

JESSICA K. SKLAR  
Curriculum Vitae

Department of Mathematics  
Pacific Lutheran University  
Tacoma, WA

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<http://www.plu.edu/~sklarjk>

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EDUCATION

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Ph.D. in Mathematics, June 2001, University of Oregon, Eugene, OR

Dissertation: *Binomial Rings and Algebras*

Ph.D. Advisor: Frank Anderson

M.S. in Mathematics, June 1997, University of Oregon, Eugene, OR

B.A. in Mathematics and English, June 1995, Swarthmore College, Swarthmore, PA

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ACADEMIC POSITIONS

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DEPARTMENT OF MATHEMATICS, PACIFIC LUTHERAN UNIVERSITY

Professor, September 2018–present

Chair, September 2015–June 2016; September 2017–June 2019

Associate Professor, September 2007–August 2018

Assistant Professor, September 2001–August 2007

DEPARTMENT OF MATHEMATICS, UNIVERSITY OF OREGON

Graduate Teaching Fellow, September 1995–June 2001

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AWARDS AND HONORS

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WIKIPEDIA RECOGNITION

Added to Wikipedia’s list of “women who have made noteworthy contributions to or achievements in mathematics” by Eppstein, D., 14 Nov 2018. [https://en.wikipedia.org/wiki/List\\_of\\_women\\_in\\_mathematics](https://en.wikipedia.org/wiki/List_of_women_in_mathematics)

Wikipedia biographical entry “Jessica Sklar” created by Eppstein, D., 14 Nov 2018. [https://en.wikipedia.org/wiki/Jessica\\_Sklar](https://en.wikipedia.org/wiki/Jessica_Sklar)

AUTHOR OF THE MONTH AT ADA’S TECHNICAL BOOKS, JULY 2012, SEATTLE, WA

Selected by a Seattle technical bookstore as its July 2012 Author of the Month. The bookstore hosts a lecture and book-signing by each such author, and presents a month-long display of the author’s works, as well as 5–10 works recommended by the author.

MATHEMATICAL ASSOCIATION OF AMERICA CARL B. ALLENDOERFER AWARD, 2011

Co-recipient with coauthor Gene Abrams for our article “The graph menagerie: abstract algebra and the Mad Veterinarian” (see PUBLICATIONS). Awarded for articles of expository excellence published in *Mathematics Magazine*. One to two recipients per year.

PACIFIC LUTHERAN UNIVERSITY FACULTY EXCELLENCE IN TEACHING AWARD, 2006

Purpose: To recognize a teacher who embodies the qualities of excellent teaching, as measured by such skills as the ability to communicate knowledge effectively, to inspire in students a love of learning, and the willingness to go “above and beyond” in working with students in and outside of class. One recipient per year.

JOHNSON RESEARCH FELLOWSHIP, Summer 2000

Awarded to an outstanding graduate student in his/her penultimate year.

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GRANTS

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NSF GRANT DMS-0846477, MAA RUMC PROGRAM, 2013.

Co-PI for “Northwest Undergraduate Mathematics Symposium.” \$2990 award.

NSF GRANT DUE-0311745, 2003–2009

Co-PI for ‘Adapting WeBWorK Internet-Based Gateway Exams and Maple PowerTools to Introduce Appropriate Use of Technology in the First Two Semesters of Calculus.’ \$141,602.

## COMPUTER SKILLS

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Proficient HTML, XML, PreTeXt, L<sup>A</sup>T<sub>E</sub>X, Java, C++, GAP.

## TEACHING EXPERIENCE

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### PACIFIC LUTHERAN UNIVERSITY

MATH 107: Mathematical Explorations	MATH 111: College Algebra
MATH 112: Plane Trigonometry	MATH 140: Precalculus
MATH 128: Introduction to Linear Models & Calculus	MATH 151: Introduction to Calculus
MATH 152: Calculus II	MATH 245: Discrete Mathematics
MATH 321: Geometry	MATH 331: Linear Algebra
MATH 381: Seminar in Problem Solving	MATH 433: Abstract Algebra
MATH 480: Advanced Topics in Abstract Algebra	MATH 455: Mathematical Analysis
MATH 480: Introduction to L <sup>A</sup> T <sub>E</sub> X	MATH 491: Independent Study in Topology
MATH 499: Senior Capstone	INTC 234: Imaging the World

### UNIVERSITY OF OREGON

MATH 105: University Mathematics I	MATH 106: University Mathematics II
MATH 111: College Algebra	MATH 112: Elementary Functions
MATH 233: Discrete Mathematics III	MATH 241: Business & Social Science Calculus I
MATH 243: Introduction to Probability & Statistics	MATH 251: Calculus I
MATH 252: Calculus II	MATH 253: Calculus III
MATH 341: Elementary Linear Algebra	

## PUBLICATIONS

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### Books

*First-Semester Abstract Algebra: A Structural Approach*. Published under the GNU Free Documentation License, 2017. Available at <http://community.plu.edu/~sklarjk/fsaa/fsaa.html>. Author.

*Mathematics in Popular Culture: Essays on Appearances in Film, Fiction, Games, Television and Other Media*. Jefferson, NC: McFarland & Co., 2012. Editor, with E. Sklar.

#### Reviews of *Mathematics in Popular Culture*

Kozek, M. *The American Mathematical Monthly*, MAA, **121(3)**, Mar 2014, pp. 274–278.  
 Karaali, G. *AWM Newsletter* **43(6)**, Association for Women in Mathematics, Nov–Dec 2013, p. 25.  
 Ashbacher, C. *MAA Reviews*, MAA, 6 Nov 2012.  
 Johnson, J. *CHOICE Reviews* **50(1)**, Association of College & Research Libraries, Sep 2012, p. 201.  
 Sterling, C. *Communication Booknotes Quarterly* **43(3)**, Taylor & Francis, Jul–Sep 2012, p. 140.

### Articles & Book Chapters

“Bok bok’: exploring the game of Chicken in film,” with Jennifer F. Nordstrom. In: *Handbook of the Mathematics of the Arts and Sciences*. Ed. Bharath Sriraman. Springer International Publishing, Cham.

“Elegance in design’: mathematics and the works of Ted Chiang.” In: *Handbook of the Mathematics of the Arts and Sciences*. Ed. Bharath Sriraman. Springer International Publishing, Cham.

“A confused electrician uses Smith normal form,” with T. Edgar. *Mathematics Magazine* **89(1)** (2016), 3–13. Peer-reviewed, national publication.

“Thinking outside the box: application versus discovery in *Saw* and *Cube*.” In: *Mathematics in Popular Culture: Essays on Appearances in Film, Fiction, Games, Television and Other Media*. Jefferson, NC: McFarland & Co., 2012.

- “The graph menagerie: abstract algebra and the Mad Veterinarian,” with G. Abrams. *Mathematics Magazine* **83(3)** (2010), 168–179. Peer-reviewed, national publication.
- “Symmetric and alternating groups generated by a full cycle and another element,” with D. Heath, I.M. Isaacs, and J. Kiltinen. *The American Mathematical Monthly* **166(5)** (2009), 447–451. Peer-reviewed, international publication.
- “The ideal vacuum: visual metaphors for algebraic concepts.” In: *Proceedings of the International Conference of Bridges: Mathematical Connections in Art, Music, and Science* (2007), 241–246. Peer-reviewed, international publication.
- “Dials and levers and glyphs, oh my! Linear algebra solutions to computer game puzzles.” *Mathematics Magazine* **79(5)** (2006), 360–367. Peer-reviewed, national publication.
- “Binomial rings.” *Communications in Algebra* **32(4)** (2004), 1385–1399. Peer-reviewed, international publication.
- “Binomial algebras.” *Communications in Algebra* **30(4)** (2002), 1961–1978. Peer-reviewed, international publication.
- “If rooks could kill: vertex degrees in random bipartite graphs,” with A. Godbole and B. Lamorte. *Combinatorics, Graph Theory and Algorithms, Vol 2, Proceedings of the Eighth Quadrennial International Conference on Graph Theory, Combinatorics, Algorithms and Applications*, ed. by Y. Alavi, D. R. Lick and A. Schwenk, New Issues Press, Kalamazoo (1999), 445–450. International publication.
- “Improved upper bounds for the reliability of  $d$ -dimensional consecutive  $k$ -out-of- $n$  F: systems,” with A. Godbole and L. Potter. *Naval Research Logistics* **45** (1998), 219–230. Peer-reviewed, national publication.

### Mathematical Art Installation

Member of the Mathemalchemy Team, designing an art installation that will tour and then be permanently on display at Duke University. Project funded via a Simons Foundation grant awarded to Duke University (co-PI’s Ingrid Debauchies, Dominique Ehrmann, and Dorothy Buck).

### Book Reviews

- Review of *The Manga Guide to Linear Algebra*, by Inoue Iroha and Shin Takahashi, *MAA Reviews*, 2012.
- Review of *A Transition to Mathematics with Proofs*, by Michael J Cullinane, *MAA Reviews*, 2012.

### Other

- Edited the OEIS Sequence A059756, 30 Jan 19.
- “PreTeXt for Novices Using Windows.” Published under the GNU Free Documentation License, 2017. Available at <http://mathbook.pugetsound.edu/doc/pnw/html/novices.html>. Tutorial for PreTeXt novices using Windows operating systems.
- “Disciple.” *Journal of Humanistic Mathematics* **7(2)** (July 2017), 418. Poem. Peer-reviewed, national publication.
- Implemented probabilistic simulations in Mathematica and Maple and contributed to the solutions manual for C. L. Grinstead and J. L. Snell’s text *Introduction to Probability* (2nd ed.), American Mathematical Society, Providence, 1997.

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### PRESENTATIONS

#### Invited

- Seattle University Mathematics Colloquium  
*Money! Mystery! Murder! Madness! Metaphor! (and Mathematics)*, March 8, 2018.
- Willamette Valley REU-RET Consortium for Math Research, Linfield College  
*Illuminating Confused Electrician Problems*, July 8, 2014.
- 2012 Meeting of the BABEL Working Group, Northeastern University  
*Cabbages and Kings: Mathematics and the Humanities*, September 22, 2012. (With Elizabeth S. Sklar.) Presented by Amy Kaufman, Middle Tennessee State University. (A medical emergency kept my co-speaker and me from attending the conference.)
- July 2012 Author of the Month Lecture, Ada’s Technical Books, Seattle, WA

- Prime Time: Mathematics and Popular Culture*, July 12, 2012.  
Northwest Undergraduate Mathematics Symposium Keynote Address, Lewis & Clark College  
*Dials and Levers and Glyphs, Oh My!*, March 10, 2012.  
Mathematics Colloquium, Willamette University  
*Defeating the Robot and Unlocking Doors*, November 1, 2007.  
Brown Bag Event, Parametrix, Inc., Seattle, WA  
*Spain, France, Math and Art*, September 25, 2007.  
Math/CS Seminar Series, University of Puget Sound  
*Defeating the Robot and Unlocking Doors*, March 21, 2007.  
AMS Special Session on Associative Rings and their Modules, Boulder, CO  
*Binomial Rings*, October 4, 2003.  
Mathematics Colloquium, Linfield College  
*Quivers and their Path Algebras*, November 29, 2001.  
AMS Special Session on Representation Theory, Santa Barbara, CA  
*Binomial Algebras*, March 11, 2000.

### Contributed

- AMS-MAA Joint Mathematics Meetings, Denver, CO  
*Cinematic Chicken: A Friendly Introduction to Game Theory*, January 15, 2020.  
(With Jennifer Firkins Nordstrom.)  
Pacific Lutheran University Mathematics Seminar  
*The Graph Menagerie: Abstract Algebra and the Mad Veterinarian*, November 19, 2008  
*Switches, Fuses, and Glyphs: Using Mathematics to Solve Computer Game Puzzles*, March 30, 2005  
*Jumbled Paths: The Structure of Binomial Algebras*, November 19, 2003.  
The Bridges Conference: Math. Connections in Art, Music, & Science, University of the Basque Country  
*The Ideal Vacuum: Visual Metaphors for Abstract Algebraic Concepts*, July 26, 2007.  
This talk was on a mathematical art project that was also on display in the conference art exhibit.  
AMS-MAA Joint Mathematics Meetings, New Orleans, LA  
*A Comparison of Online Homework Systems*, January 7, 2007. (With Mei Zhu.)  
Pacific Lutheran University Joint Mathematics and Computer Enthusiasts Colloquium  
*Introduction to L<sup>A</sup>T<sub>E</sub>X*, October 12, 2005.  
AMS-MAA Joint Mathematics Meetings, San Diego, CA  
*Binomial Rings*, January 8, 2002.  
AMS-MAA Joint Mathematics Meetings, New Orleans, LA  
*Binomial Algebras and Rings*, January 13, 2001.  
University of Oregon Ring Theory Seminar,  
*Binomial Rings*, October 24, 2000  
*Automorphisms of Binomial Algebras*, February 22, 2000  
*Binomial Algebras*, November 9, 1999  
*D-Algebras in Disguise*, March 2, 1999  
*Through the Looking Glass: Cosemisimplicity*, May 19, 1998  
*Lifting Idempotents*, March 3, 1998.

### PANEL PARTICIPATION

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- PLU Physics Club, Pacific Lutheran University  
*Women in STEM*, April 25, 2018  
Seattle Expanding Your Horizons Conference, Seattle University  
*Supporting Girls in STEM Inside and Outside the Classroom*, March 12, 2016  
Westercon (Regional Science Fiction and Fantasy Convention), Seattle, WA  
*Mathematics in Science Fiction and Fantasy* (organizer, moderator), July 6, 2012  
Norwescon (Northwest Science Fiction and Fantasy Convention), Seattle, WA  
*Mathematics in Popular Culture* (organizer), April 6, 2012  
AMS-MAA Joint Mathematics Meetings (organized by Project NExT), Boston, MA  
*Writing, Refereeing, and Publishing: Contributing to the Mathematical Conversation*, January 5, 2011

Faculty Workshop, Pacific Lutheran University

*Capstone as Assessment for the Major*, March 12, 2008

Enhancing Diversity in Graduate Education Conference, Bryn Mawr College

*Women in Mathematics*, June 16, 2000

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#### CAPSTONES ADVISED

*Polynomial Rings and Connections with Common Core Math Standards*, Andrew Curran, 2020.

*Group Actions: Burnside's Counting Theorem*, Corey Ng, 2020.

*Fermat's Little Theorem and Euler's Theorem*, Isiah Behner, 2018.

*Counting Using Group Actions*, Taylor Gahr, 2018.

*Complex Numbers and Their Representations*, Amelia Pernell, 2018.

*Error Detection and Correction*, Alan Perry, 2015.

*The Rubik's Cube: A Hands-On Approach to Group Theory*, Greg Bishop, 2014.

*Juggling Mathematics*, Joshua McBeath, 2014.

*A Mathematical Analysis of  $(m, n, k)$  Games*, Matthew Christopher, 2012.

*Coins in  $p$ Land*, Nathan Gartner, 2012.

*Group Actions and Burnside's Theorem*, Nicole Griesmeyer, 2009.

*Path Homotopies and the Fundamental Group*, Sean McQueen, 2008.

*An Introduction to Point-set Topology and the Fundamental Group*, Morgan Keys, 2007.

*Emmy Noether and Noetherian Rings*, Whitney-Rose Levis, 2007.

*Penrose Tilings*, Jennifer Stoops, 2007.

*Categories, Functors, and Natural Transformations, Oh My! An Introduction to Category Theory*, Eric Finseth, 2005.

*From Checkboards to Symmetry Groups: Tilings and Abstract Algebra*, Elizabeth Jacobson, 2005.

*The Building Blocks of Math: Prime Numbers and the Riemann Hypothesis*, Kevin Roberts, 2004.

*Galois' Gem*, Bryce Bockman, 2003.

*Error Detecting and Correcting Codes*, James Sowell, 2003.

*Wonders of Rubik's Cube*, Ted Buzzelli, 2002.

*Permutation Group Algorithms*, Ruth Vanderpool, 2002.

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#### PACIFIC LUTHERAN UNIVERSITY SERVICE

##### FACULTY AND UNIVERSITY STANDING COMMITTEES

Governance Committee secretary, 2011–2012

Campus Life Committee

Co-chair, 2006–2007

Member, 2004, 2005–2008

University Review Board secretary, 2007–2008

##### OTHER COMMITTEES

School of Business Faculty Search Committee member, 2018–2020

Interdisciplinary Statistics Committee

Chair, 2018–2019

Member, 2017–2019

Psychology Department Faculty Search Committee member, 2014–2015

Common Reading Book Selection Committee member, 2014–2015

Women's and Gender Studies Committee, library liaison, 2002–2008

Academic Festival Planning Committee member, 2005-2007, 2008–2009  
 International Honors Program [International Core] Committee member, 2006–2008  
 Regents' Scholarship Selection Committee member, 2004–2007  
 Faculty Excellence Awards Selection Committee member, 2006, 2008  
 English Department Faculty Search Committee member, 2004, 2006

#### ACADEMIC ADVISING

Major Student Advisor, 2004–present  
 Non-major Student Advisor, 2003–2009, 2011–2016, 2017–present

#### DEPARTMENTAL SERVICE

Departmental Committees  
 Curriculum Review Committee  
 Chair, 2011–2012, 2014–2015, 2020–present  
 Member, 2002–2005, 2007–2016, 2019–present  
 Nicola Justice's Third-Year Review Committee member, 2019-2020  
 Linear Algebra Review Committee member, 2011–2014  
 Calculus Book Committee  
 Chair, 2011–2012  
 Member, 2003–2004  
 Tom Edgar's Third-Year Review Committee chair, 2011–2012  
 Mathematics Faculty Search Committee member, 2001–2002, 2008–2009, 2014–2015  
 Liaison to Computer Science Department, 2004–2009, 2012–2016  
 Library liaison, 2002–2003, 2004–2009  
 Webmistress, 2002–2003, 2004–2009  
 Mathematics Colloquium co-coordinator, 2007–2009  
 Putnam Examination coach, 2003, 2006, 2008  
 Liaison to the Mathematical Association of America, 2001–2008  
 Mathematics Club Faculty Advisor, 2003–2007

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#### PROFESSIONAL SERVICE

##### EDITORIAL BOARD MEMBER

*Math Horizons* (mathematical journal), Mathematical Association of America, 2020–2024

##### REFEREE

*Handbook of the Mathematics of the Arts and Sciences*, 2019 (reference book)  
*Mathematics Magazine*, Mathematical Association of America, 2010–2019 (mathematics journal)  
*Caribbean Curriculum*, University of the West Indies, 2016 (education journal)  
*Configurations*, Johns Hopkins University Press, 2015 (interdisciplinary journal)  
*Mosaic*, University of Manitoba, 2015 (literary journal)  
*The American Mathematical Monthly*, Mathematical Association of America, 2011–2012 (mathematics journal)  
*Communications in Algebra*, Taylor & Francis, 2001 (mathematics journal)

##### BOOK REVIEWER

Houghton Mifflin, 2005  
 John Wiley & Sons, Inc., 2003

##### ACTIVITY LEADER

Julia Robinson Mathematics Festival for 4th–12th graders, Shoreline, WA, March 18, 2012.

##### JUDGE

Mathematical Association of America MathFest Student Paper Presentations, 2011  
 AMS-MAA Joint Mathematics Meetings Undergraduate Poster Session, 2007

##### CONTRACTOR FOR ACCUMEDIA PUBLISHING SERVICES, 2005

Coded online calculus test bank problems, and performed accuracy reviews of test bank problems and presentation slides associated with college algebra, algebra and trigonometry, and calculus texts

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#### CONFERENCES, WORKSHOPS & MINICOURSES ATTENDED

AMS-MAA Joint Mathematics Meetings, Denver, CO, January 15–19, 2020  
 PNW MAA Annual Meeting, University of Portland, Portland, OR, April 13, 2018  
 MAA MathFest, Denver, CO, August 1–5, 2018

Participated in the MAA minicourse *Mathematical Card Magic*, August 2 & 4  
 PNW MAA Annual Meeting, Seattle University, Seattle, WA, April 21, 2018  
*Math for Jazz Music* (workshop), Jazz Night School, Seattle, WA, November 18, 2017  
 Council of Independent Colleges Workshop for Department & Division Chairs, Phoenix, AZ, June 6–8, 2017  
 Combinatorial Potlatch, Seattle University, November 19, 2016  
 AMS-MAA Joint Mathematics Meetings, Seattle, WA, January 6–9, 2016

Participated in the MAA minicourse *Humanistic Mathematics*, January 6 & 8  
 Participated in the AMS Department Chairs Workshop, January 5  
 Academic Advising workshop *The Role of the Chair in Academic Advising*, Pacific Lutheran U., August 18, 2015  
 PNW MAA Annual Meeting & NUMS Conference, University of Washington Tacoma, Tacoma, WA, April 10–11, 2015  
 AMS-MAA Joint Mathematics Meetings, Boston, MA, January 3–7, 2012  
 MAA MathFest, Lexington, KY, August 4–6, 2011  
 AMS-MAA Joint Mathematics Meetings, Washington, DC, January 4–9, 2009  
 National Popular Culture Assoc./American Culture Assoc. Conference, San Francisco, CA, March 19–23, 2008  
 The Bridges Conference, University of the Basque Country, July 24–27, 2007  
 AMS-MAA Joint Mathematics Meetings, New Orleans, LA, January 5–8, 2007  
 The Bridges Conference, University College London, August 4–8, 2006  
 PNW Section of the MAA Annual Meeting, University of Puget Sound, April 1–2, 2005  
 International Conference on Technology in Collegiate Mathematics, New Orleans, LA, October 28–31, 2004  
 AMS Special Session on Associative Rings and their Modules, University of Colorado Boulder, October 3–4, 2003  
 MAA online workshop *Abstract Algebra with GAP*, hosted by the Saint Louis University, July 14–18, 2003  
 Combinatorial Potlatch, University of Puget Sound, February 16, 2002  
 AMS-MAA Joint Mathematics Meetings, San Diego, CA, January 6–9, 2002  
 AMS-MAA Joint Mathematics Meetings, New Orleans, LA, January 10–13, 2001  
 Enhancing Diversity in Graduate Education Conference, Bryn Mawr College, June 16–17, 2000  
 AMS Special Session on Representation Theory, University of California Santa Barbara, March 11–12, 2000  
 AMS-MAA Joint Mathematics Meetings, Washington, DC, January 19–22, 2000

#### COMMUNITY SERVICE

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HOSPICE VOLUNTEER, Providence Hospice of Seattle, 2019–present  
 PEER NAVIGATOR, Facing Our Risk of Cancer Empowered, 2016–present  
 ONLINE GROUP OWNER AND ADMINISTRATOR, Giving Community of Southeast Seattle, 2015–present  
 GUEST SPEAKER, PLU's Introductory Microbiology (BIOL 201) class, Fall 2017  
 PANEL MEMBER, Pacific Lutheran University Women's Center "Bold and Beautiful" Event, 2006