CITIZENSHIP	United States of America (born and raised) and Israel (as of April 2011)

RESEARCH INTERESTS

Low-dimensional, geometric, combinatorial topology, especially:
    hyperplane arrangements: complex projective line arrangements
    knot theory: knot invariants
    random topology: application of the probabilistic method to knots
Combinatorics; graph theory; matroid theory; oriented matroid theory

EMPLOYMENT

Vassar College, Poughkeepsie, New York USA
    Mathematics & Statistics Department: Visiting Assistant Professor, Aug 2016 to present

Technion (Israel Institute of Technology), Haifa, ISRAEL
    Department of Electrical Engineering: European Commission Senior Researcher
        under Robert Adler,   Oct 2014 to Jul 2016
    Department of Mathematics: Post-Doctoral Research Fellow
        under Michael Polyak,   Oct 2013 to Sep 2014

Bar-Ilan University, Ramat Gan, ISRAEL
    Department of Mathematics and Computer Science: Post-Doctoral Research Fellow
    with the Emmy Noether Institute under Mina Teicher,   Oct 2010 to Sep 2013

EDUCATION

Louisiana State University, Baton Rouge, Louisiana USA
    Ph.D., Mathematics, Advisor: Oliver Dasbach,
        Dissertation: Dimer models for knot polynomials,   Aug 2010
    M.S., Mathematics,   May 2006

Binghamton University, State U. of New York (SUNY), Vestal, New York USA
    B.S., Mathematics, with Honors in Mathematics,   May 2004

AWARDS AND HONORS

Vassar College
    Project accepted for the Undergraduate Research Summer Institute
        to supervise and mentor undergraduate mathematics majors
        Jordan Buhmann '19, Alex May '19, and Shiyu Shu '19 for $9,200,   2018
        Baian Liu '18 for $5,000, who received recognition
            for an Outstanding Poster at the 2018 JMM Poster Session   2017
    Project accepted for Diving Into Research for $3,600,   2018
        to supervise and mentor undergraduate incoming first-year Sarah Goodhill '22,
    Dialogue and Engagement Across Differences grant (President's Office) for $2,000,   2017
        and Faculty Conversation Grant (Dean of Faculty's office) for $600,   2016
            on programming in support of women and people of color in STEM fields
Research Authority at Shamoon College of Engineering, Ashdod, Israel
    Internal research grant written with Meirav Amram (SCE/BIU) for ∼ $24,000,   2011
Ministry of Aliyah and Immigrant Absorption, Israel
    Center for Absorption in Science for ∼ $15,500,   2011
Mathematics Department at Louisiana State University
    VIGRE Doctoral Dissertation Traineeship,   2009 to 2010
    Graduate Assistance in Areas of National Need (GAANN) Fellowship,   2004 to 2009
    David Oxley Memorial Graduate Student Teaching Award,   Fall 2008
    Certificate for Teaching Excellence,   Fall 2006 and Spring 2008
Mathematics Association of America national meeting at Boulder, CO,
    Award received for presentation *New Results in Magic Square Enumeration*   Aug 2003
REU student at Northern Arizona University in Flagstaff under Steve Wilson, Summer 2003

PUBLICATIONS –
* INDICATES AN
UNDERGRAD
COAUTHOR AND
** INDICATES A
GRAD STUDENT
COAUTHOR

1. *The Jones polynomials of 3-bridge knots via Chebyshev knots and billiard table diagrams*, (accepted) Journal of Knot Theory and its Ramifications xx (201x), no. x, (xx pages). arXiv:1409.6614

2. *Crossing numbers of random two-bridge knots*, with Chaim Even-Zohar** and Sunder Ram Krishnan**, Topology and its Applications 247 (2018) 100-114. arXiv:1606.00277

3. *The graded count of quasi-trees is not a knot invariant*, with Cody Armond, Proceedings of the American Math. Society 144 (2016), no. 5, 2285-2290. http://www.ams.org/journals/proc/2016-144-05/S0002-9939-2015-12842-0/

4. *Random knots using Chebyshev billiard table diagrams*, with Sunder Ram Krishnan**, Topology and its Applications 194 (2015) 4-21. arXiv:1505.07681

5. *Combinatorial symmetry of line arrangements and applications*, with Meirav Amram, Hao Sun, Mina Teicher, Fei Ye, and Anna Zarkh**, Topology and its Applications 193 (2015) 226-247. arXiv:1310.0700

6. *Kauffman's clock lattice as a graph of perfect matchings: a formula for its height*, with Mina Teicher, Electronic Journal of Combinatorics 21 (2014), no. 4, #P4.31, (39 pages). http://www.combinatorics.org/ojs/index.php/eljc/article/view/v21i4p31

7. *Links arising from braid monodromy factorizations*, with Meirav Amram and Mina Teicher, Journal of Knot Theory and its Ramifications 23 (2014), no. 2, (32 pages). arXiv:1212.2193

8. *A reduced set of moves on one-vertex ribbon graphs coming from links*, with Susan Abernathy, Cody Armond, Oliver Dasbach, Hannah Mannuel*, Chris Penn, Heather M. Russell, and Neal Stoltzfus, Proceedings of the American Math. Society 142 (2014), no. 3, 737-752. http://www.ams.org/journals/proc/2014-142-03/S0002-9939-2013-11807-1/

9. *A twisted dimer model for knots*, with Oliver Dasbach and Heather M. Russell, Fundamenta Mathematicae 225 (2014), 57-74. arXiv:1010.5228

10. *A determinant formula for the Jones polynomial of pretzel knots*, Journal of Knot Theory and its Ramifications 21 (2012), no. 6, (23 pages). arXiv:1011.3661

11. *The number of "magic" squares, cubes, and hypercubes*, with Matthias Beck, Jessica Cuomo, and Paul Gribelyuk, American Mathematical Monthly 110 (2003), no. 8, 707-717. arXiv:0201013

PREPRINTS –
* INDICATES AN
UNDERGRAD
COAUTHOR AND
** INDICATES A
GRAD STUDENT
COAUTHOR

1. *Moduli spaces of eleven-line arrangements with quadruples*, with Jordan Buhmann*, Alexander May*, and Shiyu Shu* (in preparation)

2. *On transformations of the complex projective plane and applications to line arrangements*, with Jordan Buhmann*, Baian Liu*, Alexander May*, and Shiyu Shu* (in preparation)

3. *Moduli spaces of one-line extensions of* (10_3) *configurations*, with Baian Liu* (in preparation)

4. *The height of a permutation and applications to line arrangements*, with Meirav Amram, Hao Sun, and Mina Teicher (submitted, preprint available)

5. *Moduli spaces of ten-line arrangements with double and triple points*, with Meirav Amram, Mina Teicher, and Fei Ye, (submitted) arXiv:1306.6105

NOTES

1. *A correspondence between complexes and knots*, arXiv:1211.2553

NON-RESEARCH
PUBLICATIONS

A Knot Game with ⌐not KNerds, with Allison Henrich,   Math Horizons Vol. 20, Nov 2012.

Sustaining Your Math Club,   Math Horizons Vol. 16, Sep 2008.

How to Start and Maintain your school's Math Club,   Math Horizons Vol. 14, Sep 2006.

Conversation with the Klein Four,   Math Horizons Vol. 13, Nov 2005.

SHORT-TERM FUNDED TRAVEL	*Technion*, Host: Robert Adler,	(week in) Jan 2017

Cal State U. Fresno Research Experience for Undergraduates,
     Hosts: Oscar Vega (co-PI) and Carmen Caprau, (week in) Jul 2014
Institut de Mathématiques de Jussieu and *Université Pierre & Marie Curie (Paris 6)*,
     Host: Pierre-Vincent Koseleff, (week in) Jun 2012, (week in) Jun 2013

TEACHING EXPERIENCE

Teacher of Record (*=department-wide teaching award received)

Vassar: MATH 364: Advanced Linear Algebra,	Fall 2018
Vassar: MATH 263: Discrete Mathematics,	Spring 2017
Vassar: MATH 221: Linear Algebra,	Fall 2016, Fall 2017
Vassar: MATH 220: Calculus III (Multivariable),	Fall 2016, Spring 2019
Vassar: MATH 126-7: Calculus II,	Springs 2017 and 2018, Fall 2018
Vassar: MATH 121: Calculus I,	Fall 2017
LSU: MATH 1552: Calculus II,	Fall 2008*
LSU: MATH 1550: Calculus I,	Spring 2008*
LSU: MATH 1021: College Algebra,	Falls 2005 and 2006*

Teaching Teachers (Capstone couse for math seniors concentrating in secondary ed)
     LSU: MATH 4019: Design, implementation, and evaluation of course
     LSU: MATH 4019: Teacher, mentor, and evaluator for student TAs

LSU: MATH 1550: Calculus I,	Spring 2008
LSU: MATH 1431: Business Calculus,	Springs 2007 and 2006

Teaching Assistant (responsible for leading discussion sections)

LSU: MATH 1431: Business Calculus,	Springs 2007 and 2006
LSU: MATH 1022: Trigonometry,	Fall 2004
Binghamton: Calculus I,	Fall 2003

Lab tutoring

LSU: College Algebra R2R lab,	Falls 2005 and 2006
Binghamton: Math Dept Calc (I, II, III, Bus) Help Room,	2002 to 2004
Sleepy Hollow HS, Sleepy Hollow, NY: Resource Room, Grades 7-12,	Spring 2002

MENTORING RESEARCH PROJECTS AND SEMINARS – SEE TEACHING STATEMENT

Involvement in leading research programs:

Vassar's Undergraduate Research Summer Institute project with
     Jordan Buhmann '19, Alex May '19, and Shiyu Shu '19,   Sum 2018
     Baian Liu '18, who won Outstanding Poster at 2018 JMM Poster Session,   Sum 2017
Vassar's Diving Into Research project with Sarah Goodhill '22,   Sum 2018
Organized a schedule for the eleven summer research students in math,
     including daily lunch and weekly professor and student presentations,   Sum 2018
Mentored undergraduate research student Kevin Ros '20 at Vassar,   2017-2018
Mentored undergraduate research student Baian Liu '18 at Vassar,   2016-2018
Assisted with the Cal State U. Fresno REU
     and FURST research undergrads of Heather Russell, Washington College,   Jul 2014
Coordinated several projects for Mina Teicher's research group at BIU,   2010-2013
Mentored Master's student Anna Zarkh (supervised by Mina Teicher) at BIU, 2012-2013
LSU VIGRE Topology Krewe,   Spring 2009, Fall 2009, and Spring 2010
Research Experience for Undergraduates (REU) at LSU,   Summers 2007 and 2010
eXtreme-Math conference at LSU Topology Group,   Jun-Jul 2009

Workshops organized (*=designed/originated):
     *Baton Rouge Young Topologists Research Retreat *at LSU*,   Jan 2012
     *G.E.A.U.X. Math at LSU [still running],   Summers 2007, 2008, and 2009

Seminars organized (*=designed/originated):
     Stochastics and Applied Topology Seminar *at Technion*,   Fall 2014 to Spring 2016
     Emmy Noether Institute Seminar / Geometry Seminar *at BIU*,   Fall 2010 to 2013
     *Emmy Noether Institute Graduate Student Seminar *at BIU*,   Spring 2012
     *Working group on the anaglogy between knots and primes *at BIU*,   2010 to 2011
     *LSU Jr. Topology Seminar,   2008 to 2010
     *LSU Joint Grad and Undergrad Student Seminar,   Spring 2005

DEPARTMENTAL COLLOQUIA	*Hofstra University* Seminar,	Nov 2018
	Bard College,	Sep 2017
	California State University, Fresno Colloquium,	Feb 2017
	University of South Florida Colloquium,	Jan 2016
	Vassar College Colloquium,	Sep 2015
	Tel Aviv University Computer Science Colloquium [on computing and knots],	Jun 2015
	University of South Alabama Colloquium,	Oct 2012, Jan 2015
	DePaul University Colloquium,	Apr 2014
	George Mason University Colloquium,	Jan 2014
	Hamilton College Colloquium,	Feb 2011

SEMINAR TALKS	New York Combinatorics Seminar,	Nov 2018
	Binghamton U. Combinatorics Seminar,	Oct 2018
	Binghamton U. Geometry and Topology Seminar,	Oct 2018
	New York Applied Topology Seminar,	Sep 2016
	U. of Fribourg Topology Seminar,	Jun 2016
	BIU Probability Seminar,	May 2016
	Technion (ITT) Probability Seminar,	May 2016
	The Ohio State University Topology Seminar,	Jan 2013, Mar 2016
	University of Georgia Geometry Seminar,	Feb 2016
	University of California, Santa Barbara Discrete Geometry and Comb Seminar,	Jan 2016
	Claremont Colleges Algebra/Number Theory/Combinatorics Seminar,	Jan 2016
	Claremont Colleges Topology Seminar,	Jan 2016
	University of South Florida Topology group,	Jan 2016
	Institut de Mathématiques de Jussieu Séminaire d'Analyse et Géométrie,	Jun 2015
	Technion (IIT) Statistics and Topology Seminar,	Jun 2014, May 2015
	University of Iowa Topology group,	Jul 2014
	Technion (IIT) Geometry/Topology Seminar,	Mar, Nov 2012, Dec 2013
	Hebrew University Jerusalem Combinatorics Seminar,	Mar 2013
	University of California, Santa Barbara Topology Seminar,	Jan 2013
	BIU Geometry Seminar,	Spring 2011 and Fall 2010, 2011, 2012
	U. South Alabama Topology Seminar,	Oct 2012
	LSU-U.Iowa-Rice-U.Miami Virtual Seminar,	Sept, Oct 2007, Jan 2011, Oct 2012
	LSU Smooth Topology Research Seminar,	Oct 2012
	LSU Combinatorics Seminar,	Nov 2007, Oct 2012
	George Washington University Topology Seminar,	Sep 2012
	Brandeis University Topology Seminar,	Sep 2012
	Weizmann Institute Mesoscopic Physics group of the Department of Condensed Matter Physics [on topological quantum computing],	Sep 2012
	Universidad de Zaragoza Geometry and Topology Seminar,	Jun 2012
	Université de Pau Algebra and Geometry group,	Jun 2012
	Institut de Mathématiques de Jussieu Algebraic and Geometric Combinatorics Seminar,	Jun 2012
	Ben Gurion University Algebraic Combinatorics Seminar,	May 2012
	BIU Combinatorics Seminar,	Nov 2010, Apr 2012
	BIU Representation Theory Seminar,	Mar 2012
	LSU Jr Topology Seminar,	Springs 2007, 2009, 2011, and 2012
	Weizmann Institute Probability Seminar,	Mar 2011
	CUNY (City U. of NY) Geometry and Topology Seminar,	Feb 2011

CONFERENCE TALKS	*AMS* Session at the Joint Meetings,	Jan 2010, 2012, 2013, 2017, 2018, 2019
	Summer Combo 2017 and 2018 *at Saint Michael's College, VT*,	Jul 2017, 2018
	AMS Special Session on Knot Theory..., Sectional Meeting *in Charleston, SC*,	Mar 2017
	Knots in Washington XLIII, *at George Washington U.*,	Dec 2016
	AMS Special Session on ...Knot Theory, Sectional Meeting *in Raleigh, NC*,	Nov 2016
	Binghamton University Graduate Conference in Algebra and Topology,	Oct 2016

Advances in Quantum and Low-Dimensional Topology 2016 *at U.Iowa*,   Mar 2016
AMS Special Session on Knots... at the Joint Meetings,   Jan 2015, 2016
AMS Special Session on ...Knot Theory, Sectional Meeting *in Chicago*   Oct 2015
TOPOSYS Final project meeting, *at Jagiellonian University in Kraków, Poland*,   Aug 2015
Glances at Manifolds, *at Jagiellonian University in Kraków, Poland*,   Jul 2015
Dynamics, Topology, and Computations 2015, *in Bedlewo, Poland*,   Jun 2015
Knot Theory and Its Apps to Physics and Quantum Computing, *at UT Dallas*,   Jan 2015
TOPOSYS, the Topological Complex Systems project, *at IST Austria*,   Sep 2014
Winter Braids IV, *at Université de Bourgogne, France*,   Feb 2014
AMS Special Session on Hyperplane Arrangements at the Joint Meetings,   Jan 2014
AMS Special Session on ...Knot Theory, Sectional Meeting *in New Orleans*,   Oct 2012
Baton Rouge Young Topologists Research Retreat,   Jan 2012
11th Haifa Workshop on Interdisciplinary Applications of Graph Theory,   May 2011
IMU (Israel Mathematical Union) winter meeting, *at Tel Aviv University*,   Dec 2010

CONFERENCE/ WORKSHOP PARTICIPATION/ FUNDING

AMS Special Session on Invariants of Knots, Links, and Low-Dimensional Manifolds,
    (co-organized) at the AMS Sectional *at U. Connecticut Hartford*,   Apr 2019
AMS Special Session on Not KNerds: A Community for Knot Theory,
    (co-organized) at the Joint Meetings *in Baltimore*,   Jan 2019
Summer Combo 2018 *at Saint Michael's College, VT*,
    (presented a poster on teaching in addition to presenting research),   Jul 2018
Knots in Washington XLVI, XXXVII, and XXVII, *at G.W.U.*,   Jan 2009, 2014, May 2018
Discrete Math Day at Queens College, *in New York City*,
    (brought my undergraduate research student),   Oct 2017
Women In Mathematics In New England, at *Smith College*,
    (co-chaperoned ten Vassar undergraduates),   Sep 2017
Special Session on Invariants of Knots, Links, and 3-Manifolds,
    (co-organized) at the AMS Sectional *at Hunter College, New York City*,   May 2017
Workshop on Geometric Structures on 3-Manifolds, *at IAS*,   Oct 2015
Coloring Graphs at the Technion: Chi-bddness with Alg, Top and Prob,   Jul 2015
CURVE Representations of 3-manifold groups, *at IMJ in Paris*,   Jun 2015
Workshop on Positional Games and Extremal Combinatorics, *at Tel Aviv U.*,   Mar 2015
Toposys Applications Meeting (Robotics), *at KTH Royal Institute of Technology*,   Nov 2014
Discrete, Computational and Algebraic Topology, *at University of Copenhagen*,   Nov 2014
Geometric Topology in New York, *at Columbia University*,   Aug 2013
Low-dimensional Topology and Geometry in Toulouse, *France*   Jun 2013
Young Geometric Group Theory II, *at Technion (IIT)*,   Feb 2013
Discrete Morse Theory and Commutative Algebra (Summer School),
    at Institut Mittag-Leffler, Royal Swedish Academy of Sciences,   Jul 2012
Contact and Symplectic Topology (CAST) Summer School and Conference,
    at Alfréd Rényi Institute of Mathematics, Budapest,   Jul 2012
Arrangements in Pyrénées, *in Pau, France*,   Jun 2012
TEDucation 2012: A Symposium in Math and Math Ed, *at Ben-Gurion U.*,   Apr-May 2012
Baton Rouge Young Topologists Research Retreat, *at LSU*,   Jan 2012
Swiss Knots 2011, *sponsored by the University of Zurich*,   May 2011
MSRI Homology Theories of Knots and Links,   Spring 2010
First National Forum of Young Topologists, *at Tulane University*,   Nov 2009
eXtreme-Math at LSU's Topology Group, *at LSU*,   Jun-Jul 2009
Interactions Between Hyp Geom, Quant Top and Num Theory, *at Columbia U.*,   Jun 2009
MSRI Low Dimensional Topology Workshop,   Aug 2008
3rd Annual Lousiana Texas Topology Retreat, *at Rice University*,   Feb 2008
Workshop on Knots and Quantum Computing, *at U. of Texas in Dallas*,   Dec 2007
A second time around the Volume Conjecture, *at LSU*,   May 2007
Second Louisiana-Texas-Topology-Retreat, *at LSU*,   Feb 2007
Topology of 4-Manifolds: Ronald Fintushel's 60th, *at Tulane University*,   Nov 2006
Texas Geometry and Topology Conference, *at Rice University*,   Oct 2006
MSRI Recent Developments in Arrangements and Configuration Spaces,   Aug 2006

Cornell Topology Festival, May 2006
Barrett Lectures: Current Developments in Geometric Topology, *at U. Tennessee*, Apr 2006
MAA Seaway Sectional Meetings, Spring 2001, Fall 2001, and Fall 2003
MAA National Meeting ("MathFest"), *in Boulder, Colorado*, Summer 2003

OUTREACH
TALKS

Dialogues around issues central to the movie *Hidden Figures*,
 brought to the Vassar College campus by a committee I organized, Mar 2017
Walworth Barbour Amer. Int'l Sch., Even Yehuda, Israel, AP Stats [on big data], May 2016
U. South Florida Geometric Processing Algorithms [on discrete Morse theory], Jan 2016
Geometry and Topology Today [2 videos on line arrangements], Feb 2015
LSU VIGRE Topology Krewe [on discrete Morse theory], Feb 2015
Cal State U. Fresno Research Experience for Undergraduates [on matroids, arr's], Jul 2014
The Ohio State University Math Club [on knot theory and topology], Jan 2013
BIU Basic Notions (Undergraduate) Seminar [on knot theory], Nov 2010, May 2012
Fractals to first graders in inner city Boston (see Teaching statement), May 2007

COMMUNITY
ENGAGEMENT
AND SERVICE

Math community
Co-created and maintain a Facebook group for knot theorists called ⌐*Not KNerds*,
 aimed at sharing conference announcements, with 314 members, 2008 to present
Created and maintain a Moodle page for Vassar math and stats majors and minors, 2016-2019
Involved with programming for Women in STEM with several groups
 including Vassar's AWM student chapter, 2016-2019
Organized a schedule for the eleven summer research students in math at Vassar,
 including daily lunch and weekly professor and student presentations Sum 2018

Inclusion
Through the $1.6mil Engaged Pluralism Initiative at Vassar:
 serve as a member of working group on
 Community Involvement: Bridging Local and Global Communities, 2017-2019
Involved with various subsets of the Jewish community on and around Vassar,
 including attending religious services with students, 2016-2019
Involved with programming of Vassar's Office of Religious and Spiritual Life,
 including leading meditations for students, 2016-2019
Involved with mentoring students from underrepresented groups at Vassar, 2016-2019
Involved with inclusivity programming among Vassar first year classes, 2017-2019
Involved with programming on Men & Masculinity at Vassar, 2017-2018

Other
Mentor student members of and advocate for the Vassar Bike Repair Shop, 2017-2019
Organized an eclipse-viewing party on Move In Day for the Vassar community,
 new students, and their families, Sep 2017

REFERENCES

Scott Carter, University of South Alabama, carter@southalabama.edu
Robert Adler, Technion (ITT), radler@technion.ac.il
Oliver Dasbach, Louisiana State University, kasten@math.lsu.edu
Natalie Frank, Vassar College, nafrank@vassar.edu (teaching)
John McCleary, Vassar College, mccleary@vassar.edu (teaching)