

Selected Publications

Lynn Arthur Steen, St. Olaf College

Books and Reports

- Supporting Assessment in Undergraduate Mathematics*, Mathematical Assoc. of America, 2005.
- Math and Bio 2010: Linking Undergraduate Disciplines*, Math. Assoc. of America, 2005.
- Achieving Quantitative Literacy: An Urgent Challenge for Higher Education*, Math. Assoc. of America, 2004.
- Quantitative Literacy: Why Numeracy Matters for Schools and Colleges*, (Co-editor: Bernard Madison), Princeton, NJ: National Council on Education and the Disciplines, 2003.
- Mathematics and Democracy: The Case for Quantitative Literacy*, National Council on Education and the Disciplines, 2001.
- Why Numbers Count: Quantitative Literacy for Tomorrow's America*, The College Board, 1997.
- Library Recommendations for Undergraduate Mathematics*, Math. Assoc. of America, 1992.
- Moving Beyond Myths: Revitalizing Undergraduate Mathematics*, Nat'l Acad. Pr., 1991.
- On the Shoulders of Giants: New Approaches to Numeracy*, National Academy Press, 1990.
- Everybody Counts: Report to the Nation on the Future of Mathematics Education*, National Acad. Pr., 1989.
- Calculus for a New Century: A Pump, Not a Filter*, Math. Assoc. of America, 1988.
- For All Practical Purposes: Intro. to Contemporary Mathematics*, W.H. Freeman, 1988.
- Mathematics Tomorrow*, Springer-Verlag, 1981.
- Mathematics Today: Twelve Informal Essays*, Springer-Verlag, 1978; Vintage Pr., 1980.
- Counterexamples in Topology*, (with J. Arthur Seebach, Jr.), Holt, Rinehart and Winston, 1970; *Second Edition*, Springer-Verlag, 1978; *Reprint*, Dover, 1995.

Articles and Papers

. . . on Mathematics

- "Mathematics and Biology: New Challenges for Both Disciplines." *Chronicle Review* March 4, 2005, p. B12.
- "The 'Gift' of Mathematics in the Era of Biology." *In Math and Bio 2010: Linking Undergraduate Disciplines*. Mathematical Association of America, 2005, pp. 13-25.
- "Analysis 2000: Challenges and Opportunities." *In One Hundred Years of L'Enseignement Mathématique: Moments of Mathematics Education in the Twentieth Century*. Genève: L'Enseignement Mathématique, 2003, pp. 191-211.
- "Pattern," in *On the Shoulders of Giants: New Approaches to Numeracy*, National Academy Press, 1990, pp. 1-10.
- "Election Mathematics: Do All Those Numbers Mean What They Say?" in *Readings in Public Sector Economics* by Samuel Baker and Catherine Elliott (Eds.), D. C. Heath, 1989, pp. 308-315.
- "Celebrating Mathematics," *Amer. Math. Monthly* 95 (May 1988) 414-427.
- "The Science of Patterns," *Science* 240 (29 April 1988) 611-616.
- "Mathematics," Annual Reviews. *Britannica Book of the Year*, 1976-86.
- "The Arithmetic of Apportionment," *Science News* 121 (8 May 1982) 317-318.
- "Nonstandard Analysis," *Encyclopaedia Britannica Micropaedia, Second Edition*, 1982.
- "From Counting Votes to Making Votes Count: The Mathematics of Elections," *Scientific American* 243 (Oct. 1980) 16-26.
- "Unsolved Problems in Geometry," *Science News* (23 July 1979) 412-413; *The Mathematics Teacher* 73 (1980) 366-369.
- "Catastrophe Theory: The First Decade," *Science News* 111 (2 April 1977) 218-219, 223.
- "Fractals: A World of Nonintegral Dimensions," *Science News* 112 (20 August 1977) pp. 122-123.
- "Solution of the Four Color Problem," *Mathematics Magazine* 49 (1976) 219-222.
- "Highlights in the History of Spectral Theory," *Amer. Math. Monthly* 80 (1973) 359-381.
- "Conjectures and Counterexamples in Metrization Theory," *Amer. Math. Monthly* 79 (1972) 113-132.
- "New Models of the Real-Number Line," *Scientific American* 224 (1971) 92-99.
- "What is a Sheaf?" (with J. Arthur Seebach, Jr., and Linda Seebach), *Amer. Math. Monthly* 77 (1970) 681-703.

. . . on Quantitative Literacy

- "Confronting Challenges, Overcoming Obstacles: A Conversation about Quantitative Literacy" (with Bernard L. Madison). *Numeracy: Advancing Education in Quantitative Literacy*, 2:1 (January 2009).
- "Everything I Needed to Know about Averages ... I Learned in College." *Peer Review* 6:4(Summer 2004)4-8.
- "Mathematics and Numeracy: Two Literacies, One Language." *The Mathematics Educator* (Journal of the Singapore Association of Mathematics Educators), 6:1 (2001) 10-16.
- "The Case for Quantitative Literacy." *Mathematics and Democracy: The Case for Quantitative Literacy*. National Council on Education and the Disciplines, 2001, pp. 1-22.
- "Quantitative Literacy: A World Awash in Numbers" *Education Week*, Vol. 21 (September 5, 2001) p.58. URL: www.edweek.org/ew/articles/2001/09/05/01steen.h21.htm
- "Reading, Writing, and Numeracy," *Liberal Education*, 86:2 (Spring 2000) pp. 26-37.
- "Numeracy: The New Literacy for a Data-Drenched Society," *Educational Leadership*, 57:2 (Oct. 1999) 8-13.
- "The New Literacy," *Why Numbers Count*, Lynn Arthur Steen, Editor. The College Board, 1997, pp. xv-xxviii.
- "Numeracy," *Daedalus*, 119:2 (Spring 1990) 211-231.

. . . on School Mathematics

- “Reflections on Mathematics and Democracy.” *Focus*, (Oct.-Nov., 2012); URL: maa.org/pubs/FOCUSoct-nov12.Steen.html.
- “Moving Beyond Standards & Tests.” Invited Testimony, Carnegie-IAS Commission on Mathematics and Science Education, October 23, 2007.
- “Facing Facts: Achieving Balance in High School Mathematics.” *Mathematics Teacher* (100th Anniversary Issue, 100 (January 2007) pp. 86-95.
- “Every Teacher is a Teacher of Mathematics.” *Principal Leadership*, January 2007, pp. 16-20.
- “Communication, Connection, Contexts: How Mathematics Counts.” *Educational Leadership*, 65:3 (November 2007) 8-14.
- “How Mathematicians Can Contribute to K-12 Education.” *Notices of the American Math. Soc.*, 51:8 (Sept 2004) 869.
- “Back to the Future in Mathematics Education.” *Education Week*, (April 7, 2004) p. 34.
- “Math Education: Still at Risk.” *Issues in Science and Technology*. 19:4 (Summer 2003) 79-81.
- “Data, Shapes, Symbols: Achieving Balance in School Mathematics.” In *Quantitative Literacy: Why Numeracy Matters for Schools and Colleges*. Princeton, NJ: National Council on Education and the Disciplines, 2003.
- “Achieving Mathematical Proficiency for All: Moving Beyond the Math Wars.” *The College Board Review*, No. 196 (Spring 2002) 4-11.
- “Twenty Questions about Mathematical Reasoning,” in *Developing Mathematical Reasoning in Grades K-12*, (1999 Yearbook). Lee Stiff, Editor. Reston, Va: National Council of Teachers of Mathematics, 1999, pp. 270-285.
- “Beyond Eighth Grade: Functional Mathematics for Life and Work,” (with Susan L. Forman). Berkeley, CA: National Center for Research in Vocational Education, 1999.
- “Mathematics for Work and Life,” (with Susan L. Forman), in *Seventy-Five Years of Progress: Prospects for School Mathematics*, Iris Carl, Editor. Reston, Va: National Council of Teachers of Mathematics, 1995, pp. 219-241.
- “Algebra for All: Dumbing Down or Summing Up?” in *The Algebra Initiative Colloquium*, Carol Lacampagne, et al., Editors. U.S. Department of Education, 1995, pp. 121-140.
- “Will Everybody Ever Count?” in *Developments of School Mathematics Education Around the World, Volume 3*. National Council of Teachers of Mathematics, 1992.
- “Why Johnny Can’t Compute,” *Washington Post*, Op-Ed Page Sunday, March 5, 1989, p. C7.
- “Who Still Does Math with Paper and Pencil?” *Chronicle of Higher Education*, Oct. 14, 1987, p. A48.
- “Smokestack Classrooms,” *Op-Ed Series*, National Research Council, National Academy of Sciences, February 1987. (Appeared in over 50 newspapers across the United States, and in *Focus*, March 1987, p. 1, 4.)
- “ $1 + 1 = 0$: New Math for a New Age,” (editorial) *Science*, 225 (7 Sep. 1984) 981.

. . . on Undergraduate Mathematics

- “Challenges & Transitions: Undergraduate Mathematics, 1990-2010.” *PKAL Twentieth Anniversary Essay Collection*, February 28, 2011; URL: http://www.aacu.org/pkal_documents/MAA.pdf.
- “On Being a Mathematical Citizen: The Natural NEXt Step.” *Focus*, 27:7 (October, 2007) 11-12. URL: <http://www.maa.org/news/110507mathcitizen.html>.
- “Twenty Questions About Precalculus.” *A Fresh Start for Collegiate Mathematics: Rethinking the Courses Below Calculus*. Nancy Baxter Hastings, editor. Washington, DC: Mathematical Association of America, 2006, pp. 8-12.
- “Asking the Right Questions.” *Supporting Assessment in Undergraduate Mathematics*, Mathematical Association of America, 2006, pp. 11-18.
- “Mathematics Education in Universities.” *Proceedings of the Ninth International Congress on Mathematical Education*, Hiroshi Fujita, et al., editors. Kluwer Academic Publishers, 2004, pp. 243-247.
- “Making Connections . . . To, From, and Within the Mathematical Community” (with David Bressoud). *Project Kaleidoscope Website*, May 2004. URL: www.pkal.org/documents/ToFromAndWithinTheMathematicalCommunity.cfm. Revised version printed in *Focus*, 24:6 (Aug./Sep. 2004) 22-24.
- “The Four A’s: Accountability, Accreditation, Assessment, & Articulation” (with Peter Ewell). *Focus* May 2003, pp. 6-8.
- “Refractions, Reflections, Recombinations: Democratising Maths for Mass Education.” *New Zealand Journal of Mathematics*, 32 (Nov. 2003) 195-205.
- “Growing Math Majors at St. Olaf College.” In *Adding it Up: Mathematics Education in the U.S. Does Not Compute*. Washington, DC: The Education Trust. *Thinking K-16*. 6:1 (Summer 2002) pp. 12-13.
- “Revolution by Stealth: Redefining University Mathematics.” In *Teaching and Learning of Mathematics at the University Level*, Proceedings of the ICMI Study Conference, Singapore, 1998. Derek Holton, Editor. Dordrecht: Kluwer Academic Publishers, 2001.
- “Core Curriculum in Context: History, Goals, Models, Challenges,” in *Confronting the Core Curriculum: Considering Change in the Undergraduate Mathematics Major*, John A. Dossey, Editor. Washington, DC: Mathematical Association of America, 1998, pp. 3-13.
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- “A ‘Minds-On’ World,” *Focus*, March-April 1985, p. 4.
- “Crisis and Renewal in College Mathematics,” *The Chronicle of Higher Education*, July 24, 1985, p. 56.

. . . Policy, Culture, Reviews

- "Distilling Truth from Emotion," a review of *Loving and Hating Mathematics* by Reuben Hersh and Vera John-Steiner. *Science*, 333 (8 July 2011) 160.
- Review of *Damned Lies and Statistics: Untangling Numbers from the Media, Politicians, and Activists* by Joel Best. *Notices of the American Mathematical Society*, 50:2 (February 2003) 228-231.
- "Is Progress an Illusion?" *Focus*, 23:8 (November, 2003) 10-12.
- "Foreword" to *Fractals, Graphics, and Mathematics* by Benoit B. Mandelbrot and Michael L. Frame. Washington, DC: Mathematical Association of America, 2002, pp. ix-x.
- "A Mind for Math," a review of *The Math Gene: How Mathematical Thinking Evolved and Why Numbers are Like Gossip* by Keith Devlin, *American Scientist*, 88 (Nov.-Dec. 2000) 555-556.
- "A Joyful Passion for Proofs: The Pied Piper of Mathematics," a review of *The Man Who Loved Only Numbers: The Story of Paul Erdős and the Search for Mathematical Truth* by Paul Hoffman, Hyperion Press, 1998. *American Journal of Psychology*, 113:1 (Fall 2000) 478-483.
- Review of *A Mathematical Mystery Tour: Discovering the Truth and Beauty of the Cosmos* by A. K. Dewdney, *Notices of the American Mathematical Society*, 47:2 (February 2000) 221-224.
- "Theories that Gyre and Gimble in the Wabe," a review of *Mathematics Education as a Research Domain: A Search for Identity* by Anna Sierpiska and Jeremy Kilpatrick (Editors). *Journal for Research in Mathematics Education*, March 1999, pp. 235-241.
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- "Twenty Questions for Computer Reformers," *Proceedings, Conference on Technology in Collegiate Mathematics: Teaching and Learning with Technology*, Frank Demana, Bert Waits, & John Harvey, Eds., Addison-Wesley, 1991, pp. 16-19.
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