Septmeber 2006

CURRICULUM VITA

NAME: Stephen Bennett Maurer

POSITION: Professor of Mathematics and Chair of Mathematics & Statistics, Swarthmore College

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PERSONAL DATA:

Born 8/15/46 in Washington, DC; age 60
Married 10/9/82 to Frances R Stier
Two children, ages 20 and 17
Height 6' 1"; weight 210 lbs; health good

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: Faculty Member, Dept of Mathematics & Statistics, Swarthmore College (Associate Professor 1979–87, Professor 87–); Chair 04–07 (Acting Chair 1992–93); College Parliamentarian (04–).

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, senior conference. Volunteer for first wave of Blackboard users (Fall 2001); have developed Blackboard sites for all courses taught since then, including extensive sites for Honors Linear Algebra and Discrete Mathematics.

Scholarship and Research: discrete mathematics (graph theory, partially ordered sets, matroids, optimization), algorithmics, applied mathematics (economics, molecular biology), mathematical writing.

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

Chairing: in addition to usual duties, led the department through a revision of its program (04-06); improved flow of information from and to students about summer jobs, jobs, and graduate school; worked out new electronic preregistration with Registrar to maintain the extra information we need.

Recent college committees: First IP case review (06); NS Division Chairs (04–); Admissions (05–); 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–; Electronic Privacy Commitee, 01– and 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); Admissions Planning Group for the College Planning Committee (97–98).

Phi Beta Kappa, Swarthmore Chapter: Executive Board (early 80s and 93–), Vice President (96–99), Acting President (Spring 98), President (99–03); passage reader at the initiation (06).

MathPath, an international program for mathematically highly gifted middle school kids. Instructor, July 2003 (Spearfish SD) and July 2004 (Bristol RI); Academic Director for 2006 (Santa Cruz CA) and 2007 (Colorado Springs CO). Gave lectures on mathematics and writing mathematics, helped with problem sessions. For 04 and 05 (though not in attendance) wrote admissions test, help write funding grant, helped recruit faculty and speakers. As AD set the curriculum and teaching schedule and generally advised director.

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 though 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) including its Activity Group on Discrete Mathematics, National Council of Teachers of Mathematics (NCTM), Phi Beta Kappa, Sigma Xi.

MAA Activities

- Editorial Board, MAA Notes series, 93–98 and 06–10. Associate Editor 06; Editor 07–10.
- 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.
- First-Year Math/Stat Placement Czar (97–99, 00–03)
- Speaker for Math/Stat for Ride the Tide (admittee weekend), 06.
- Speaker for latke side in Swarthmore Latke-Hamentachen debate, 06; gave a mathematical proof of the superiority of latkes!
- Math/Stat participant (on request) to hiring of new education professor and new philosophy of science professor, Spring 03.
- Secured summer student research grants: on the game FlipSide, summer 96 (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).

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

Other regional or national activities:

Discrete Math Consultant, Core Plus Curriculum revision. (Core Plus is one of the NSF funded new secondary math curricula, now funded for a second edition, to be created 02–06.) Evaluator by mail and at CorePlus planning onferences, Kalmazoo June 05, May 04, June 03, Nov 02, and College Park MD, Dec 00.

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

Participant in successful effort to secure NSF systemic math/science grant for Philadelphia area (PI: Prof Merlino, LaSalle University), 03. Now 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 (most recently SIAM), and various combinatorics research journals (most recently 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)

Participant and grader, NSF Evaluation Study of the Interactive Mathematics Program now used at Strathhaven HS (99–02).

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

Math Enrichment at Swarthmore Rudledge 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

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.

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

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 Research Grant 1974–79, at Princeton; Harold W Kuhn, Principal Investigator.

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, swimming, , gardening, cycling, hiking, travel, racket sports (mostly squash and racketball now), Society for Industrial Archeology.

REFERENCES

Constance Hungerford, Provost, Swarthmore College. (email: chunger1@swarthmore.edu)

Judy Downing, Head, Information Technology Services, Swarthmore. (email: downing@swarthmore.edu)

Prof Charles Grinstead, Chair (00-03), Dept of Mathematics and Statistics, Swarthmore College. (email: cgrinst1@swarthmore.edu)

Prof Thomas Hunter, Acting Chair (03-04), Dept of Mathematics and Statistics, Swarthmore College. (email: thunter1@swarthmore.edu)

Prof Anthony Ralston, retired to independent scholar status in London from 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)

Prof Zaven Karian (emeritus, Dennison University), P.O. Box 422 Granville, OH 43023. Head of the MAA Classroom Resources Editorial Board, on which I actively served. (email: karian@denison.edu)

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)

Cathy Stambaugh, Strathhaven HS, Wallingford PA, head of math for the local school distrinct. (email: cstambaugh@w-ssd.org).

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: gberzsenyi@earthlink.net)

Prof Walter E Mientka, 917 Oldfather Hall, University of Nebraska, Lincoln NE 68588–0322. The Executive Director (emeritus) of the MAA Committee on High School Contests. (email: walter@amc.unl.edu)

Prof Harold W Kuhn, Princeton University, retired. Senior colleague in my area. (email: kuhn@math.princeton.edu)

BIBLIOGRAPHY

BOOKS:

"Discrete Algorithmic Mathematics", text for a freshman/sophomore discrete math course (with Anthony Ralston), 3rd ed. 2004, A K Peters, Wellesley MA. (2nd corrected ed., 1998, 1st ed. from Addison-Wesley, 1991.)

"Solution Manual for Discrete Algorithmics Mathematics 3\e" (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 516–539.

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.

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

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.

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

IN PREPARATION

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

Shortest Paths and Typography, invited for MAAs Math *Horizons*.

WEB MATERIALS (in complete form and of particular interest):

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 slightly each year. Goto

http://www.swarthmore.edu/NatSci/smaurer1/Math28P/Problems/allF05probs.pdf

or to my main webpage, from which my other other web resources may be reached as well.

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

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

AVAILABLE FROM THE AUTHOR

Minimum Height Paths, research note.

FlipSide, (with Stephanie Dyrkacz '98 and Daniel Eisenbud '98), notes from student research project to analyze the game FlipSide.

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.

Transition to Higher Mathematics, problem set monograph emphasizing convex sets, (earlier ersions used when I taught Math 6D).

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