

CURRICULUM VITA

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PERSONAL DATA:

Born 8/15/46 in Washington, DC; age 66
Married 10/9/82 to Frances R Stier
Two sons, ages 26 and 23

EDUCATION:

Graduate School: Mathematics Department, Princeton, 1967-72; M.A. June 1969, on leave 1969-71, Ph.D. June 1972. Thesis in Combinatorics, title "Matroid Basis Graphs", adviser A.W. Tucker. Advanced topics for Generals Exam (May 1969) Functional Analysis and Algebraic Topology.

College: Swarthmore 1963-67, B.A. June 1967. Major in Mathematics, minors in Philosophy and Linguistics. Primary mathematics interests Logic and Foundations, General Topology. Wrote an optional senior thesis "Confidence Intervals and Fiducial Limits" in Mathematical Statistics, a topic which arose through some statistics tutoring. Graduated with Highest Honors and Phi Beta Kappa.

Pre-College: Public schools in Montgomery County, Maryland. Graduated from Northwood High School, Silver Spring MD in June 1963.

WORK EXPERIENCE

1979-present: Swarthmore College, Dept of Mathematics & Statistics (Associate Professor 1979-87, granted tenure 1983, Professor 87-); Acting Chair 1992-93, Chair 04-11

Teaching: intro to math thinking, statistics (pre- and post-calculus), calculus (regular, gentle and seminar versions), postcalculus (Math 6D), multivariate calculus (gentle, regular and honors), linear algebra (regular, honors, honors FYS, honors FYS linked to Physics), discrete mathematics, combinatorics, algorithms, mathematical modeling, linear programming, game theory, foundations of real analysis (proof course for prospective majors), real analysis I and II, senior conference. Reading courses overseen: Functional Analysis (Spring 2010); Shortest Path Algorithms (mid 1990s). Volunteer for first wave of Blackboard users (Fall 2001); developed extensive Blackboard sites for all courses taught since then, now being ported to Moodle.

Guiding Student Summer Research and Employment: Senior faculty and writing adviser supervising numerous students each summer since 2009 for Gene Klotz's Visual Math Project, funded by two NSF grants and internal Swarthmore student summer stipends; supervised research on the game FlipSide, summer 1996 (with Stephanie Dyrkacz and Daniel Eisenbud); on interactive software for discrete

mathematics, summer 95 (with Tom Fennimore); on the discrete mathematics of DNA, summer 93 (with David Auer). Secured summer student employment through the publisher of my discrete math text: Laurel Evans (summer 02 — solution manual), Kam Woods (01 — converting figures to electronic form), Brian Taylor and Hal Pomeranz (circa 91 — solution manual).

Scholarship and Research: discrete mathematics (graph theory, partially ordered sets, matroids, optimization), algorithmics, applied mathematics (economics, molecular biology), mathematical writing. Publications of both research and exposition, including a text and a problem book.

Professional Service: national and local efforts to update the curriculum and provide new hardcopy and online teaching materials (discrete math, calculus and precollege, including infusing some linear algebra into high school algebra and developing a high school linear algebra course). Ran mathematics competitions nationally (MAA middle and high school exams) and locally (coaching Putnam).

Chairing: in addition to routine duties, led the department in working jointly with Biology for a first and second hire of a biomathematics postdoctoral teaching fellow, led in mentoring and integrating that first hire into the dept. Led two intense efforts concerning Diversity Fellows, first to keep and then, when that failed, bring back Ralph Gomez to Swarthmore, and second to get Nsoki Mavinga to accept Swarthmore over tenure track offers. Led the development of a new brochure, led the department through a revision of its program (04-06); improved flow of information from and to students about summer jobs, jobs, graduate school and alumni professional activities; worked out new electronic preregistration with Registrar to maintain the extra information we need; arranged the first ever faculty course exchange with Bryn Mawr College to supplement both our offerings (2010-11).

College committees: IRB (12-); Math/Stat “ambassador” to Campus Master Plan project (12-13); First IP case review (06), ensuing changes to the IP policy (08), chair new IP Policy Review Committee (10-11); Fellowship and Prizes (01-02); Various committees through Assoc Provostship: Intellectual Property Task Force (chair), Computer Services Committee (chair), Budget Committee, Administrative Advisory Committee, DuPont Reconstruction Committee, all 00-03; Electronic Privacy Committee (chair) 01-02; Writing Program Renewal Committee (99-00); Linguistics Committee (94-95 and 00-01); Council on Educational Policy (97-99); College Planning Committee (96-97); Admissions Committee (Chairman 86-87, 88-89, 93-95, member many other years through 05); Admissions Planning Group for the College Planning Committee (97-98).

Phi Beta Kappa, Swarthmore Chapter: Executive Board (early 80s and 93-03), Vice President (96-99), Acting President (Spring 98), President (99-03); reader at the initiation (06, 07); return for one year as selection chair (having done this many times), Spring 10.

MathPath, an international program for mathematically highly gifted middle school kids. Instructor, July 2003, July 2004; Academic Director 2006-, Board Chairman 07-. Started just giving lectures on mathematics and writing mathematics, but grew to be general manager, with primary responsibility for: publicity and recruiting, writing admissions test, admitting students, deciding financial aid, communicating with families, hiring faculty, choosing site locations, setting curriculum, scheduling courses, applying for grants, creating publicity, helping manage finances.

ECLA (European College of Liberal Arts, Berlin, now ECLA of Bard), Fall 2007 and Winter 2012. Taught a seminar course in mathematics as a liberal art (twice), and participated fully in the life of the school, attending main lecture series and seminars, helping run an optional seminar on Euclid, participating in a German course (07) and a film course, eating most meals with students and faculty in the dining hall, and going on school trips. Helped students make followup applications to Swarthmore and other North American institutions (07).

AUCA (American University of Central Asia, Bishkek, Kyrgyzstan). 2-week visitor in November 2011, writing a report about the department to the president and giving guest lectures on discrete math and math as a liberal art.

2000-03 (June to June): Associate Provost for Information Technology (3/5 time appointment).

Liaison between the Provost's Office and the Academic Technology Departments (Library, Information Technology Services, Media Services, Visual Resources Center, Language Resources Center).

Led effort to forge a college Intellectual Property Policy: led it through unanimous faculty endorsement (May 03) and then (after term as APIT) through several Board of Manager meetings, with approval 5/1/04.

Administration of the Technology Reserve (main source, though limited, for IT capital expenditures)

Administrative Computing coordination (shared with head of ITS)

Liaison for technology issues with Senior Staff, especially concerning long-range planning.

Faculty voice for increased visibility of technology and contact point for faculty concerns.

Participant in coordination of the many Swarthmore-Haverford-Bryn Mawr joint projects in technology, e.g., "Trico", the 3-college libraries shared technology organization.

Some grant administration.

1982–1984: Program Officer, Alfred P Sloan Foundation (full time during 82–83 academic year, part time 83–84 AY). Coordinated Foundation activities involving mathematics, applied mathematics, and quantitative literacy ("The New Liberal Arts").

Summer, 1980: Classified applied mathematics for the Institute for Defense Analyses, Princeton NJ.

1974–1979: Faculty member, Princeton University (Assistant Professor 1977–79, Lecturer 1974–77). Teaching, research, and substantial student advising, both in the Math Dept and through residency in Wilson College (Associate Master, Acting Master one semester). Taught standard courses and also graph theory, game theory, boolean algebra. Administered a large course (multivariate calculus, 10 sections). Supervised senior theses in combinatorics and mathematical programming and a graduate student working in matroid theory.

Summer 1978 and 1976: Senior Staff, Hampshire College Summer Studies in Mathematics, an intensive, residential, 6-week summer program in mathematics for gifted high school students.

1973–74: Post-Doctoral Fellow, Department of Combinatorics & Optimization, University of Waterloo, Waterloo, Ontario. Research on matroids; for 3 terms taught, and for the latter 2 coordinated, the linear algebra course for first-year engineering students.

1969–71 and 1972–73: Instructor, Phillips Exeter Academy, Exeter, New Hampshire. Taught all standard secondary mathematics courses, plus first and second year calculus, elementary logic, problem solving, and computer programming in BASIC; resided and supervised in a dorm.

1967–69 and 1971–72: Graduate School, Princeton. Occasional teaching, much advising (Resident Adviser to freshmen 1968–69 and 1971–72).

Summer 1964: Actuarial Trainee, Acacia Mutual Life Insurance Co., Washington, DC.

PROFESSIONAL ACTIVITIES

Memberships: Mathematical Association of America (MAA), American Mathematical Society (AMS), Society for Industrial and Applied Mathematics (SIAM), National Council of Teachers of Mathematics (NCTM), Phi Beta Kappa, Sigma Xi.

Grants

Collaborated with Eugene Klotz on 2 NSF-funded grants for the *Math Images Project* (co-PI on smaller initial grant, 09–10, and senior faculty at Swarthmore on the multisite grant, 11–12). Both grants provided undergraduates, even rising sophomores, with a project-based inquiry learning experience through constructing interactive educational wiki pages based on the mathematics behind striking images.

AMS-Epsilon Grants to MathPath. PI on grants sought and received each year for scholarships and general operating funds

MAA Activities

Editorial Board, MAA Notes series, 93–98 and 06–13. Associate Editor 06; Editor 07–13.

From being Notes Editor, membership on the MAA Committee on Publications (07–10) and on the subsequent Committee on Books (10–13).

Editorial Board, Classroom Resources series (monograph selection and editing), 99–05.

Editorial Board IrMAA (Online Illustrative Resources, a developing resource for the new MAA curricular recommendations), 04–06.

Council on Competitions (1/91–97); Council's Committee on Local and Regional Competitions (97–), Co-organizer of contributed paper session for this committee, national meetings Jan. 99; Chairman, MAA Committee on the American Mathematics Competitions, 81–87; member 78–87, Panelist 87–91.

Committee on Computers in Math Ed (CCIME), mid 1980s and again 91–94

Executive Committee, Eastern PA and Del. Section, MAA (83–85).

Committee on the Undergraduate Program in Mathematics (82–86) and its Panel on Discrete Mathematics.

Planning Committee for the National Study of Resources for Collegiate Mathematics (1985).

Associate Editor, FOCUS (newsletter of the MAA), 1982–87; numerous articles on competitions.

Speaker, Visiting Lecturer Program (78?–86).

DIMACS (national center for DIScrete Mathematics And Computer Science, housed at Rutgers)

DIMACS Educational Module Series in Discrete Mathematics and Theoretical Computer Science, Associate Editor (01–), Editor in Chief (97–01).

Headed up a planning effort to increase DIMACS involvement in undergraduate education (96–97)

Advisory Committee and summer workshop staff for the DIMACS Project to Reconnect Two and Four Year College Faculty to the Mathematical Sciences Enterprise (98–99).

Swarthmore College Activities

First-Year Seminar program (have taught 28S several times, and one time 28P, which coordinated with the then Physics FYS)

First-Year Math/Stat Placement Czar (97–99, 00–03)

Speaker for Math/Stat for Ride the Tide (admittee weekend), at least 06, 07.

Speaker for latke side in Swarthmore Latke-Hamentaschen debate, 06; gave a mathematical proof of the superiority of latkes!

Math/Stat participant in hiring of new education professor and new philosophy of science professor, Spring 03.

Math/Stat representative over summer (in absence of chair) to the DuPont Architects selection committee (97)

Other regional or national activities:

Discrete Math Consultant, Core Plus Alternative Senior Course Project, 2010– ; Full Curriculum revision project, 2000–07. (Core Plus is one of the NSF funded new secondary math curricula. The alternative senior course is for students not heading into college calculus. I was an evaluator by mail and at CorePlus planning conferences, Kalamazoo June 06, June 05, May 04, June 03, Nov 02, and College Park MD, Dec 00.

Consultant to the development of a new Texas 4th year high school course in discrete math, 2007–09.

Writer and Consultant to CME Project, 05–09. (Another NSF funded secondary math curriculum, emphasizing problem solving and high expectations within a more traditional structure. I was the principal writer of a linear algebra chapter for the Algebra II book.)

Consultant and potential writer form the CME Linear Algebra Project, 2008– (another, more specialized high school curriculum project of CME)

Participant in successful effort to secure NSF systemic math/science grant for Philadelphia area (PI: Prof Merlino, LaSalle University), 03. Was consultant to the program and participate in various workshops, e.g., Trico Formative Assessment Workshop, Haverford, 5/18/05; consulting with Quakertown School District (Oct 06).

Member, Public Information Liaisons of JPBM (Joint Policy Board for Mathematics), ca. 92–95.

Refereeing for expository journals (MAA On-Line, PRIMUS, American Mathematical Monthly, Mathematics Magazine), book publishers, and various combinatorics research journals (including Electronic J. Combinatorics and Discrete Mathematics)

Reviewer of NSF research and education proposals

School District Activities

Helped Strathhaven HS develop a linear algebra course (03); lectured in it and calculus courses (04-06); each year coordinate with chair there about encouraging a few appropriate SHHS students to take math courses here.

Participant and grader, NSF Evaluation Study (circa 2001) of the Interactive Mathematics Program used at Strathhaven HS 199 until recently.

Member, Wallingford-Swarthmore School District Committee to choose new companion textbooks, K–12 (98).

Math Enrichment at Swarthmore Rutledge School (K–5): Dimensions in Math Committee (91–92 and 95–00; Chair 95–96; Manager of Math Room computers 96–00). Math Parent (91-00): ran weekly pullout enrichment sessions for various classes; provided materials and training for others to be Math Parents. Ran 5th grade Math Olympiad (various years). Speaker to various classes at SRS on Math Career Day (94,95).

Strath Haven Middle School, math enrichment for the 6th grade (Nov 97–), visiting speaker for 8th grade accelerated class (Oct 99)

INVITED ACTIVITIES

Advisory Board and invited participant in the American Institute of Mathematics (AIM) Conference "Math Camp Workshop", March 6–8, 2013.

Invited Panelist on "The faculty member as teacher and scholar" at the Project NExT workshop at MathFest, Pittsburgh, August 2010. NExT is a national effort by the MAA to help starting faculty who are particularly interested in balancing teaching and research.

Examiner (writes and grades the questions), Lower Michigan Math Contest, April 2008 (for colleges in lower Michigan).

Keynote speaker, Pennsylvania State System Mathematicians Association annual meeting, 3/24/07, Bloomsburg U, on Advising a Precollege Curriculum Project.

Interviewed for centennial history of the MAA to be published in 2015.

Writing in Quantitative Majors workshop, Trico, funded by NITELY, Bryn Mawr College, June 8, 9, 13, 2005.

Speaker on Panel on Effecting Change, MAA national meeting, Phoenix, Jan 04.

Participant and panel presenter, Discrete Math Curriculum Conference, West Point, Oct 3–6, 2002.

Participant, National Academy of Science Conference on Quantitative Literacy, Washington, Dec 2001; designated respondent to one of the pre-conference position papers.

Visiting Committees to various Mathematics Departments, most recently Quakertown School District (Oct 2006); Middlebury College (March 2002; I was chair; the issue was whether Math and CS should split), Phillips Exeter Academy (1999), Dwight Englewood School (1999, written evaluation of Integrated Math Science curriculum), Yeshiva University (1998), Williamson Free School (a private post-secondary all-scholarship trades school, 1994), Ursinus (1993).

Keynote Speaker, Boston College Conference on Principles and Standards for School Mathematics and Discrete Mathematics, Dec 2 2000. Talk title: Discrete Mathematics in the Year 2000: What Came True.

IMO 2001 (International Mathematics Olympiad), Host country problems committee and chief grader for one of the chosen problems, July 2001, Washington DC.

Keynote speaker, DIMACS one-day conference on student research in discrete mathematics, April 28, 2001.

Invited articles in NCTM 1991 and 1998 yearbooks, in the *Mathematics Teacher* (1984), *College Mathematics Journal* (1985), and in various books on math education and calculus instruction.

Invited speaker to AFNA Scholars (Afro-American enrichment program for 7–12th graders in Phila.), March 99; to continue in 99-00.

Examiner (writes and grades the questions), Ohio 5-College Mathematics Competition (2000).

“Bad Writing before Good” (on writing in math class), 20-minute talk at AMS Philadelphia meeting, April 98.

Speaker on discrete math at NCTM mid-atlantic meeting Dec 95; at Miniworkshop on Combinatorial Structures in Molecular Biology, Rutgers, Nov 94; to secondary teachers as part of SIAM national meeting (July 93);

Community Mathematics Program Review Committee, Wallingford-Swarthmore School District (89–90); Consultant to District on revision of the high school math curriculum, (95–96 and 1998).

MAA NSF-funded Interactive Mathematics Text Workshop, July 93, Towson MD (one week); Advanced Workshop July 94, Dearborn MI (two weeks). Primarily based on using *Mathematica*, from which I developed various discrete math materials, some of which I have used with my classes.

Presented minicourse on Discrete Algorithmic Mathematics at national and regional MAA and NCTM meetings, most recently MAA Eastern PA summer course, June 92 (one week), and NCTM Mid Atlantic regional, Dec 89 (one day course).

Special panel to ETS to review their procedures in light of the several errors on the math SATs (82). Problem reviewer for ETS high school exams (85–89). Member College Board Committee to review the Math Advanced Placement Program (June 86).

COMMUNITY ACTIVITIES

Swarthmore Swim Club: Governing Board (99–), VP (2000), Treasurer (2001), President (Feb 02 – Feb 04).

Trinity Cooperative Day Nursery: Governing Board (1993–98); Treasurer (95–98), Acting President (97 – Aug. 98).

Boy Scouts and Cub Scouts: Chair of Cub Pack 112 Committee (94–95), Den leader (95–96), Pack Committee (98–99); help lead some Boy Scout trips and Eagle projects (through 04).

HONORS AND FELLOWSHIPS

- Named the first Neil R. Grabois '57 Professor in the Natural Sciences and Engineering, 2010–.
- 1999 Service Award, Wallingford-Swarthmore School District for my decade of volunteer work with Dimensions in Math at Swarthmore Rutledge School (K–5).
- 1985 Presidential Award from the American Mathematical Association of Two-Year Colleges for service to two-year college mathematics.
- 1981 Allendoerfer Award of the MAA for expository writing, for “The King Chicken Theorems” in Mathematics Magazine.
- NSF Graduate Fellowship 1967–69; declined renewal offer for 1969–70.
- Graduated from Swarthmore with Highest Honors; elected to Phi Beta Kappa and Sigma Xi.
- 17th on the 1966 Putnam Examination, an exam in collegiate mathematics taken by several thousand undergraduate mathematics majors in North America each year, including most of the best.
- First in North America on the Fall 1964 offering of the First Actuarial Examination of the Society of Actuaries.

OTHER INTERESTS

Writing letters and email, gardening, cycling, trains, hiking, travel,

REFERENCES

- Constance Hungerford, previous Provost, Swarthmore College. (email: chung1@swarthmore.edu)
- Prof Charles Grinstead, Chair (00-03), Dept of Mathematics and Statistics, Swarthmore College. (email: cgrinst1@swarthmore.edu)
- Prof Peter Hajnal, former Co-Dean of the European College of Liberal Arts, Berlin, who hired and supervised me for my semesters there in Fall 2007 and Winter 2012 (email: P.Hajnal@ecla.de; phone +49 30 43733 206)
- Prof Anthony Ralston, emeritus, CS Dept, SUNY Buffalo. Co-author of a text with me, and knowledgeable generally about my national work on curriculum. (email: ar9@doc.ic.ac.uk)
- Al Cuoco, Head, Center for Mathematics Education, EDC (Education Development Center), 55 Chapel St, Newton MA 02458-1060. Leader of the CME Project for which I am writing. (email: acuoco@edc.org)
- Prof William McCallum, Mathematics Dept, U of Arizona, Tucson, AZ 85721-0001. Colleague among the Core Plus consultants. (email: wmc@math.arizona.edu)
- Donald J. Albers, 925 Arbor Road, Menlo Park, CA 94025. Head of Publications for the MAA, now semi-retired, under whom I work as Notes Series Editor. (email: dalbers@maa.org)
- Cathy Stambaugh, Strathaven HS, Wallingford PA, head of math for the local school district. (email: cstambaugh@w-ssd.org).
- Prof Fred Roberts, Director of DIMACS. Has known me for 20 years; can comment on my involvement with DIMACS but also other things. (email: froberts@dimacs.rutgers.edu)
- Prof F. Joseph Merlino, La Salle University, Philadelphia, PA 19141-1199. Director of the Greater Philadelphia Secondary Mathematics Project. (email: merlino@lasalle.edu).
- George Berzsenyi, Rose-Hulman Institute (retired). Co-author on Contest Problem Book and close associate during my years with the contest committee. (email: george_bertzsenyi@msn.com)

BIBLIOGRAPHY

BOOKS:

- “Discrete Algorithmic Mathematics”, text for a freshman/sophomore discrete math course (with Anthony Ralston), 3rd ed. 2004, A K Peters, Natick MA (now part of the Taylor & Francis Group of CRC Press). Also 2nd corrected ed. from A K Peters, 1998, 1st ed. from Addison-Wesley, 1991.
- “Solution Manual for Discrete Algorithmics Mathematics 3\” (with A Ralston, L Evans, H Pomeranz, G Rosenberg and B Taylor), student ed. and complete ed., 2005. Manuals for 1st and 2nd eds. (with A Ralston, H Pomeranz, and B Taylor) available from A K Peters.
- “Contest Book V” (AHSME and AIME Contest problems and solutions, 1983–88), MAA New Mathematical Library, compiled and augmented with G Berzsenyi, MAA, Washington DC, 1997.

ARTICLES (in chronological order):

- Matroid basis graphs I and II, *J Combinatorial Theory Ser B*, 14 (1973) 216–240 and 15 (1973) 121–145.
- Basis graphs of pregeometries, *Bull AMS*, 79 (1973) 783–786.
- Pivotal theory of determinants, *Math Programming Studies I* (supplement to *J Math Programming*) (1974) 159–174.
- Functional equations in secondary mathematics, *Math Teacher*, 67 (1974) 293–298.
- Hebrew translation of previous entry in *Israel Math Teachers J*, Winter 1974–75 (translated by that Journal at their request).
- Intervals in matroid basis graphs, *Discrete Math*, 11 (1975) 147–159,
- A maximum-rank minimum-term-rank theorem for matroids, *Linear Algebra and its Applications*, 10 (1975) 129–137.
- Cycle-complete graphs, *Proc 5th British Combinatorial Conference* (Aberdeen Scotland, July 75), *Utilitas Mathematica Publishing Co*, 1976, pp 447–453.
- Graphs with uniquely decomposable (co)cycle vectors (abstract), *Proc 7th Southeastern Conference on Combinatorics, Graph Theory and Computing* (Baton Rouge LA, Feb 1976), *Utilitas Mathematica Publishing*, Winnipeg, 1976, p 541.
- Matrix generalizations of some theorems on trees, cycles and cocycles in graphs, *SIAM J Applied Math*, 30 (1976) 143–148.
- Vertex colorings without isolates, *J Combinatorial Theory Ser B*, 27 (1979) 294–319.
- On k -critical, n -connected graphs (with P J Slater), *Discrete Math*, 20 (1977) 255–262.
- On k -minimal, n -edge-connected graphs (with P J Slater), *Discrete Math*, 24 (1978) 185–195.
- Minimally 2-edge-connected graphs (with P J Slater), *Proc 2nd International Conference on Combinatorial Mathematics* (New York, April 1978), A Gewirtz and L Quintas, eds, *New York Academy of Science*, 1979, pp 377–382.
- A collection of open problems (compiled with M Capobianco, D McCarthy and J Mulluzzo), *Proc 2nd International Conference on Combinatorial Mathematics* (New York, 1978), A Gewirtz and L Quintas, eds, *New York Academy of Science*, 1979, pp 565–590.
- Notes for faculty on teaching multivariate calculus at Princeton from Williamson, Crowell and Trotter (notes to supplement text), mimeographed, 1978.

- Determinants (notes to supplement text), mimeographed, 1978.
- Nearly cycle complete and nearly cocycle complete graphs (with M Cozzens), Proc 10th Southeastern Conference on Combinatorics, Graph Theory and Computing (Boca Raton FL, April 1979), Utilitas Mathematica Publishing, Winnipeg, 1979, pp 325–340.
- Large Minimal realizers of a partial order I (with I Rabinovitch), Proc AMS, 66 (1977) 211–216.
- Large minimal realizers of a partial order II (with I Rabinovitch and W T Trotter), Discrete Math, 31 (1980) 297–313.
- A generalization of Turan’s theorem to directed graphs (with I Rabinovitch and W T Trotter), Discrete Math, 32 (1980) 167–189.
- Partially ordered sets with equal rank and dimension (with I Rabinovitch and W T Trotter), Proc 11th Southeastern Conference on Combinatorics, Graph Theory and Computing, Congressus Numerantium 29 (1980) 627–637.
- The king chicken theorems, Math Magazine, 53 (1980) 67–80.
- AHSME, AIME, USAMO: the examinations of the Committee on High School Contests (with W E Mientka), Math Teacher, 75 (1982) 548–557.
- On induced economic change in precapitalist societies (with F Pryor), J Development Econ, 10 (1982) 325–353.
- Taxes and capital intensity in a two-class disposable income growth model (with L Seidman), J Public Economics, 19 (1982) 243–259.
- Some unusual locus problems, Two-Year College Mathematics J, 14 (1983) 146–153.
- The effects of a new college mathematics curriculum on high school mathematics, and Report of the workshop on implementation, “The Future of College Mathematics: Proceedings of a Conference/Workshop on the First Two Years of College Mathematics”, A Ralston and G S Young, eds, Springer, New York, 1983, pp 153–175 and 261–273.
- Reprinting of previous entry in “The Monitoring of School Mathematics: Background Papers,” Vol 1 on mathematics curriculum, Thomas A Romberg and Deborah M Stewart, eds, Wisconsin Center for Education Research, Madison WI, 1986, pp 165–185.
- An interview with Albert W Tucker (edited for publication with Tucker), Two-Year College Mathematics J, 14 (1983) 210–227; reprinted in “Mathematical People”, Donald J Albers and G L Alexanderson, eds., Birkhauser, Boston, 1985.
- Stirrings in the mathematics curriculum: changes mathematicians are thinking of making, Proc National Educational Computer Conference, Baltimore, 1983.
- College entrance mathematics in the year 2000, Math Teacher, 77 (Sept 1984) 422–428.
- Two meanings of algorithmic mathematics, Math Teacher, 77 (Sept 1984) 430–435.
- The consumption tax, horizontal redistribution, and aggregate saving (with L Seidman), International J of Math Modelling, 5 (1984) 205–222.
- The lessons of Williamstown, in “New Directions in Two-Year College Mathematics” (proceedings, Sloan conference at Menlo College, July 84), D J Albers, S B Rodi & A E Watkins, eds, Springer, New York, 1985, pp 255–270.
- The algorithmic way of life is best, College Math J, 16 (Jan 1985) 2–18, (Forum piece and reply to responses).

U.S. team places second in International Olympiad, FOCUS, Vol 5, #4 (Sept 85) 1–2 (lead story, with by-line).

Book review of “The Future of College Mathematics”, College Math J, 15 (Nov 1985) 458–460.

CAMC examines America, FOCUS, Vol 6, #1 (Jan-Feb 86), center section, page i and following (lead story, with by-line).

Keane leads US Olympiad team to 1st place tie with USSR, FOCUS, Vol 6, #4 (Sept 86), 1–2 (lead story, with by-line).

New knowledge about errors and new views about learners: what they mean to educators and more educators would like to know; Ch 7 in “Cognitive Science and Mathematics Education” (proceedings of a conference at the University of Rochester, December 84), Alan Schoenfeld, ed., Lawrence Erlbaum Associates, Hillsdale NJ, 1987, pp 165–188.

Reflections of an Ex Foundation Officer, in “Towards a Lean and Lively Calculus” (Proceedings of a conference on Calculus, New Orleans, Jan 86) MAA Notes #6, Ronald Douglas, ed., MAA, 1986, pp 73–84.

Review of “Constructive Combinatorics” (D Stanton & D White), in UMAP Journal, Vol 9, No 1 (Spring 1988), pp 93–94.

Is discrete mathematics dead?, UME Trends, Vol 1, No 2 (May 1989) lead story. Followed by letters to the editor in Dec 1989 and reply letter by me, p 7, May 1990.

Writing in mathematics at Swarthmore: PDCs, in “Using Writing to Teach Mathematics”, MAA Notes #16, Andrew Sterret, ed., 1990, pp 22–25.

Homework assignments by computer mail, AMS Notices, 37 (Feb 1990) 128–129, reprinted in Access (Swarthmore Computing Center Newsletter), Vol X (May 1990) 4.

Algorithms: You can’t teach discrete mathematics without them, in “Discrete Mathematics across the Curriculum, K–12”, 1991 Yearbook of the National Council of Teachers of Mathematics, NCTM, Reston VA, 1991, 195–206.

Advice for undergraduates on special aspects of writing mathematics, PRIMUS (a journal of undergraduate math education), Vol 1, # 1 (March 91) 9–28.

Proofs and algorithms: a reply to Gerstein, UME Trends, (Jan 91) p 8.

What are algorithms? What is algorithmics? In “The Influence of Computers and Informatics on Mathematics and Its Teaching”, Bernard Cornu and Anthony Ralston, eds., Science and Technology Series #44, UNESCO, Paris, October 1992, 39–50.

A minimum cycle problem in bacterial DNA research, RUTCOR [Rutgers Center for Operations Research] Research Report 27–92, August 1992.

Induction: Down and back, not up, Mathematics and Computer Education, Vol. 28 #2 (Spring 94), 122–131.

Review of “Gentlemen and Scholars: College and Community in the ‘Age of the University,’ 1865-1917” (W. Bruce Leslie), Swarthmore Alumni Magazine, Nov. 93.

Disorderly Currencies (letter correcting earlier article by someone else), Amer. Math. Monthly, Vol. 101, #5 (May 1994), 419.

The recursive paradigm: suppose we already knew, School Science and Mathematics, Vol. 95, #2 (Feb 1995), 91–96.

Extended Book review of “Linear Programming and Related Problems” (Evar Nering and A.W. Tucker), Amer. Math. Monthly, Vol. 101, #10 (Dec 94) 1022–1026.

Remembering Al Tucker, SIAM News, Vol. 28, #6 (July 1995) p. 15.

Letter to the Editor on Nash's Theorem, MAA Focus, Vol. 15, # 4 (August 1995) p. 3.

Can Readers find . . . ? (letter to editor on article by Goetz & Kahan) Mathematics Teacher, Vol. 88 #6 (Sept 95), p. 505.

Subtract Math Reference, letter to the editor about the Unabomber, *Phila. Inquirer*, April 15, 1996, p. A10; longer version circulated by email by the Public Information Office of the Joint Policy Board for Mathematics.

What is discrete mathematics? The many answers, in "Discrete Mathematics in the Schools" (Proceedings of the Rutgers conference on discrete mathematics in the schools, Oct 92), Joseph G. Rosenstein, Deborah S. Franzblau and Fred S. Roberts, eds., in DIMACS Series in Discrete Mathematics and Theoretical Computer Science, American Mathematical Society and the National Council of Teachers of Mathematics, Providence, 1997, pp 121–132.

What Is an Algorithm? What Is an Answer?, in "The Teaching and Learning of Algorithms in School Mathematics", NCTM 1998 Yearbook, NCTM, Reston VA, April 1998, pp 21–31.

Directed Graphs, Section 8.3 of "Handbook of Discrete Mathematics", Kenneth H. Rosen, ed., CRC Press, Boca Raton FL, 2000 (appeared Oct 99), pp 526–539.

Algorithmics, in Encyclopedia of Computer Science, 4th edition, A Ralston, E Reilly, and D Hemmendinger, eds., Nature Pub Grp, London, 2000, pp 40–42 (slight revision of article in 1993 version).

College entrance mathematics in the year 2000: what came true, Mathematics Teacher Vol 93 No 6 (September 2000) 455-59.

Local Rail in Benelux and Germany, The Delaware Valley Rail Passenger, Vol XVIII #11 (Nov 2000), p8.

The American High School Mathematics Examination: A 50 year Retrospective, (with Harold Reiter & Leo Schneider), Mathematics Competitions, Vol 14 No 2, Dec 2001, pp 45–66.

Hat Derivatives, College Mathematics Journal (33, #1), January 2002, pp 33–37.

Numerous problems (#s 3, 4, 12, 30, 44–46, 57–72, 80–83, 116–121, 123) in Part 10, Problems, in Carlson, Johnson, Lay and Porter, eds., "Linear Algebra Gems: Assets for Undergraduate Mathematics", MAA Notes #59, MAA, Washington DC, 2002.

Support faculty, develop examples, and fix admissions tests, in "Quantitative Literacy: Why Numeracy Matters for Schools and Colleges", Bernard L Madison and Lynn Arthur Steen, eds., National Council on Education and the Disciplines, Princeton NJ 2003, pp. 259–60. (Post conference impressions from the Forum on Quantitative Literacy, National Academy of Science, Washington, Dec 1–2, 2001.)

Directed Acyclic Graphs, Section 3.2 of "Handbook of Graph Theory", Jonathan Gross and Jay Yellen, eds., CRC Press, Boca Raton FL 2003, pp 142–155.

Response to "Thinking out of the box ... problem", Mathematics Teacher, Vol 97, No. 2, Feb 04, p 143. Lengthy mathematical letter to the Mathematics Teacher, in response to an article published by them in Nov 02.

Book review of "Mathematical Connections: A Companion for Teachers and Others", FOCUS Online, <http://www.maa.org/reviews/mathematicalconnections.html>, posted August 13, 2005.

Advising a Precollege Curriculum Project (with William McCallum). AMS Notices, Vol 53, #9 (Oct 2006), pp 1018–1020.

The Train in Spain Goes 180 on the Plain, The Delaware Valley Rail Passenger, Vol XXX #5, June 2011, pages 1, 11–13.

AWAITING SUBMISSION

Proof by tennis (expository article about the method of “adding structure”).

WEB MATERIALS (in complete form and of particular interest – I have put many documents freely on the web):

A Short Guide to Writing Mathematics, completed manuscript for undergraduates, pending revisions. See <http://www.swarthmore.edu/NatSci/smaurer1/WriteGuide>. Each year many people find this page and ask for the full materials.

Problem collection and solutions for Honors Linear Algebra. Text replacement for a course run through problem sets. Modified to some degree each year. For the Fall 2012 version go to

<http://www.swarthmore.edu/NatSci/smaurer1/Math28S/Problems/masterF12PROB.pdf>

or to my main webpage, from which more recent versions may be accessed through my Moodle site.

Teaching reasoning, broadly and narrowly, presented at the DIMACS symposium on Teaching Logic and Reasoning in an Illogical World (July 96); go to

<http://www.cs.cornell.edu/Info/People/gries/symposium/maurer.htm>

AVAILABLE FROM THE AUTHOR

Transition to Higher Mathematics, problem set monograph emphasizing convex sets. Earlier versions used when I taught Math 6D; a shortened version, titled Linear Geometry and Convexity, used at MathPath.

Discrete Math since 1980: What Worked and Didn't Work, article summarizing presentation on the Effecting Change Panel at the Discrete Mathematics Curriculum Conference, West Point, October 2002 and at panel of same name at MAA national meeting, Phoenix, Jan 03.

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