

Ryan Kinser
ryan-kinser@uiowa.edu
homepage.math.uiowa.edu/~rkinser/
University of Iowa
College of Liberal Arts & Sciences
Department of Mathematics

Education

2009 **Ph.D.**, Mathematics, University of Michigan
2003 **B.S.**, Mathematics, University of Kansas (Minors: Philosophy, Physics)

Academic Appointments

Jan 2023– Departmental Executive Officer (Chair), Mathematics, University of Iowa
2024– Professor, Department of Mathematics, University of Iowa
2019–2024 Associate Professor, Department of Mathematics, University of Iowa
2013–2019 Assistant Professor, Department of Mathematics, University of Iowa
 (Research Leave 2013–2014)
2011–2014 Research Instructor, Department of Mathematics, Northeastern University
2009–2011 Postdoctoral Fellow, Department of Mathematics, University of Connecticut

Awards & Honors

2024 Collegiate Scholar *(by vote of CLAS Committee on Faculty Promotion and Tenure)*
Fall 2021 Professional Development Award *(one semester paid research leave)*
2017 Faculty Fellow, University of Iowa Learning Design Collaboratory
2014, 2017 US Junior Oberwolfach Fellow, Mathematisches Forschungsinstitut Oberwolfach and
 National Science Foundation

Professional Development

2024 DEO Program Fellow, *Big Ten Academic Alliance*
2023–2024 University of Iowa Academic Leadership Academy participant, *Office of the Provost*
2023 Crucial Conversations Workshop participant, *Organizational Effectiveness and College of Liberal Arts & Sciences*
2020 UI LEAD (Leadership Education, Assessment, and Development) participant, *Human Resources*
2019–2024 BUILD (Building University of Iowa Leadership for Diversity), *certificate completed Fall 2019, 11 total training courses completed*

External Funding

- 2024–2027 Graduate Assistance in Areas of National Need (GAANN), Mathematics. *Department of Education* (\$840,765). Ryan Kinser (Project Director), Isabel Darcy (Co-Director), Cynthia Farthing (Co-Director), Xiaoyi Zhang (Co-Director)
- 2023–2026 Quivers in quantum symmetry: a path algebra framework for algebras in tensor categories. *NSF DMS-2303334* (\$298,003). Ryan Kinser (PI).
- 2021–2025 Recruiting and Training Community College and University Students to Become Culturally Responsive and Proficient Mathematics Teachers in Iowa. *NSF DUE-1852725* (\$1,233,606). Dae Hong (PI), Patsy Steffen (Co-PI), Ryan Kinser (Co-PI), Julie Hartzler (Co-PI), Gregory Beaudine (Co-PI).
- 2019–2024 Quiver representations across geometry and algebra: equivariant K-theory, moduli spaces, and tensor categories. *Simons Foundation Collaboration Grant* (\$42,000). Ryan Kinser (PI).
- 2018–2022 Conference on Geometric Methods in Representation Theory 2018 and 2019. *NSF DMS-1839720* (\$11,836). Ryan Kinser (PI), Frauke Bleher (Co-PI).
- 2016–2019 Conference on Geometric Methods in Representation Theory 2016 and 2017. *NSF DMS-1644393* (\$11,285). Ryan Kinser (PI), Frauke Bleher (Co-PI).
- 2012–2014 Quiver Representations: Algebra, Geometry, and Combinatorics. *NSA Young Investigator Grant H98230-12-0244* (\$39,399). Ryan Kinser (PI).

Publications

Journal Articles

- J1. Kinser, R. & Lara, D. On Algebras of Finite General Representation type. *Accepted in Transformation Groups* (2024).
- J2. Kinser, R. Total stability functions for type A quivers. *Algebr. Represent. Theory* **25**, 835–845 (2022).
- J3. Kinser, R. & Lőrincz, A. C. Representation varieties of algebras with nodes. *J. Inst. Math. Jussieu* **21**, 2215–2245 (2022).
- J4. Etingof, P., Kinser, R. & Walton, C. Tensor algebras in finite tensor categories. *Int. Math. Res. Not. IMRN*, 18529–18572 (2021).
- J5. Kinser, R. & Oswald, A. Hopf actions of some quantum groups on path algebras. *J. Algebra* **587**, 85–117 (2021).
- J6. Kinser, R. & Rajchgot, J. Type D quiver representation varieties, double Grassmannians, and symmetric varieties. *Adv. Math.* **376**, Paper No. 107454, 44 (2021).
- J7. Carroll, A. T., Chindris, C., Kinser, R. & Weyman, J. Moduli spaces of representations of special biserial algebras. *Int. Math. Res. Not. IMRN*, 403–421 (2020).
- J8. Kinser, R., Knutson, A. & Rajchgot, J. Three combinatorial formulas for type A quiver polynomials and K -polynomials. *Duke Math. J.* **168**, 505–551 (2019).
- J9. Kinser, R. & Weist, T. Tree normal forms for quiver representations. *Doc. Math.* **24**, 1245–1294 (2019).

- J10. Chindris, C. & Kinser, R. Decomposing moduli of representations of finite-dimensional algebras. *Math. Ann.* **372**, 555–580 (2018).
- J11. Kinser, R. & Walton, C. Actions of some pointed Hopf algebras on path algebras of quivers. *Algebra Number Theory* **10**, 117–154 (2016).
- J12. Chindris, C., Kinser, R. & Weyman, J. Module varieties and representation type of finite-dimensional algebras. *Int. Math. Res. Not. IMRN*, 631–650 (2015).
- J13. Kinser, R. & Rajchgot, J. Type A quiver loci and Schubert varieties. *J. Commut. Algebra* **7**, 265–301 (2015).
- J14. Kinser, R. Tree modules and counting polynomials. *Algebr. Represent. Theory* **16**, 1333–1347 (2013).
- J15. Kinser, R. & Schiffler, R. Idempotents in representation rings of quivers. *Algebra Number Theory* **6**, 967–994 (2012).
- J16. Kinser, R. New inequalities for subspace arrangements. *J. Combin. Theory Ser. A* **118**, 152–161 (2011).
- J17. Kinser, R. Rank functions on rooted tree quivers. *Duke Math. J.* **152**, 27–92 (2010).
- J18. Kinser, R. The rank of a quiver representation. *J. Algebra* **320**, 2363–2387 (2008).

Peer-reviewed Conference Proceedings

- C1. Kinser, R. *K-polynomials of type A quiver orbit closures and lacing diagrams* in *Representations of algebras* **705** (Amer. Math. Soc., [Providence], RI, 2018), 99–114. ISBN: 978-1-4704-3576-9.

Working papers

- W1. Askelsen, E. & Kinser, R. *Actions of Hopf–Ore Extensions of Group Algebras on Path Algebras of Quivers* 16 pp. <https://arxiv.org/abs/2410.14880>.
- W2. Diaz, Y., Gilbert, C. & Kinser, R. *Total Stability and Auslander-Reiten Sequences for Dynkin Quivers* 16 pp. <https://arxiv.org/abs/2208.02445>.
- W3. Kinser, R., Lanini, M. & Rajchgot, J. *Equivariant Geometry of Symmetric Quiver Orbit Closures* 37 pp. <https://arxiv.org/abs/2410.06929>.

Selected Presentations

A selection of invited presentations since 2014.

Research presentations

- 2024 Qua-Sy Con II, University of Notre Dame
- 2023 Joint Spectra and related Topics in Complex Dynamics and Representation Theory, Banff International Research Station for Mathematical Innovation and Discovery, Canada
- 2022 Noncommutative Geometry and Noncommutative Invariant Theory, Banff International Research Station for Mathematical Innovation and Discovery, Canada

2021	Mathematics Department Colloquium, Northern Illinois University
2021	Algebra, Geometry, and Combinatorics online seminar; organized by universities across the USA and Canada
2020	GAAG 2020 - Workshop on Geometry in Algebra and Algebra in Geometry, Universidade Federal Fluminense, Niterói, Brazil 90 minute panoramic lecture
2020	IV Colloquium on Representations of Algebras and Its Applications; Alexander Zavadskij, National University of Colombia
2020	Representation Theory of Quivers and Finite Dimensional Algebras, Oberwolfach Mathematical Research Institute, Oberwolfach, Germany
2018	Geometric and Homological Methods in the Representation Theory of Associative Algebras and Their Applications, Geometry of representations of algebras, CIMPA (Centre International de Mathématiques Pures et Appliquées), Medellín, Colombia. 5 hour short course.
2017	US-Mexico Conference on Representation Theory, Categorification, and Noncommutative Algebra, Universidad Nacional Autónoma de México, Mexico City, Mexico
2017	Algebra Extravaganza!, Temple University
2017	Maurice Auslander Distinguished Lectures and International Conference, Woods Hole, Massachusetts
2017	Representation Theory of Quivers and Finite Dimensional Algebras, Oberwolfach Mathematical Research Institute, Oberwolfach, Germany
2017	University of Saskatchewan AGeNT seminar, Saskatoon, Canada
2017	Mathematics Department Colloquium, Depaul University
2016	International Conference on Representations of Algebras, Syracuse University, Syracuse, New York, United States One of 12 plenary lectures selected from 150 submitted abstracts
2015	Algebra and Geometry Seminar, Sapienza University of Rome, Rome, Italy
2015	International Conference on Representation Theory and Commutative Algebra, Storrs, Connecticut
2015	Maurice Auslander Distinguished Lectures and International Conference, Woods Hole, Massachusetts
2014	Conference on cluster algebras and representation theory, Korea Institute for Advanced Study, Seoul, Korea
2014	UNAL Encuentro de Matemáticas, Universidad Nacional de Colombia, Bogotá, Colombia
2014	Representation Theory of Quivers and Finite Dimensional Algebras, Oberwolfach Mathematical Research Institute, Oberwolfach, Germany

Guided conversations and panel discussions

2025	Community Leadership Panel. <i>Berry Career Institute, Cornell College</i>
2024	Getting into a PhD program. <i>Panel participant at Math Alliance Field of Dreams conference</i>
2022	Supporting Minority Mentoring & Recruitment Across the Continuum. <i>Guided Conversation Co-Facilitator at Math Alliance Field of Dreams conference</i>
2022	Policies for Successful Graduate Programs - Minority Mentoring & Retention. <i>Guided Conversation Facilitator at Math Alliance Field of Dreams conference</i>

2021	Podium discussion on the future of online events and meetings in general. <i>Online TRAC seminar (Théorie des Représentations et ses Applications et Connexions aux autres domaines)</i>
2019	Creating and supporting an inclusive mathematical community through our professional environment. <i>Design and facilitation of Early Career Faculty Workshop session at the Underrepresented Students in Topology and Algebra Research Symposium (USTARS)</i>
2018	How to prepare for your first professional position. <i>Panel participant at Math Alliance Field of Dreams conference</i>

Teaching

Served as Primary Instructor for a range of classes from Pre-calculus to graduate-level courses on current research, typically one or two courses per semester 2009–2022.

Innovations and professional development

2021	Course redesign MATH:5900 First-year Graduate Seminar, design and implementation of two course modules: Individual Development Plans and Career Overviews for doctoral students in mathematical sciences and How to Match with a Research Advisor for doctoral students in mathematical sciences
2017–2019	Course redesign MATH:1550 Engineering Math I, Student centered course redesign in conjunction with the Learning Design Collaboratory and Office of Teaching, Learning & Technology
2017	Summer 2017, Participant in Learning Design Collaboratory Community of Practice through Office of Teaching, Learning & Technology

Research Advising

Graduate

2023–	Ahmed, Bakhtiar
2023–	Mattson, Blake
2022–	Singh, Shashank
2022–	Del Real Ramos, Kevin
2022–	Van Grinsven, Jacob
2021–	Askelsen, Elise
2021–2024	Sauder, Joseph (co-advised with Bruce Ayati). <i>PhD Completed. Career in industry.</i>
2019–2023	Diaz, Yariana. <i>PhD Completed. First position: Macalester University</i>
2019–2023	Gilbert, Cody. <i>PhD Completed. First position: Saint Louis University</i>
2019–2022	Oswald, Amrei. <i>PhD Completed. First position: University of Washington</i>
2016–2019	Lara, Danny. <i>PhD Completed. First position: Central Washington University</i>
2015–2018	Berrizbeitia, Ana. <i>PhD Completed. First position: Colorado Mesa University</i>

Undergraduate

2021–2022 Davis, Nyah. 2021 Goldwater Scholar, NSF-RTG Undergraduate Scholarship, Ford Foundation Pre-doctoral Fellowship (declined), NSF Graduate Research Fellow. Currently PhD student at Rice University.

Service

Selected service activities across various scopes

University

2025– Strategic Plan Action and Resource Committee, Recruitment subcommittee member
2023– Native American Council, Member
2023– Excellence in Teaching & Learning DEO Action Group, Member
2024 D.C. Priestersbach Dissertation Prize Committee, Member
2024 28th Annual UI Powwow Committee, Fundraising Chair
2021–2023 Diversity, Equity, and Inclusion Success Collaborative, Member
2023 Co-organizer of STEM Celebration of MLK “Social responsibility in STEM” discussion panel, featuring panelists from across U. Iowa (*joint with College of Engineering*)
2022 Lead organizer of STEM Celebration of MLK lecture by Tracy Jon Sargent, Executive Director of Multicultural Development Center of Iowa (*joint with College of Engineering*)
2021 Lead organizer of STEM Celebration of MLK “Service through STEM” discussion panel feature panelists from CLAS, Engineering, and U. Iowa Division of DEI (*joint with College of Engineering*)
2020 Lead organizer of STEM Celebration of MLK lecture by UI Provost Montse Fuentes
2019 Lead organizer of STEM Celebration of MLK lecture by entrepreneur and Iowa PhD graduate Paulette Willis

College

Fall 2023 CLAS Commencement Ceremony, Platform Official
2023 Search Committee for Mathematics, Chemistry, Physics & Astronomy Senior Advisor
2023 Panelist, NSF-GRFP Information Session organized by CLAS
2023 Presentation at Graduate Directors meeting on Inclusive Recruitment and Holistic Admission in graduate programs
2020–2023 CLAS Diversity, Equity, and Inclusion Committee, Member
2021 Co-organizer of “Can We Talk?” film screening and panel discussions (*as part of CLAS Theme Year “Pursuing Racial Justice at Iowa”*)

Department

2014– Algebra seminar, Co-Organizer

2018–2023	Director of Diversity, Equity, and Inclusion in Mathematics
Fall 2022	Graduate Committee, Member
2017–2024	Ph.D. student recruitment at Field of Dreams conference (<i>annual event</i>)
2021	Wrote majority of departmental Learning Outcomes and Assessment report for Graduate College
2021	Coordinated extension of mentoring system to all incoming Math PhD students, <i>in conjunction with AAU PhD Education Initiative</i>
2021	Enrollment Committee
2019–2020	Strategic Plan Committee, Member
2017–2020	Graduate Committee
2016, 2020	Ph.D. student recruitment trip to Puerto Rico
2016–2019	Executive Committee
2015–2018	Committee for Diversity and Inclusion, Member
2017	Bylaws (Manual of Operations) Committee
2015–2017	Hiring Committee
2014–2016	Mathematics Colloquium Committee, Co-Chair

Profession

2019–	Math Alliance mentor for students in Facilitated Graduate Admissions Process
2020–2024	FD Seminar, Co-Organizer, weekly online research seminar
2024	Underrepresented Students in Topology & Algebra Research Symposium (USTARS), local organizer
2023	NSF CAREER panel, Reviewer
2021	FONDECYT (National Fund for Scientific and Technological Development) Chile, Grant reviewer
2021	AMS, Special Session: Quiver Representations: Bridging Theory and Application, Organizer
2020	Universidad Nacional de Colombia, Doctoral thesis jury member for two students
2016–2019	Geometric Methods in Representation Theory Conference organizer (<i>annual event</i>)
2019	Homological Methods and Tilting Theory of Finite Dimensional Algebras, Organizing Committee

Professional Memberships

2023–	American Indian Science and Engineering Society
2020–	Society for Advancement of Chicanos/Hispanics and Native Americans in Science
2019–	National Association of Mathematicians (lifetime member) <i>Professional organization promoting excellence in the mathematical sciences, and mathematical development of all underrepresented American minorities in general and African-Americans in particular.</i>

Last updated: May 12, 2025