

Dr. Erika Birgit Kaufmann, née Wehefritz

DEPARTMENTS OF MATHEMATICS AND PHYSICS AND ASTRONOMY, PURDUE UNIVERSITY
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Curriculum vitae

July 2023

Current Positions

- since July 23 Associate Head of Graduate Studies
Department of Mathematics, Purdue University
- since Aug 18 Professor, Purdue University
with a joint appointment in Mathematics (75%) and Physics and Astronomy (25%)

Positions held

- Aug 13 – Aug 18 Associate Professor, joint in Math and Physics & Astronomy, Purdue University
- Aug 07 – Aug 13 Assistant Professor (tenure-track), joint in Math and Physics & Astro., Purdue
- Spr 16 Visitor at the Max-Planck Institute for Mathematics, Bonn, Germany
- Spr 14 Visitor at the Max-Planck Institute for Mathematics, Bonn, Germany
- Fall 13 Member in the School of Mathematics, IAS, Princeton, NJ
- Sep 10 – Dec 10 Visiting Fellow, Physics Department, Princeton University
- Aug 04 – Aug 07 Assistant Professor-in-Residence at the University of Connecticut, Dept. of Physics
- Aug 03 – May 04 Visiting Assistant Professor at Oklahoma State University, Dept. of Physics
- Sep 02 – Aug 03 Post-doctoral fellow, Physics Department, University of Bonn (Germany)
- Sep 99 – Jun 02 Post-doctoral fellow at USC, Los Angeles (USA), Dept. of Physics & Astronomy,
with Prof. H. Saleur

Education

- Feb 99 **PhD**: graduated “magna cum laude” as Dr. rer. nat.
(German doctorate of natural sciences)
Thesis: *“The asymmetric XXZ-spin chain and the XX-model with boundaries”*
Advisor: Prof. V. Rittenberg
- Apr 94 – Feb 99 PhD studies in Statistical Physics, University of Bonn, Germany
- Mar 94 **MS**: graduated with a Diplom (german M.S.) with grade “Sehr gut” (Excellent)
Thesis: *“Finite-size scaling in reaction-diffusion models”*
Advisor: Prof. V. Rittenberg
- Sep 91 – Mar 94 Studies of physics, University of Bonn, Germany
- Sep 90 – Jul 91 Studies of physics, Université Joseph Fourier, Grenoble, France
- Jul 90 **BS**: passed the Vordiplom (german B.S.) with grade “Sehr gut” (Excellent)
- Sep 88 – Jul 90 Studies of physics, University of Bonn, Germany

Grants and Fellowships

- Aug 23 – Feb 24 Quantum Seed Grant, Purdue College of Science,
“Exploiting dissipation in open quantum systems”, joint with Q. Zhou,
Y. Chen and A. Ma (Dept. of Physics & Astro.)($\$25,000$ with a chance
of a second half year and another $\$25,000$ after completion of initial plans)
- Aug 23 – Feb 24 Quantum Seed Grant, Purdue College of Science,
“Exploiting Topological Phases of Matter”, joint with R. Kaufmann,
X. Cui and S. Kais (Dept. of Math. and Dept. of Chem.)($\$25,000$ with a chance
of a second half year and another $\$25,000$ after completion of initial plans)
- Jan 20 – May 20 DURi (Discovery Park Undergraduate Research Internship) project,
“Quantum Computing Algorithm for Partition Density Functional Theory”,
joint with A. Wasserman, Chemistry ($\$1,000$)
- 2013 – 2020 NSF CAREER grant “Physical properties of new materials via mathematics
– methods and applications” as PI ($\$419,985$)
- 2013 – 2014 Simons Fellowship in Theoretical Physics “Mathematical physics
of quantum systems” ($\$87,936$)
- 2010 – 2016 NSF Research Grant “Boundary Effects in Critical Phenomena” as PI ($\$267,705$)
- Summer 09 Purdue Research Foundation Summer Faculty Grant ($\$8,000$)
- Apr 00 – Apr 02 Post-doctoral fellowship grant of the German National Science Foundation
“Deutsche Forschungsgemeinschaft” (DFG) ($\$64,000$)
- Jun 95 – Jul 95 Travel grant of the DAAD (German academic exchange program) for the
Summer school “Processus Stochastiques”, Beg-Rohu, Quiberon (France) ($\$2,000$)
- Feb 94 Heraeus grant for the Winter school in theoretical physics
“Quantum Groups”, Karpacz (Poland) ($\$500$)
- Sep 90 – Aug 91 Fellowship of the DAAD for studies abroad ($\$5,000$)

Research Awards

- Oct 16 University Faculty Scholar (Purdue)

Teaching Awards

- May 23 Ruth and Joel Spira Teaching Award for Graduate Service Teaching,
Department of Mathematics, Purdue
- Mar 21 Justin Copenhaver, REU student I mentored, received a Goldwater fellowship
- Apr 20 Teaching for Tomorrow Senior Mentor Award, Office of the Provost, Purdue
- May 11 Teaching for Tomorrow Junior Fellow Award, Office of the Provost, Purdue
- Apr 11 Ruth and Joel Spira Teaching Award, Purdue Department of Mathematics

Teaching

COURSES TAUGHT AT PURDUE

- Spr 23 Quantum Mechanics 1 (Graduate course Phys 660)
- Spr 22 Honors Course Quantum Computing (HONR 39900) in the Honors College
- Spr 20 Recording of Advanced Mathematics for Engineers and Physicists I
(Graduate course MA 527)

Spr 17 & 19	Mathematical Methods Of Physics II (Undergraduate Course Phys 307)
Fall 15	Plane Analytic Geometry and Calculus (Undergrad. course MA 161 IMPACT)
Spr 15	Physical Mechanics II (Honors' course Phys 411H)
Fall 14, 16, 17, 18, 19, 20 & 21	Advanced Mathematics for Engineers and Physicists I (Grad. course MA 527) as regular class, distance learning and Engineering Professional Education class
Spr 11, F12, Spr18, Spr 22 & F 22	Ordinary Differential Equations (Undergraduate course MA 266)
Spr 10 &11 &12 & 13	Advanced Mathematics for Engineers and Physicists II (Grad. course MA 528) as regular class, distance learning and Engineering Professional Education class
Fall09 &11	Mathematical Methods for Physicists I (Undergraduate course Phys 29000)
Spr 09	Linear Algebra with Applications (Graduate course MA 511)
Fall08	Advanced Mathematics for Engineers and Physicists I (Grad. course MA 527)
Spr 08	Advanced Mathematics for Engineers and Physicists II (Grad. course MA 528)
Fall07	Ordinary Differential Equations (Undergraduate course MA 266)

COURSES TAUGHT AT UCONN

Spr 05, 06 & 07	Physics for Engineers II (Undergraduate course 152Q)
Fall04, 05 & 06	General Physics with Calculus (Undergraduate course 131Q)

COURSES TAUGHT AT OSU

Spr 04	Mechanics and thermodynamics (Undergraduate course 2014)
Fall03	Mechanics II (Undergraduate course 4423)

COURSES TAUGHT AT USC

Spr 02	Mechanics and thermodynamics (Undergraduate course 151)
Fall01	Thermodynamics and statistical mechanics (Graduate course 518)

AT THE UNIVERSITY OF BONN

Apr92–Jul 97	Teaching assistant at the University of Bonn (Germany) Classes in classical mechanics, electrodynamics, quantum mechanics and thermodynamics
Oct 97–Feb 98	Supervisor for teaching assistants in thermodynamics

Students

PHD STUDENTS

- Aug 15 – curr PhD student Jared Bland working on topological states for atomic systems, supervised jointly with Chris Greene (Physics department)
expected graduation: May 2024
- Oct 14 – curr PhD student Kevin Ralphs working on Bethe Ansatz for non-equilibrium systems
- May 09 – Dec 12 PhD student Edwin Antillon, Thesis: “Applications of Finite-size Scaling for Atomic and Non-equilibrium Systems” (joint project with Prof. S. Kais, Dept. of Chemistry, Purdue)
Graduation: December 2012
Research Scientist at UES, Inc / AFRL

GRADUATE STUDENTS

- June 23 – curr Graduate student Efe Gurleyen working on quantum algorithms for statistical mechanics systems (supervised research project)

REU STUDENTS

- May 20 – Aug 20 Undergraduate Student Justin Copenhaver continued the project described below over the summer; he won a Goldwater fellowship in March 2021 based on this work
- Jan 20 – May 20 Undergraduate Students Justin Copenhaver and Raunaq Kumaran, working on a DURIP project about quantum computing for density functional theory
- Jan 19 – May 19 Undergraduate Student and Ascarelli Fellow Kyler Overton, worked on graph Hamiltonians as an REU
- Jan 18 – Apr 18 Undergraduate Student Tibor Döme, visiting from ETH Zürich, wrote term paper “The Periodic Zero-Field Six-Vertex-Model”
- Aug 14 – May 15 Undergraduate Student Brant Coburn, worked on Hecke algebras and quantum spin chains as an REU; presented a poster at the Purdue Undergraduate Poster Symposium; was later PhD student at IUPUI
- Jan 10–May 10 Undergraduate REU student: Nolan Teasdale, worked on Monte-Carlo simulations of reaction-diffusion models

Invited Conference Talks

- Jun 21 Conference in honor of H. Saleur's 60th birthday, CEA Saclay, France
Title: "Theory of Materials Formed as Complements of Triply Periodic CMC Surfaces", virtual
- Dec 20 AIM workshop "Mathematics of topological insulators", virtual
- Jan 20 AMS Joint Mathematics Meeting, Denver, CO,
Title: "Quantum Materials and Symmetries"
- Oct 18 AMS Special session at the Fall sectional meeting,
University of Michigan, Ann Arbor, MI
Title: "New results for the topology of the gryroid wire network"
- July 18 33rd Summer Conference on Topology and its Applications
Western Kentucky University, Bowling Green, KY
Title: "New results for the topology of the gryroid wire network"
- Sep 17 Workshop on Subfactors and Applications,
Vanderbilt University, Nashville, TN
Title: "Bethe Ansatz for an $SU(3)$ Hecke quotient"
- Jun 17 Collaborative Conference on Materials Research
Jeju, South Korea; Title: "Theory of Materials Formed as Complements of Triply Periodic CMC Surfaces"
- Jun 17 XXV International Colloquium on Integrable Systems and Quantum Symmetries, Prague, Czech Republic; Title: "Two-species asymmetric diffusion and coupled KPZ equations"
- Oct 16 AMS Special session at the Fall sectional meeting,
University of St. Thomas, MN; Title: "Topology and Matter"

- Jun 16 Great Lakes Mathematical Physics Meeting, Michigan State University, East Lansing, MA; Title: “Two-species asymmetric exclusion process, integrability and height models”
- Mar 16 Closing Conference for the Program on Higher Structures in Geometry and Physics, Max-Planck Institute for Mathematics, Bonn, Germany
Title: “Re-gauging groupoid, non-commutative 2-cocycles and wire networks”
- Dec 15 Materials Research Society Fall Meeting, Boston, MA
Title: “Theoretical properties of materials formed as wire network graphs from triply periodic CMC surfaces, especially the Gyroid”
- Jul 14 30th International Colloquium on Group Theoretical Methods in Physics, Ghent, Belgium
Title: “Re-gauging, symmetries and degeneracies for Graph Hamiltonians”
- May 14 Workshop “Geometry, Topology, and Physics”, University of Pittsburgh, PA
Title: “Topological charges and the geometry of momentum space”
- Oct 13 11th East Coast Operator Algebras Symposium, Cincinnati, OH
Title: “ C^* geometry of wire network graphs from triply periodic CMC surfaces”
- Jun 12 Geometry of Interfaces and Capillarity, Granada, Spain
Title: “(Non)commutative geometry of wire network graphs from triply periodic CMC surfaces”
- Mar 12 Wabash Extramural Modern Analysis Seminar, Wabash College, IN
Title: “(Non)commutative geometry of wire network graphs from triply periodic surfaces”
- Oct 11 Geometry of Interfaces, Primosten, Croatia
Title: “The geometry of the double gyroid wire network: quantum and classical”
- Aug 11 Quantum Theory and Symmetries (QTS-7), Prague, Czech Republic
Title: “The geometry of the double gyroid wire network: quantum and classical”
- Dec 10 104th Statistical Mechanics Conference, Rutgers University
Title: “Critical exponents in the two-species asymmetric diffusion model”
- Jun 09 XVIII International Colloquium on Integrable Systems and Quantum Symmetries, Prague, Czech Republic
Title: “Two-species asymmetric diffusion on a ring”
- Jun 07 XVIth International Colloquium on Integrable Systems and Quantum Symmetries, Prague, Czech Republic
Title: “Integrable Systems, Symmetries and Clifford algebras”
- Jun 06 26th International Colloquium in Group Theoretical Methods in Physics, CUNY, New York, NY
Title: “Clifford representations in integrable systems”
- Mar 03 APS March meeting 2003 Austin, Texas
Title: “Non-equilibrium effects in Bose-Einstein condensates in an external periodical potential”
- Mar 94 DPG (German equivalent of the APS) conference, Hamburg (Germany)
Title: “Finite-size scaling in reaction-diffusion processes”

Other Presentations at Conferences

- Mar 03 Workshop “Functional renormalization group in quantum many-body problems”,
Max-Planck-Institut für Physik komplexer Systeme, Dresden (Germany)
Poster: “Non-equilibrium effects in the Bose-Hubbard model”
- Jul 01 Summer school “Low dimensional quantum systems. Theory and Experiment”,
ICTP Trieste (Italy)
Poster: “Bethe-Ansatz for the $su(3)$ invariant Toda theory”
- Jun 98 Conference “Dynamics of physics”, Bonn (Germany)
Poster: “The XX-chain with boundaries”
- Sep 96 Workshop “Dynamics of non-equilibrium physics”, ICTP Trieste (Italy)
Poster: “A new critical exponent for the rounding of crystal surfaces”
- Jun 94 NATO-Conference “Scale invariance, interfaces and non-equilibrium dynamics”
Newton Institute, Cambridge (England)
Poster: “Finite-size scaling in reaction-diffusion models”

Seminar Talks

- Dec 22 Geometry Seminar, IU Bloomington
Title: “Properties of quantum graphs as complements of triply periodic CMC surfaces”
- Jan 22 Probability Seminar, Purdue
Title: “Introduction to the Bethe Ansatz”
- Apr 20 Seminar, University of Houston, TX (postponed)
- Nov 17 Colloquium, Loyola University Chicago
Title: “Geometry of the gyroid wire network”
- July 16 Seminar at Max-Planck Institute for Mathematics, Bonn, Germany
Title: “Topology and Matter”
- Apr 15 Probability Seminar, Urbana-Champaign, IL
Title: “Two-species exclusion process, critical exponents and height models”
- May 14 Mathematical Physics Seminar, ETH Zürich
Title: “New results about the (non)-commutative geometry of wire network graphs
from triply periodic CMC surfaces”
- Jan 14 Seminar at Max-Planck Institute for Mathematics, Bonn, Germany
Title: “New results about the (non)-commutative geometry of wire
network graphs from triply periodic CMC surfaces”
- Oct 13 Member Seminar, IAS, Princeton
Title: “(Non)commutative geometry of wire network graphs
from triply periodic CMC surfaces”
- Aug 13 Seminar at Max-Planck Institute for Mathematics, Bonn, Germany
Title: “Bethe-Ansatz for the two species totally asymmetric diffusion model”
- Jul 12 Seminar at DESY, Hamburg, Germany
Title: “(Non)commutative geometry of wire network graphs
from triply periodic CMC surfaces”
- Jun 12 Statistical Physics Seminar at the University of Nancy, France
Title: “Avalanches in the Raise and Peel model with a wall”
- Aug 11 Oberseminar at Max-Planck Institute for Mathematics, Bonn, Germany
Title: “The geometry of the double gyroid wire network: quantum and classical”

- May 11 QGM Seminar at Aarhus University, Denmark
Title: “The (non)-commutative geometry of the gyroid wire network”
- Nov 10 Statistical Mechanics Seminar, Princeton University
Title: “Bethe-Ansatz for the two species totally asymmetric diffusion model”
- July 10 Statistical Physics Seminar at the University of Nancy, France
Title: “Critical exponent of the two-species asymmetric diffusion model”
- Nov 09 Group Seminar Theoretical Chemistry, Purdue
Title: “Conformal Invariance”
- Apr 09 Applied Mathematics Lunch Seminar, Purdue
Title: “KPZ Surface growth, critical exponents and diffusion models”
- Apr 08 Bridge to Research Seminar, Purdue
Title: “Reaction-Diffusion Models, Hecke Algebras and Integrability”
- Feb 08 Geometric Analysis Seminar, Purdue
Title: “Bethe-Ansatz for the asymmetric XXZ quantum spin chain”
- Aug 07 Theoretical Physics Seminar, University of Würzburg, Germany,
Title: “New symmetries in the XX quantum chain with boundary terms”
- Apr 07 Condensed Matter Theory Seminar, Purdue, IN
Talk: “Quantum Spin Chains: Methods, Applications and Results”
- May 06 Particles, Astrophysics, and Nuclei Physics Seminar, UConn
Talk: “New Results for the XX-Quantum Spin Chain with Boundaries”
- Feb 04 Physics Colloquium at Oklahoma State University
Talk: “Bose-Einstein condensates in an external periodical potential-theoretical modeling and non-equilibrium generalization”
- Jun 99 Seminar talk at the Ecole Normale Supérieure, Paris (France)
Title: “L’Ansatz de Bethe pour la chaîne de spin XXZ asymétrique et la relation avec les surfaces de cristaux”
- Oct 94 Seminar talk at the Ecole Normale Supérieure, Paris (France)
Title: “Finite-size scaling dans les processus de réaction et diffusion”

Participation at Workshops, Conferences and Schools

- Dec 19 D-Wave Quantum Computing Training, Hanover, MD
- Mar 06 “Professional Skills Development Workshop for Women Physicists”,
Baltimore, MD, by invitation of the APS
- Oct 01 “Applications of conformal field theory”, IPAM, UCLA, Los Angeles
- Apr 00 NATO/EC-conference “New theoretical approaches to strongly correlated systems”
Newton Institute, Cambridge (England)
- Jun95–Jul 95 Summer school “Processus Stochastiques” Beg-Rohu , Quiberon (France)
- Feb 94 Winter school in theoretical physics “Quantum Groups”, Karpacz (Poland)

Research Stays

- Jun 12 Visitor at the University of Nancy, France
- Jul 12 Visitor in the DESY theory group, Hamburg, Germany
- Jun 10–Jul 10 Visitor at the University of Bonn, Germany
- May08–Jul 08 Visitor at Centre d’Énergie Atomique (CEA), Gif-sur-Yvette, France
visiting Hubert Saleur at the IPhT Laboratory.

Laboratory experience

- Oct 94 Visit at the “Laboratoire des milieux désordonnés et hétérogènes”
at the Université Paris VI (Pierre et Marie Curie, Jussieu), Paris (France)
Studies of sandpile models; Supervisor: Prof. J. Rajchenbach
- Apr 91–Jun91 Internship at the “Centre de Recherche des Très Basses Températures,
Centre National de Recherche Scientifique”, Grenoble (France)
Pressure measurements at low temperatures, Supervisor: Prof. H. Godfrin

Service

CONFERENCE ORGANIZATION

- Mar 22 Co-Organizer of AMS Spring Central Sectional Meeting, Purdue (moved to
virtual meeting), together with R. Kaufmann, J. Shen and B. Ulrich
- Mar 22 Co-Organizer of a special session (together with S. Tsymbaliuk) about
“Integrability, Symmetry and Physics” at the same meeting
- Apr 19 Co-Organizer of the International Symposium of Quantum Science & Technology
(together with a group of 9 faculty members across Purdue, lead: Y. Chen),
proposal won one of the provost’s 150th anniversary 25K conference grants
- Jul 18 Organizer (together with S. Gupta, WKU and A. Saxena, Los Alamos)
of an interdisciplinary conference on “Topology and its Applications”
in Bowling Green, KY
- Apr 17 Organizer (together with R. Kaufmann and L. Prodan, Yeshiva University)
of an AMS Special Session on “Topological Mathematical Physics”
in Bloomington, IN
- Sep 96 Scientific Secretary of the conference
“Advanced Quantum Field Theory” in La Londe les Maures (France)
Edition of the proceedings

SEMINAR ORGANIZATION

- Aug 16 – curr Organizer of the Mathematical Physics Seminar, Purdue
(together with S. Tsymbaliuk)
- Aug 20 – May 21 Math Colloquium Chair

TEACHING INNOVATIONS

F 20	Course Proposal for the Honors College “Quantum Computing”, ran as a 3-credit course in Sp 2022
Spr 20	Course Development of MA 52700 as an EdX distance learning course
F 12 & Sp 18	Course Coordinator for MA 266
Spr 10	Course Development of MA 52800 as on-campus distance learning course
Spr 08, F 11, F 14 & F17 F 19 – curr	Preparation and Grading of parts of the Qualifying Exam in Mathematics for Mechanical engineering PhD students, Purdue responsible for this exam every semester, as chair of the committee

MENTORING AND ADVISING

Aug 21 – curr	Professor of Practice Kaitlyn Hood (Math)
Aug 20 – curr	Assistant Professor Oleksander Tsymbaliuk (Math)
Aug 21 – curr	Undergraduate Student Alexia Rodrigues Emerging Leaders Science Scholars program, Purdue
Aug 22 – curr	Graduate Students Ethan Kessinger and Mansimar Singh
Jan 20 – May 20	Assistant Professor Soo Lee (Physics)
Aug 19 – May 20	Graduate Student Shaver Phagan
Aug 15 – Apr 17	Graduate Students Alex Porter and Vishash Bajaj
Aug 14 – Aug 18	Post-Doc Dan Li

	Advisory Committee Member for:
current	– Amandeep Bakshi (PhD Physics) – Xiaoting Fang (PhD Mechanical Engineering) – Abraham Koshy (PhD Physics) – Forrest Simmons (PhD Physics) – Diqing Yue (PhD Mechanical Engineering)
graduated	– Raja Selvarajan (PhD Physics-graduated Dec 2022) – Rishabh Khare (PhD Physics-graduated Summer 2022) – Dewan Woods (PhD Physics-graduated Summer 2022) – Yifei He (PhD Physics-graduated May 2018) – Changyu Huang (PhD Physics-graduated May 2018) – Sannah Phi Ziana (PhD Physics-graduated May 2013) – Liu Sheng (PhD Mechanical Engineering-graduated Oct 2011)

LEADERSHIP TRAINING

Aug 22 – curr	Faculty Insights Forum, Office of the Provost, Purdue
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COMMITTEE WORK

Department

- Aug 19 – curr Chair of the Advanced Services Committee, Math Dept., Purdue
Apr 22 – May 23 Promotions Subcommittee, Math Dept., Purdue
Aug 21 – May 23 Personnel Committee (Hiring and Advising the Dept. Head), Math Dept., Purdue
Aug 21 – May 22 Connections to Industry Committee, Math Dept., Purdue
Aug 21 – Apr 22 Search Committee for new faculty hire in Condensed
Matter Theory, Physics & Astronomy Dept., Purdue
Aug 19 – May 20 Search Committee for cluster faculty hire in Quantum Information
Theory, Purdue
Dec 19 – May 20 Search Committee for two Professor of Practice positions,
Math Dept., Purdue
Feb 19 – May 20 Search Committee for new faculty hire in Experimental High Energy
Particle Physics, Purdue
Aug 18 – May 19 Personnel Committee (Hiring and Advising the Dept. Head), Math Dept., Purdue
Aug 16 – Mar 17 Search Committee for new faculty hire in Astrophysics, Purdue
Aug 15 – May 23 Calculus Committee, Math Dept., Purdue
Aug 14 – May 19 Advanced Services Committee, Purdue (since Aug 2019 Chair)
Aug 14 – May 15 Excellence in Teaching Award Committee, Math Dept., Purdue
Aug 12 – May 13 Calculus Committee, Math Dept., Purdue

College of Science

- Aug 20 – May 22 College of Science Area Committee, Purdue
Oct 15 - May 16 CoS Strategic Planning group “Reputational Stewardship”
Jun 11 – May 13 College of Science Elections Committee, Purdue

University

- Aug 14 – curr Churchill Scholarship Committee, Purdue
Aug 21 – curr Senate Member in the University Senate
Aug 21 – curr Student Affairs Committee in the University Senate
Apr 19 – May 19 Research Integrity Officer (RIO) Search committee, Purdue

REFEREEING AND REVIEWING

since	21	NSF panel member
since	21	Reviewer for Zentralblatt MATH / zbMATH
since	18	Reviewer for the Simons Foundation
since	17	Reviewer for NSF EPSCoR Research Fellows
since	17	Reviewer for Mathematical Reviews/MathSciNet
Summer	15	external member of the search committee for a position of associate professor of Math at University of Southern Denmark, Odense, Denmark
since	12	Member of the Editorial Board of “Thermodynamics & Catalysis”
since	16	Referee for “Chemical Physics Letters”
since	10	Referee for “Journal of Statistical Physics”
since	97	Referee for “Journal of Physics A”, “Physics Letters A” and “Physical Review E”
July	04	Book review of a new undergraduate textbook by invitation of Prentice Hall

Outreach

Oct 22	Moderator of a panel about “Reading Colors: Reflections from Poetics to Science”, at the annual SLSA meeting (Society for Literature, Science and the Arts) at Purdue
Jul 20	Teacher Development Workshop for Physics teachers, supported by my NSF CAREER grant
Apr 19	Guest speaker in the physics seminar “Careers in Physics” (Phys 235)
Apr 15, 17, 18 & 22	Judge for the Undergraduate Research and Poster Symposium, Purdue
Mar 15 & 18	Judge for the Lafayette Regional Science and Engineering Fair, Purdue
Oct 14	Presentation for the Purdue Math Club
May 14	People behind the Science Interview
Sep 12	Presentation for the “Dean’s Honors Seminar”, College of Science, Purdue
Apr 12	Judge for the Undergraduate Research and Poster Symposium, Purdue
Nov 11	Presentation for the “Association for Women in Mathematics, Purdue Student Chapter”
Nov 11, 12, 14 & 18	Guest speaker in the undergraduate course “Mathematics as a Profession and a Discipline” (MA 10800)
Apr 11	Judge for the Undergraduate Research and Poster Symposium, Purdue
Mar 11	Judge for the Lafayette Regional Science and Engineering Fair, Purdue
Spr 10	in charge of the Women in Physics (WIP) group in the Physics Dept., Purdue
May 10	Presentation of physics experiments to first-graders, Cumberland Elementary School, West Lafayette
Apr 10	Judge for the Undergraduate Research and Poster Symposium, Purdue
Mar 10	Judge for the Lafayette Regional Science and Engineering Fair, Purdue
Feb 10	Guest speaker in the physics undergraduate seminar “Careers in Physics”
Nov 09	Presentation for the WISP (Women in Science Program), Purdue
Mar 09	Judge for the Lafayette Regional Science and Engineering Fair, Purdue
since 07	Participation in Women in Mathematics, WIP (Women in Physics) and WISP (Women in Science Programs) activities, Purdue
Apr 07	Presentation for graduate students in the Math Department, Sigma Seminar, UConn
Apr 06	Presentation in Workshop “Multiply Your Options” for 8th grade girls, organized by UConn School of Engineering

Publication List

Refereed Publications

29. J. Bland, C.H. Greene and B. Wehefritz–Kaufmann, *Observability of a sharp Majorana transition in a few-body model*, PRA 103 (2021) 023310
28. J. Copenhaver, A. Wasserman and B. Wehefritz–Kaufmann, *Using quantum annealers to calculate ground state properties of molecules*, J. Chem. Phys. 154 (2021) 034105
27. R.M. Kaufmann, S. Khlebnikov, and B. Wehefritz–Kaufmann, *Local models and global constraints for degeneracies and band crossings*, J. Geom. and Phys. 158 (2020) 103892-103901
26. S.R. Dahmen, and B. Wehefritz–Kaufmann, *A novel exponent in the Equilibrium Shape of Crystals*, Stat. Mech. (2019) 104005
25. R.M. Kaufmann and B. Wehefritz-Kaufmann, *Theoretical Properties of Materials Formed as Wire Network Graphs from Triply Periodic CMC Surfaces, Especially the Gyroid*, book chapter for the Springer book *The Role of Topology in Materials*, edited by Gupta, S. and Saxena, A., Springer Solid State Sciences 2018, by invitation, 27 pages
24. G.M. Schütz and B. Wehefritz–Kaufmann, *Kardar-Parisi-Zhang modes in d-dimensional directed polymers*, Phys. Rev. E 96 (2017) 032119 (11 pages)
23. R.M. Kaufmann, D. Li and B. Wehefritz–Kaufmann, *Notes on Topological Insulators*, Reviews in Mathematical Physics 28 (2016) 1630003 (57 pages)
22. R.M. Kaufmann, S. Khlebnikov, and B. Wehefritz–Kaufmann, *Singular geometry of the momentum space: From wire networks to quivers and monopoles*, J. Sing. Theory 15 (2016) 53–80 (27 pages)
21. R.M. Kaufmann, S. Khlebnikov, and B. Wehefritz–Kaufmann, *Re-gauging groupoid, symmetries and degeneracies for Graph Hamiltonians and applications to the Gyroid wire network*, Annales Henri Poincaré 17 (2016) 1383–1414 (31 pages)
20. R.M. Kaufmann, S. Khlebnikov, and B. Wehefritz–Kaufmann, *Projective representations from quantum enhanced graph symmetries*, J. Phys.: Conf. Ser. 597 (2015) 012048, 16 pages
19. E. Antillon, B. Wehefritz-Kaufmann and S. Kais, *Avalanches in the Raise and Peel model in the presence of a wall*, J. Phys. A: Math. Theor. 46 (2013) 265001, 15 pages
18. R.M. Kaufmann, S. Khlebnikov, and B. Wehefritz–Kaufmann, *The geometry of the double gyroid wire network: quantum and classical*, Journal of Noncommutative Geometry 6 (2012) 623–664 (41 pages)

17. R.M. Kaufmann, S. Khlebnikov, and B. Wehefritz–Kaufmann, *Singularities, swallow-tails and Dirac points. An analysis for families of Hamiltonians and applications to wire networks, especially the Gyroid*, *Annals of Physics* 327 (2012) 2865–2884 (19 pages)
16. E. Antillon, B. Wehefritz-Kaufmann, and S. Kais, *Finite size scaling for quantum criticality using the finite element method*, *Phys. Rev. E* 85 (2012), 036706, 12 pages
15. R.M. Kaufmann, S. Khlebnikov, and B. Wehefritz–Kaufmann, *The noncommutative geometry of wire networks from triply periodic surfaces*, *J. Phys.: Conf. Ser.* 343 (2012) 012054, 15 pages
14. B. Wehefritz-Kaufmann, *Dynamical critical exponent for two-species totally asymmetric diffusion on a ring*, *SIGMA* 6 (2010), 039, 15 pages
13. B. Wehefritz-Kaufmann, *Clifford algebras, Fermions and Spin Systems*, in: Conference proceedings of the “26th International Colloquium in Group Theoretical Methods in Physics”, Graduate Center of the City University of New York City, June 2006, edited by Joseph L. Birman, Sultan Catto and Bogdan Nicolescu, Canopus Academic Publishing (2009) 325-330 (5 pages)
12. B. Wehefritz-Kaufmann, *New results for the XX-model with boundaries*, *J. Phys. A* 40 (2007) 217-226 (9 pages)
11. B. Wehefritz-Kaufmann, *Clifford representations in integrable systems*, *J. of Math. Phys.* 47 (2006) 123509-123517 (18 pages)
10. H. Saleur and B. Wehefritz-Kaufmann, *Integrable quantum field theories with supergroup symmetries: the $OSP(1/2)$ case*, *Nucl. Phys. B* 663 (2003) 443–466 (23 pages)
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