisor: Professor J. Tobias Stafford; Co-Advisor: Professor Karen E. Smith.

University of Manchester   Sept. 2007 - Aug. 2008, Jan. - Aug. 2009 - 2011
Visiting Student, Mathematics Department, Manchester, England.

University of Michigan   June 2007
M.S. in Pure Mathematics, Rackham Graduate School, Ann Arbor, Michigan.

Michigan State University   May 2005
B.S. with High Honors in Mathematics, Honors College, East Lansing, Michigan.

**RESEARCH
INTERESTS**
Noncommutative Algebra, Quantum Symmetries, Hopf algebras and their variants/
Quantum Groups, and Representation Theory.

GRANTS AND FELLOWSHIPS	**NSF Algebra and Number Theory grants**

NSF Algebra and Number Theory grants
(conference grants listed under "Conferences, Workshops co-organized")
National Science Foundation, USA.
- Grant No. DMS-2348833 $350,000.00 USD   May 2024 - Apr. 2027
- Grant No. DMS-2100756 $225,000.00 USD   Apr. 2021 - Mar. 2024
- Grant No. DMS-1663775 $161,973.00 USD   Aug. 2017 - Sept. 2020
   - Transferred to U. Illinois Urbana-Champaign Grant No. DMS-1903192.
- Grant No. DMS-1401207, $148,445.00 USD   Sept. 2014 - Aug. 2017
   - Undergraduate Research, Supplement No. DMS-1519286, $5,000.00 USD
   - Transferred to Temple U. Grant No. DMS-1550306.

AMS Claytor-Gilmer Fellowship   Jan. 2024
American Mathematical Society, Providence, Rhode Island.
- $50,000 USD.

University of Illinois Urbana-Champaign Campus Research Board
- Grant No. RB19132 $29,987 USD   Apr. 2019 - June 2020

Sloan Research Fellowship   Sept. 2017 - Aug. 2020
Alfred P. Sloan Foundation, New York, NY, USA.
- $60,000.00 USD (+1 yr ext'n)

NSF Math. Sciences Postdoctoral Fellowship   Aug. 2011 - July 2014
National Science Foundation, USA.
- Grant No. DMS-1102548, $135,000.00 USD

HONORS AND AWARDS

Fellows of the AMS, Class of 2025   Nov. 2024
American Mathematical Society, Providence, Rhode Island.

Career Champion Award, Class of 2022   Aug. 2022
Rice University Center for Career Development, Houston, Texas.

Arnold O. Beckman Research Award   May 2019
UIUC Campus Research Board, Urbana, Illinois.

Andre Lichnerowicz Prize in Poisson geometry   July 2018
Int'l Conf. on Poisson Geometry in Mathematics and Physics, Toronto, Canada.

Real McCoy award for Mathematics   Sept. 2017
Detroit Area Pre-College Engineering Program (DAPCEP), Detroit, Michigan.

Recent Alumni Award   Mar. 2016
College of Natural Science, Michigan State University, E. Lansing, Michigan.

Infinite Kilometer (Infinite K) Award for outreach   Jan. 2013
School of Science, Massachusetts Institute of Technology, Cambridge, Mass.

Wirt and Mary Cornwell Prize in Mathematics   Apr. 2011
University of Michigan, Ann Arbor, Michigan.

TEXTBOOKS

C. Walton, **Symmetries of Algebras, Volume 1**. 619 Wreath Publishing, Oklahoma City, OK, 2024.
- ISBN numbers: 978-1-958469-20-0 (paperback); 978-1-958469-21-7 (hardcover); 978-1-958469-26-2 (e-book).
- Details found here: `https://math.rice.edu/~notlaw/symalgbook.html`

RESEARCH
PUBLICATIONS

42. C. Walton and H. Yadav, Nondegenerate module categories, `https://arxiv.org/abs/2411.18453`, to appear in *Math Z.*

41. F. Liu Lopez and C. Walton, Twists of graded algebras in monoidal categories, `https://arxiv.org/abs/2311.18105`, to appear in *J. Algebra.*

40. R. Laugwitz and C. Walton, Constructing non-semisimple modular categories with local modules, *Commun. Math. Phys* 403(3) 1363-1409, 2023.

39. A. Hernandez, C. Walton, and H. Yadav, On non-counital Frobenius algebras, `https://arxiv.org/pdf/2204.14182`, to appear in *J. Algebra Appl.*

38. C. Walton and H. Yadav, Filtered Frobenius algebras in monoidal categories, *Int. Math. Res. Notices*, 2022, rnac314.

37. Y. Morales, M. Müller, J. Plavnik, A. Ros Camacho, A. Tabiri, C. Walton, Algebraic structures in group-theoretical fusion categories, *Algebras Represent. Theory* (2022), pp. 1-33.

36. H. Huang, C. Walton, E. Wicks and R. Won, Universal quantum semigroupoids, *J. Pure Appl. Algebra*, 227(2):107193, 2023.

35. F. Calderón and C. Walton, Algebraic properties of face algebras, *J. Algebra Appl.*, 2350076, 2022.

34. C. Walton, E. Wicks and R. Won, Algebraic structures in comodule categories over weak bialgebras. *Comm. Algebra*, 50(7):2877–2910, 2022.

33. C. Walton, X. Wang and M. Yakimov, Poisson geometry and representations of PI 4-dimensional Sklyanin algebras, *Selecta Math* 27:99 (2021).

32. R. Laugwitz and C. Walton, Constructing non-semisimple modular categories with relative monoidal centers, *Int. Math. Res. Notices*, 2021, rnab097.

31. R. Laugwitz and C. Walton, Braided commutative algebras over quantized enveloping algebras, *Transform. Groups* 26 (2021), pp. 957-993.

30. P. Etingof, R. Kinser and C. Walton, Tensor algebras in finite tensor categories, *Int. Math. Res. Notices*, 2021, rnz332.

29. A. Conner, E. Kirkman, W. F. Moore, and C. Walton, Noncommutative Knörrer periodicity and noncommutative Kleinian singularities, *J. Algebra* 540 (2019), pp. 234–273.

28. A. Chirvasitu, C. Walton, and X. Wang, Gelfand-Kirillov dimension of cosemisimple Hopf algebras, *Proc. Amer. Math. Soc.* 147 (2019), pp. 4665–4672.

27. C. Walton and J. Zhang, On the quadratic dual of the Fomin-Kirillov algebras, *Trans. Amer. Math. Soc.* 372 (2019), pp. 3921–3945.

26. C. Walton, X. Wang and M. Yakimov, Poisson geometry of PI three-dimensional Sklyanin algebras, *Proc. Lond. Math. Soc.* 118, no. 6, (2019), pp. 1471-1500.

25. Z. Cline, A. Estornell, C. Walton, and M. Wynne, PBW deformations of quadratic monomial algebras, *Comm. Algebra* 47, no. 7 (2019), pp. 2670-2688.

24. K. Chan, E. Kirkman, C. Walton, and J. Zhang, McKay correspondence for semisimple Hopf actions on regular graded algebras, I, *J. Algebra* 508 (2018), pp. 512–538.

23. C. Walton and S. Witherspoon, PBW deformations of braided products, *J. Algebra* 504 (2018), pp. 536–567.

3

22. A. Mejía Castaño, S. Montgomery, S. Natale, M. D. Vega, and C. Walton, Cocycle deformations and Galois objects for semisimple Hopf algebras of dimension p^3 and pq^2, *J. Pure Appl. Algebra* 222, no. 7, (2018) pp. 1643–1669.

21. K. Chan, E. Kirkman, C. Walton, and J. Zhang, McKay correspondence for semisimple Hopf actions on regular graded algebras, II, *J. Noncom. Geom.* 13, no. 1, (2019), pp. 87–114.

20. A. Chirvasitu, C. Walton, and X. Wang, On quantum groups associated to a pair of preregular forms, *J. Noncom. Geom.* 13, no. 1, (2019), pp. 115–159.

19. D. J. Reich and C. Walton, Explicit representations of 3-dimensional Sklyanin algebras associated to a point of order 2, *Involve, a Journal of Mathematics* 11-4 (2018), pp. 585–608.

18. P. Etingof and C. Walton, Finite dimensional Hopf actions on algebraic quantizations, *Algebra & Number Theory* 10, no. 10 (2016), pp. 2287–2310.

17. J. Cuadra, P. Etingof, and C. Walton, Finite dimensional Hopf actions on Weyl algebras, *Adv. Math.* 302 (2016), pp. 25–39.

16. P. Etingof and C. Walton, Finite dimensional Hopf actions on deformation quantizations, *Proc. Amer. Math. Soc.* 145 (2017), pp. 1917-1925.

15. S. J. Sierra and C. Walton, Maps from the enveloping algebra of the positive Witt algebra to regular algebras, *Pacific J. Math* 284, no. 2 (2016), pp. 475–509.

14. P. Etingof, D. Goswami, A. Mandal, and C. Walton, Hopf coactions on commutative algebras generated by a quadratically independent comodule, *Comm. Algebra* 45, no. 8 (2017), pp. 3410–3412.

13. C. Walton and X. Wang, On quantum groups associated to non-Noetherian regular algebras of dimension 2, *Math Z.* 284, no. 1, (2016), pp. 543–574.

12. K. Chan, E. Kirkman, C. Walton, and J. J. Zhang, Quantum binary polyhedral groups and their actions on quantum planes, *J. Reine Angew. Math* 2016, no. 719 (2016), pp. 211–252.

11. P. Etingof and C. Walton, Pointed Hopf actions on fields, II, *J. Algebra* 460 (2016), pp. 253–283.

10. R. Kinser and C. Walton, Actions of some pointed Hopf algebras on path algebras of quivers, *Algebra & Number Theory* 10, no. 1 (2016), pp. 117–154.

9. J. Cuadra, P. Etingof, and C. Walton, Semisimple Hopf actions on Weyl algebras, *Adv. Math.* 282 (2015), pp. 47–55.

8. P. Etingof and C. Walton, Pointed Hopf actions on fields, I, *Transform. Groups* 20, no. 4 (2015), pp 985–1013.

7. C. Walton and S. Witherspoon, Poincaré-Birkhoff-Witt deformations of smash product algebras from Hopf actions on Koszul algebras, *Algebra & Number Theory* 8, no. 7 (2014), pp. 1701–1731.

6. S. J. Sierra and C. Walton, The universal enveloping algebra of the Witt algebra is not noetherian, *Adv. Math.* 262 (2014), pp. 239–260.

5. K. Chan, C. Walton, and J. J. Zhang, Hopf actions and Nakayama automorphisms, *J. Algebra* 409 (2014), pp. 26–53.

4. P. Etingof and C. Walton, Semisimple Hopf actions on commutative domains, *Adv. Math.* 251C (2014), pp. 47–61.

3. K. Chan, C. Walton, Y. Wang, and J. J. Zhang, Hopf actions on filtered regular algebras, *J. Algebra* 397, no. 1 (2014), pp. 68–90.

2. C. Walton, Representation theory of three-dimensional Sklyanin algebras, *Nuclear Physics* 860, no. 1 (2012), pp. 167–185.

1. C. Walton, Degenerate Sklyanin algebras and generalized twisted homogeneous coordinate rings, *J. Algebra* 322, no. 7 (2009), pp. 2508–2527; Corrigendum, 356 , no. 1 (2012), pp. 275–282.

PREPRINTS   **3.** J. Kesten and C. Walton, Division algebras in monoidal categories, `https://arxiv.org/abs/2502.02532`, *submitted*.

2. A. Czenky, J. Kesten, A. Quinonez, and C. Walton, On extended Frobenius structures, `https://arxiv.org/abs/2410.18232`, *submitted*.

1. R. Laugwitz, C. Walton, and M. Yakimov, Reflective centers of module categories and quantum K-matrices, `https://arxiv.org/abs/2307.14764`, *submitted*.

EXPOSITORY
PUBLICATIONS   **1.** C. Walton, An Invitation to Noncommutative Algebra, *A Celebration of the EDGE Program's Impact on the Mathematics Community and Beyond.* Springer, Cham, 2019. pp. 339–366.

DISTINGUISHED   **Fields-Carleton Distinguished Lecture series**   Oct. 2023
INVITED LECTURES   "Modernizing Modern Algebra", Carleton U., Ottawa, Canada.

Invited Scientific Lecture, Blackwell-Tapia Conference   Nov. 2021
"Frobenius Algebras Galore", SLMath=MSRI/ IPAM/ IMSI/ IAS [online].

NAM Claytor-Woodard Lecture, Joint Mathematics Meeting   Jan. 2021
"An Invitation to Noncommutative Algebra", Washington, DC [online].
Review: `https://bit.ly/3qDonWI` (short url)

Declined: AMS Invited Address, Joint Mathematics Meeting   *Jan. 2021*
(Previously accepted to give MAA Invited Address, at most one allowed)

MAA Invited Address, Joint Mathematics Meeting   Jan. 2021
"Navigating Collaboration", Washington, DC [online].

Plenary Lecture, AWM Symposium   Apr. 2019
"Quantum Symmetry...and more", Rice U., Houston, Texas.

Plenary Lecture, AMS Western Section Meeting   Oct. 2016
"On Quantum Symmetry", U. Denver, Denver, Colorado.

INVITED AND   **On extended Frobenius structures**
CONTRIBUTED   Algebra seminar, Texas A&M U., College Station, Texas.   Oct. 2024
RESEARCH TALKS
               Reflective centers and quantum K-matrices
               Rocky Mountain Representation Theory seminar [online].   Jan. 2024
               Subfactors and 2-categories conference, BIRS, Banff, Canada. Dec. 2023
               Global Categorical Symmetries conference, Les Diablerets, Switzerland. Aug. 2023

Constructing non-semisimple modular categories

Southeastern Lie Theory Workshop, North Carolina State U.	May 2023
Algebra Seminar, U. Marburg, Germany.	Aug. 2022
Hopf algebras, monoidal cat, related topics, Bucharest, Rom. [online]	July 2022
Math. Forschungsinstitut Oberwolfach, Oberwolfach, Germ. [online].	Sept. 2021
SIAM-AG21 Minisymposium [online].	Aug. 2021
Seattle Noncommutative Algebra Day, U. Washington [online].	Dec. 2020

Filtered Frobenius algebras in monoidal categories

Emmy Noether Seminar, U. Erlangen-Nüremburg, Germany.	Nov. 2022
Quantum Topology and Categorification Seminar, U. Hamburg, Germ.	Oct. 2022
Algebra Seminar, U. Edinburgh, UK.	Oct. 2022
Algebra Seminar, TU Dresden, Dresden, Germany [online].	Dec. 2021
Mathematical Congress of the Americas [online].	July 2021

Modernizing Modern Algebra: Category theory is coming...

Department Colloquium, U. Hamburg, Germany.	Nov. 2022
Giessen-Marburg Joint Colloquium, U. Giessen, Germany.	Nov. 2022
SFB Higher Invariants Colloquium, U. Regensburg, Germany.	Oct. 2022
Department Colloquium, U. Edinburgh, UK.	Oct. 2022

Poisson geometry of PI Sklyanin algebras

Algebraic Geometry seminar, Stanford U. [online]	Jan. 2022
Math. Forschungsinstitut Oberwolfach, Oberwolfach, Germany.	May 2018
Noncommutative Algebra meeting, U. Washington, Seattle, Wash.	Mar. 2018
Joint Mathematics Meeting: Noncom. Alg. session, San Diego, Calif.	Jan. 2018
GAP XV: Quantization, Penn. State University, State College, Penn.	Aug. 2017
Linking noncom. rings and alg. geom. ICMS, Edinburgh, Scotland	June 2017
Gone Fishing conference, Notre Dame, Notre Dame, Indiana.	May 2017

Frobenius Algebras Galore

LAGOON seminar [online]	July 2021
Women in Comb. and Rep. Theory Workshop, UC Riverside [online]	May 2021

On Quantum Symmetry/ Hopf actions (survey)

Department Colloquium, U. Chicago [online].	May 2021
Department Colloquium, Ohio State U. [online].	Apr. 2021
Department Colloquium, Penn. State U. [online].	Mar. 2021
Department Colloquium, Dalhousie U. [online].	Nov. 2020
Department Colloquium, Rutgers U, [online].	Nov. 2020
Department Colloquium, Indiana U., Bloomington, Indiana.	Nov. 2019
Department Colloquium, U. Michigan, Ann Arbor, Michigan.	Oct. 2019
Department Colloquium, Rice U., Houston, Texas.	Oct. 2019
Geom. and Categ. Aspects of CFTs CMO-BIRS, Oaxaca, Mexico	Sept. 2018
Department Colloquium, Northern Illinois U., Dekalb, Illinois.	Apr. 2018
Department Colloquium, Purdue U., West Lafayette, Indiana.	Jan. 2018
Annual Math Conference, Miami U., Oxford, Ohio.	Sept. 2017
Department Colloquium, U. Washington, Seattle, Wash.	Mar. 2017
Department Colloquium, DePaul U., Chicago, Il.	Feb. 2017
Department Colloquium, Bryn Mawr, Bryn Mawr, Penn.	Jan. 2017
Department Colloquium, Emory U, Atlanta, Georgia.	Jan. 2017
Algebra Seminar, U. Illinois Urbana-Champaign, Urb.-Champ., Il.	Dec. 2016
Department Colloquium, Louisiana State U., Baton Rouge, Louis.	Nov. 2016

Modular Categories: CMO-BIRS, Oaxaca, Mexico.   Aug. 2016
Department Colloquium, U. Iowa, Iowa City, Iowa.   Dec. 2015
Department Colloquium, UCSB, Santa Barbara, Calif.   May 2015
Grad. Student Conf. (GSCAGT), Temple U., Philadelphia, Penn.   May 2015
Expository Talk, Maurice Auslander Conference, Woods Hole, Mass.   May 2015
Algebra section, SACNAS, Los Angeles, California.   Oct. 2014
Math. Forschungsinstitut Oberwolfach, Oberwolfach, Germany.   May 2014
Algebra Seminar, Northeastern U., Boston, Massachusetts.   Oct. 2013

Universal Quantum Semigroupoids
Noncommutative Algebra seminar [online].   Mar. 2021
Quantum Symmetries seminar [online].   Oct. 2020
Quantum Groups seminar [online].   Aug. 2020

Algebraic structures in group-theoretical fusion categories
A(achen)-B(ochum)-C(ologne)-D(arstellungstheorie) seminar [online].   July 2020
SLMath/MSRI Quantum Symmetries seminar [online].   Apr. 2020
Seattle Noncommutative Algebra Day, U. Washington, Seattle, Wash.   Feb. 2020

Tensor algebras in finite tensor categories
CIMPA school on Quantum Sym., U. Los Andes. Bogotá, Colombia   June 2019
Quantum Symmetries summer school, Ohio State U., Columbus, Ohio.   June 2019
Homotopy meets homology workshop, Trinity College, Dublin, Ireland.   May 2019
Seattle Noncommutative Algebra Day, U. Washington, Seattle, Wash.   Mar. 2019

On Morita equivalence
Department Colloquium, Indiana U., Bloomington, Indiana.   Feb. 2019

On the quadratic dual of the Fomin-Kirillov algebras
Algebra seminar, U. Waterloo, Waterloo, Canada.   Nov. 2018
AMS section meeting, Northeastern U., Boston, Mass.   Apr. 2018

On braided commutative algebras
Mathematical Physics seminar, Perimeter Institute, Waterloo, Canada.   Nov. 2018
AMS section meeting, San Francisco St. U., San Francisco, California.   Oct. 2018

Cocycle deformations of semisimple Hopf algebras
Joint Mathematics Meeting: AWM workshop, San Diego, Calif.   Jan. 2018
AMS section meeting, Washington St. U., Pullman, Wash.   Apr. 2017
Deformation Theory seminar, U. Penn, Philadelphia, Penn.   Feb. 2017

Universal enveloping algebra of the Witt algebra is not noetherian
AMS section meeting, U. Calif. Riverside, Riverside, Calif.   Nov. 2017
Seattle Noncommutative Algebra Day, Seattle, Washington.   Aug. 2015
AMS section meeting, Temple U., Philadelphia, Pennsylvania.   Oct. 2013
Algebra seminar, U. California San Diego, San Diego, California.   Apr. 2013
Algebra seminar, U. Oregon, Eugene, Oregon.   Apr. 2013

Noncommutative McKay Correspondence
Quantum Symmetries: Subfactors and Planar Alg. conf., Maui, Hawaii.   July 2017
Joint Mathematics Meeting: Noncom. Alg. session,, Atlanta, Georgia.   Jan. 2017
Generalized Geometry Conf., Clay Math Inst., Oxford, England.   Dec. 2016

No Quantum Symmetry
Joint Mathematics Meeting: Quantum Groups session, Atlanta, Geor.   Jan. 2017
Lie Theory seminar, National Univ. of Córdoba, Córdoba, Argentina.   July 2016

US-Mexico conf. Rep. Theory, Categ., Noncom. Alg., USC, LA, Calif.　June 2016

PBW deformations of braided products
Algebra Seminar, Louisiana State U., Baton Rouge, Louis.　Nov. 2016
Joint Mathematics Meeting: Noncom. Alg. session, Seattle, Wash.　Jan. 2016

On quantum groups associated to a pair of preregular forms
AMS section meeting, Bowdoin College, Bowdoin, Maine.　Sept. 2016
Bridges between Noncom. Algebra and Alg. Geom., BIRS, Banff, Can. Sept. 2016
XXI Coloquio Latin. de Álgebra, U. Buenos Aires, Buenos Aires, Arg.　July 2016

Finite dimensional Hopf actions on algebraic quantizations　Apr. 2016
Seattle Noncommutative Algebra Day, Seattle, Washington.

Semisimple/ Finite dimensional Hopf actions on Weyl algebras
Nichols Algebras and applications, BIRS, Banff, Canada　Sept. 2015
AMS section meeting, Michigan State U., East Lansing, Michigan.　Mar. 2015
Noncommutative Alg. Geom. workshop, Fudan U., Shanghai, China.　Aug. 2014

On quantum groups assoc. to non-Noetherian reg. algebras of dim. 2
Geometric Algebra Conference, Fields Institute, Toronto, Canada.　July 2015
AMS section meeting, U. Nevada Las Vegas, Las Vegas, Nevada.　Apr. 2015

Actions of some pointed Hopf algebras on path algebras of quivers
Joint Mathematics Meeting: Noncom. Alg. session, San Antonio, Tex.　Jan. 2015
Hopf algebras and actions workshop, U. Washington, Seattle, Wash.　Nov. 2014

Finite dimensional Hopf actions on commutative domains
Representation Theory seminar, Northeastern U., Boston, Mass.　Nov. 2014
Poisson 2014, U. Illinois Urbana-Champaign, Urbana, Illinois.　Aug. 2014
Math. Forschungsinstitut Oberwolfach, Oberwolfach, Germany.　Apr. 2014
Algebra seminar, U. Washington, Seattle, Washington.　Nov. 2013

Noncommutative Invariant Theory (survey)
Department Colloquium, Rice U., Houston, Texas.　Sept. 2014
Department Colloquium, Sam Houston State U., Huntsville, Texas.　Mar. 2014
Algebra Seminar, Texas A&M U., College Station, Texas.　Mar. 2014
Department Colloquium, Syracuse U., Syracuse, New York.　Feb. 2014
Department Colloquium, Temple U., Philadelphia, Pennsylvania.　Jan. 2014
Department Colloquium, U. California San Diego, San Diego, Calif.　Jan. 2014
Department Colloquium, U. Waterloo, Waterloo, Canada.　Nov. 2013
AMS section meeting, Temple U., Philadelphia, Pennsylvania.　Oct. 2013
Every Topic seminar, Brandeis U. Waltham, Massachusetts.　Oct. 2013
Southern California Algebra Conference (UCLA)　Apr. 2013
Department Colloquium, Iowa State University, Ames, Iowa.　Apr. 2013

PBW deformations of smash product algebras from Hopf actions
CMS section meeting, U. Ottawa, Ottawa, Canada.　Dec. 2013

Semisimple Hopf actions on commutative domains
Postdoctoral seminar, SLMath/MSRI, Berkeley, California.　Mar. 2013

Hopf actions and Nakayama automorphisms
New Trends in Noncom. Algebra and Alg. Geom., BIRS, Banff, Can.　Oct. 2012

Quantum binary polyhedral groups and their actions on quantum planes
Algebra seminar, Syracuse University, Syracuse, New York.　Oct. 2012

	Noncommutative Invariant Theory conf., U. Washington, Seattle.	May 2012
	Comm. Alg. with Alg. Geom., Rep. Thy, CIMAT, Guanajuato, Mex.	May 2012
	AMS section meeting, U. Hawaii at Manoa, Honolulu, Hawaii.	Mar. 2012

Representation theory of three-dimensional Sklyanin algebras

Noncom. Alg. Geom., D-branes, Simons Center, Stony Brook, N. York.	Dec. 2011
Algebra seminar, U. California Santa Barbara, Santa Barbara, Calif.	Nov. 2011
AMS section meeting, Wake Forest U., Winston-Salem, N. Carolina.	Sept. 2011

Degenerate Sklyanin Algs. and Gen. Twisted Homog. Coord. Rings

Algebra Seminars, U. Stuttgart, Ger.; U. Newcastle, U. Leeds, UK.	Feb. 2011
Department Colloquium, Wake Forest U., Winston-Salem, N. Carolina.	Nov. 2010
Algebraic Geometry Seminar, U. Illinois U-C, Urbana, Illinois.	Nov. 2010
Algebra Seminar, Michigan State U., East Lansing, Michigan.	Oct. 2010
Kent Algebra Days, U. Kent, Canterbury, England.	June 2010
Algebraic Geometry Seminar, U. Warwick, Warwick, England.	Feb. 2010
AMS Western section meeting, U. California, Riverside, California.	Nov. 2009
Algebra Seminar, Northeastern U., Boston, Massachusetts.	Oct. 2009

INVITED EXPOSITORY TALKS (FOR UGRADS)

Hamilton's Quaternions

Undergraduate Math Club, Rice U., Houston, Texas.	Sept. 2021
Undergraduate Math Club, Louisiana State U., Baton Rouge, Louis.	Nov. 2016
Undergraduate Math Club, Temple U., Philadelphia, Penn.	Feb. 2016
Undergraduate Mathematics Symposium, U. Illinois, Chicago, Illinois.	Oct. 2015
MathROOTS (high school program), MIT, Cambridge, Mass.	June 2015, 2016

Symmetries in Algebra

GROW conference, U. Illinois U-C, Urbana, Illinois.	Oct. 2019
Department Colloquium, Reed College, Portland, Oregon.	Mar. 2018

An Introduction to Noncommutative Invariant Theory

Undergraduate Math Club, MIT, Cambridge, Massachusetts.	Apr. 2015
Keynote address, AFRAmath conference, Boston U. Boston, Mass.	Apr. 2014
ADVANCE PRiME seminar series, Purdue U., West Lafayette, Indiana.	July 2013
EDGE symposium, New College of Florida, Sarasota, Florida.	June 2013

Noncommutative Algebra?!

PURE REU, University of Hawaii, Hilo, Hawaii.	July 2015
Department Colloquium, Smith College, Northampton, Massachusetts.	Sept. 2014
Department Colloquium, Medgar Evers College, New York, New York.	Apr. 2014
Department Seminar, Spelman College, Atlanta, Georgia.	Sept. 2010
Department Colloquium, Wellesley College, Wellesley, Massachusetts.	Oct. 2009
Undergraduate Math Club, U. of Michigan, Ann Arbor, Michigan.	Oct. 2009

Introducing Noncommutative Projective Algebraic Geometry

Alg. and Rep. Thy (ARTIN) meeting, U. Glasgow, Scotland.	May 2008
Inst. of Adv. Study: Women and Mathematics, Princeton, New Jersey.	May 2007

INVITED PROFESSIONAL DEVELOPMENT LECTURES

Beyond Abstract Algebra

Women and Mathematics Program, Inst. for Advanced Study [online].	May 2021

Navigating Collaboration

CIMPA school on Quantum Sym., U. Los Andes. Bogotá, Colombia	June 2019
Infinite Possibilities Conference, Howard U., Washington D.C.	Apr. 2018

Math in the Age of Trump
USTARS conference, Amherst College, Amherst, Mass.   Apr. 2017
Marjorie Lee Browne Colloquium, U. Michigan, Ann Arbor, Michigan.   Jan. 2017

CONFERENCES,
WORKSHOPS
CO-ORGANIZED
SLMath/MSRI semester on Quantum Symmetry   Spr. 2020 + Sum. 2024
Simons Laufer Mathematical Sciences Institute/ MSRI, Berkeley, California.
- Program Organizer, http://www.msri.org/programs/312
- Contact organizer, Conn. for Women, http://www.msri.org/workshops/905
- Reunion Program Organizer, https://www.slmath.org/programs/388

Noncom. Geometry and Noncom. Invariant Thy workshop   Sept. 2022
Banff International Research Station, Banff, Canada.
- Organizer, https://www.birs.ca/events/2022/5-day-workshops/22w5084

Women in Noncommutative Algebra and
Representation Theory 3 (WINART3) workshop   Apr. 2022
Banff International Research Station, Banff, Canada.
- Contact organizer, https://bit.ly/3wWDzj2 (short url)
- Research Group co-leader (with Elizabeth Wicks)

Gulf Coast Undergraduate Research Symposium (GCURS)   Oct. 2021
Mathematics section co-organizer, Rice University, Houston, Texas.

AMS Meeting Special Sessions   (*various*)
Hom'l aspects of quantum symmetries, Joint Math Meeting, Wash. DC. Jan. 2021
New Dev. in NC Alg. & Rep. Thy, Joint Math Meeting, Atlanta, GA.   Jan. 2017
Quantum Algebra, Western Section Meeting, Denver, Colorado.   Oct. 2016

Quasy-Con: Midwest Quantum Symmetries conference   Nov. 2019
- Contact organizer, https://math.rice.edu/~notlaw/QuaSy-Con2019.html

Women in Noncommutative Algebra and
Representation Theory 2 (WINART2) workshop   May 2019
University of Leeds, Leeds, UK.
- Non-local Contact organizer, https://bit.ly/2LTQJXy (short url)
- Research Group co-leader (with Julia Plavnik)
- NSF conference grant DMS-1900575, $11,398.00 USD

Kirkman & Lorenz: Algebra Extravaganza!   July 2017
Conference in honor of Ellen Kirkman and Martin Lorenz
Temple University, Philadelphia, Pennsylvania.
- Contact organizer, https://math.temple.edu/events/conferences/k-l/
- NSF conference grant DMS-1712663 (co-PI with V. Dolgushev), $24,969 USD

Graduate Student Conf in Algebra, Geometry, and Topology   May 2016
Temple University, Philadelphia, Pennsylvania.
- https://math.temple.edu/events/conferences/gscagt/
- NSF conference grant DMS-1623003 (co-PI with D. Futer), $37,900 USD

Women in Noncommutative Algebra and
Representation Theory (WINART) workshop [16w5023]   April 2016
Banff International Research Station, Banff, Canada.
- Contact organizer, https://bit.ly/2kNgNaq (short url)

POSTDOCTORAL
ADVISEES
Hongdi Huang, Rice University.   July 2020 - present
- Next position: Assistant Professor of Mathematics at Shanghai U.

	Xingting Wang, Temple University.	July 2015 - June 2018

- Next position: Assistant Professor of Mathematics at Howard U.
- Current position: Assistant Professor of Mathematics at Louisiana State U.

Ph.D. Advisees
Jacob Kesten, Rice University. Ph.D candidate. July 2023 - present

Fernando Liu Lopez, Rice University. Ph.D candidate. June 2021 - present
- Excellence in Teaching Award, Department of Mathematics, Rice U.
- Graduate Teaching Award for Independent Instruction, Rice U.

Anh-Tuong Nguyen, UIUC. Ph.D candidate. June 2019 - Dec 2023
- Thesis: Coend elements of a Hopf algebra in a braided rigid monoidal category.
- Next position: Trexquant Investment.

Fabio Alejandro Calderón Mateus, U.N.C.-Bogotá. Sep. 2020 - July 2023
- Co-advisor: Milton Armando Reyes Villamil, U.N.Colombia-Bogotá
- Thesis: Algebraic properties of weak quantum symmetries.
- Fulbright Fellowship to visit Rice U.
- Next position: Postdoctoral Fellowship at the Universidad de los Andes.

Harshit Yadav, (UIUC transfer to) Rice University. Jan. 2019 - Apr. 2023
- Thesis: Functorial constructions of Frobenius algebras in the Drinfeld center.
- Nettie S. Autrey Fellowship , Rice U.
- Next position: Max Wyman Assistant Professorship at U. Alberta.

Zachary Cline, Temple University. Dec 2015 - May 2019
- Thesis: Extending actions of Hopf algebras to actions of the Drinfel'd double.
- Next position: Visiting Assistant Professorship at Bucknell U.
- Current position: TREND Community.

Short-term Advisees
Vincent Thompson, Rice University. Houston, TX. Jan. 2022 - May 2023
Colleen Delaney, Indiana U., Bloomington, IN (Postdoc institution). Spr. 2020
Pablo Ocal, Texas A&M U., College Station, TX (Ph.D institution). Spring 2020
Hongdi Huang, U. Waterloo, Waterloo, Canada (Ph.D institution). Fall 2019

Undergraduate Research Advisees
Abiel Quinonez, Rice University May 2024 - Nov. 2024
- Topic: Extended Frobenius structures.
- Currently applying to Ph.D programs in Mathematics.

Amanda Hernandez, Rice University Jan. 2021 - Apr 2022
- Topic: Non-counital Frobenius algebras.
- Next position: Mathematics Ph.D. program at Brown U.

Andrew Estornell, **Matthew Wynne**, Temple Univ. Apr. 2017 - May 2018
- Topic: Deformations of noncommutative algebras.
- AE's Next position: Mathematics Ph.D. program at the U. Washington.
- MW's Next position: Computer Science Ph.D. program at Washington U.

Dong Bin Choi, Temple University. Jan. - Dec. 2016
- Topic: Noncommutative Invariant Theory.
- Next position: Mathematics Ph.D. program at Temple U.

Daniel Reich, Temple University. June 2014 - Aug. 2015
- Topic: PI three-dimensional Sklyanin algebras.
- Next position: Applied Mathematics Ph.D. program at North Carolina State U.

THESIS COMMITTEE MEMBER	Zhengyi Han, Masters, Computer Science, Rice U., Houston, TX.	Dec. 2024
	Zachary Spaudling, Ph.D, Mathematics, Rice U., Houston, TX.	May 2024
	Austen James, Ph.D, Mathematics, Rice U., Houston, TX.	Nov. 2022
	Zhiyuan Wang, Ph.D, Physics, Rice U., Houston, TX.	July 2022
	Helbert Venegas Ramirez, Ph.D, Math, U. N. C., Bogotá, Colombia.	June 2020

TEACHING

Course Instructor

Rice University, Houston, Texas

- Algebra 1 (Undergrad), Math 356.	Fall 2024
- Topics in Algebra (Grad), Symmetries of Algebras, Math 466/566.	Spring 2024
- Algebra 1 (Grad), Math 463/563.	Fall 2023
- Algebra 2 (Grad), Math 464/564.	Spring 2023
- Group Representation Theory (Undergrad), Math 374.	Spring 2022
- Algebra 1 (Grad), Math 463/563.	Fall 2021
- Algebra 2 (Undergrad), Math 357.	Spring 2021
- Algebra 1 (Grad), Math 463/563.	Fall 2020

University of Illinois, Urbana-Champaign, Illinois

- Algebra (Grad), Math 500.	Fall 2019
- Abstract Algebra (Ugrad), Math 417 sections D13, E13.	Spring 2019
- Abstract Algebra (Grad), reading course.	Spring 2019
- Representation Theory (Grad), Math 506.	Fall 2018

Temple University, Philadelphia, Pennsylvania

- Abstract Algebra (Grad), Math 8011.	Fall 2017
- Homological Algebra (Grad), Math 9011.	Spring 2017
- Modern Algebra (Ugrad), Math 3098.	Fall 2016
- Calculus III (Ugrad), Math 2043, Section 008.	Spring 2016

Massachusetts Institute of Technology, Cambridge, Massachusetts.

- Seminar in Algebra and Number Theory (Ugrad), Math 18.704.	Spring 2015

Learning Group Facilitator

State sums models and Invariants of 3-Manifolds.	Spring 2023

- Meusburger's *State sum models with defects based on spherical fusion cat.* (2022).

2-dim'l Top'l Quantum Field Theories and Frob. algebras.	Spring 2019, Fall 2022

- Kock's *Frobenius Algs and 2D Top'l Quantum Field Theories* (2003) §1.1-3.3.
- Led by Fernando Liu Lopez in Fall 2022.

Algebraic Structures in Braided Tensor Categories [hybrid].	Fall 2021, Spring 2022

- Fröblich-Fuchs-Runkel-Schweigert's *Correspondences of ribbon categ.* (2006).

Hochschild cohomology [online].	Spring 2021

- Witherspoon's *Hochschild Cohomology for Algebras* (2020).

3-dim'l Top'l Quantum Field Theories and Modular Categories [online].	Fall 2020

- (no text, a couple of talks, the rest of the slots are videos and discussion)

Braided Tensor Categories [online].	Summer 2020

- Etingof-Gelaki-Nikshych-Ostrik's *Tensor Categories* (2015) Ch. 8.

Monoidal Categories.	Fall 2019

- Turaev-Virelizier's *Monoidal Categories and Top'l Field Theory* (2017) §1.1-6.7.

Directed Reading Course Facilitator

- Category Theory, (Ugrad, Rice), Math 490.	Spring 2024
- Category Theory, (Grad, Rice), Math 690.	Spring 2023

- Symmetries of Algebras, (Ugrad, Rice), Math 490.	Fall 2022
- Group Rep. Theory, Spelman-Morehouse DRP Program. [online]	Spring 2022
- Category Theory (Ugrad, Rice), unofficial.	Summer 2021
- Alg. Structures in Monoidal Categories (Ugrad, Rice), Math 490.	Spring 2021
- Group Representation Theory (Ugrad, Rice), Math 490.	Fall 2020

Advanced Short Course Instructor

CIMPA summer school on Hopf algebra and Tensor Categories.	Aug. 2019
- Location: National Univ. of Córdoba, Córdoba, Argentina.	

Instructor for Enhancing Diversity in Graduate Education program

Course: Advanced Linear Algebra

Howard College, Washington D.C.	June 2015
Harvey Mudd College, Claremont, California.	June 2014
New College of Florida, Sarasota, Florida.	June 2013
Pomona College, Claremont, California.	June 2012

Recitation Leader

Massachusetts Institute of Technology, Cambridge, Massachusetts.

Calculus III, Math 18.02 section 1 & 18.02 **Course Administrator**	Fall 2014
Calculus III, Math 18.02A sections 3 and 6	Jan. 2014
Calculus I-III, Math 18.01A/02A sections 2 and 3	Fall 2013
Calculus III, Math 18.02 sections 10 and 14	Fall 2012

Graduate Student Instructor (GSI)

University of Michigan, Ann Arbor, Michigan.

Calculus I (primary instructor), Math 115 section 18	Fall 2010
Differential Equations, Math 216 sections 41-44	Fall 2009
Calculus II (primary instructor), Math 116 section 36	Fall 2008
Calculus I (primary instructor), Math 115 section 42	Fall 2006

GSI, Michigan Math and Science Scholars	July 2006
University of Michigan, Ann Arbor, Michigan.	

GSI, Emerging Scholars Program	Aug. 2004 - May 2005
Michigan State University, East Lansing, Michigan.	

Selected Service and Outreach

INTERNAL SERVICE FOR RICE UNIVERSITY

- University-Wide Promotion and Tenure Committee	Fall 2023 - Spring 2025
- Physics/ Quantum Initiative Hiring Committee	Fall 2022 - Spring 2023
- Mathematics Hiring Interviewer	Fall 2021 - Spring 2023
- AGNT seminar organizer	Fall 2021 - Spring 2023
- Graduate Admissions Committee (co-chair from F2021)	Fall 2020 - Spring 2023
- Graduate Committee	Fall 2020 - Spring 2023
- Diversity Committee (member-at-large)	Fall 2020 - Spring 2023
- Appointments (Hiring) Committee	Fall 2020 - Spring 2021

INTERNAL SERVICE FOR UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

- Algebra seminar organizer	Fall 2019
- Colloquium Committee	Fall 2019
- Math 500 (Graduate Algebra) Committee	Fall 2019
- Graduate Affairs Committee	Fall 2018 - Spring 2019
- Graduate Recruit Application Screening	Fall 2018 - Fall 2019

INTERNAL SERVICE FOR TEMPLE UNIVERSITY

- Colloquium organizer	Fall 2016 - Fall 2017
- Graduate committee member	Fall 2015 - Spr. 2018
- Algebra seminar organizer	Fall 2015 - Fall 2017

EXTERNAL SERVICE ACTIVITIES

Referee. For various journals and international grants.

BIRS Scientific Advisory Board   Aug. 2023 - Jan. 2025

Journal Editor   (*various*)

Proceedings of the AMS, Editor	Feb. 2024 - Jan. 2028
Communications of the AMS, Associate Editor	Dec. 2020 - Jan. 2025

WINART Steering Committee   March 2022 - Feb. 2025

- Advisory role for the new leadership: D. Addabbo, M. Kulkarni, L. Martirosyan.

Panel Member

Job Advice Panel, Southeastern Lie Theory workshop, NCSU.	May 2023
NAM Panel, Joint Mathematics Meetings, San Diego, Calif.	Jan. 2018
Connections for Women workshop, SLMath/MSRI, Berkeley, Calif.	Jan. 2013
USTARS Symposium, U. Iowa, Iowa City, Iowa.	Apr. 2012
Diversity in Graduate Math workshop, SLMath/MSRI, Berkeley, Calif.	Oct. 2008
IAS Women and Mathematics, IAS, Princeton, New Jersey.	May 2007

WINART Network lead   July 2015 - Feb 2022

- Created and managed site women-in-ncalg-repthy.org & email listserv for women and non-binary researchers in Noncommutative Algebra and Representation Theory.
- Lead organizer for the first, second, and third WINART workshops.
- Liaison to the AWM and other Women in Math Research Networks.

NSF and NSA Grant Panels   Disclosed dates 2015, 2018, 2020, 2021

Scientific Advisory Committee

Poisson Geometry Summer School and Conference	July 2022
CIMPA Research School on Quantum Symmetries, Bogotá, Colombia	July 2019

Instructor, Enhancing Diversity in Grad. Education (EDGE) program

Howard College, Washington D.C.	June 2015
Harvey Mudd College, Claremont, California.	June 2014
New College of Florida, Sarasota, Florida.	June 2013
Pomona College, Claremont, California.	June 2012

AMS-Simons Travel Grants Committee Member   Feb. 2015 - Jan. 2018
American Mathematical Society, USA.

Advisory Board Member, MIT PRIMES   July 2014 - present
Massachusetts Institute of Technology, Cambridge, Massachusetts.

Program Coordinator, MIT PRIMES Circle   Aug. 2012 - July 2014
Massachusetts Institute of Technology, Cambridge, Massachusetts.

Member, Mathematics Undergraduate Committee   Aug. 2003 - May 2005
Michigan State University, East Lansing, Michigan USA.

- Initiated the development of course MTH 290: *Transition to Higher Mathematics*;
  Currently known as MTH 301: *Foundations of Higher Mathematics*.

· Updated: February 13, 2025 ·