

TAYLOR, JEAN E.

Education:

A.B., Mount Holyoke College, 1966
M.S. (in Physical Chemistry), University of California, Berkeley, 1968
M.S. (in Mathematics), University of Warwick, England, 1971
Ph.D., Princeton University, 1973 (Thesis title: Regularity of the singular set of two dimensional area minimizing flat chains modulo 3 in R^3)

Positions:

Instructor, MIT, 1972-73
Rutgers University:
Assistant Professor, 1973/77
Associate Professor, 1977/82
Professor I, 1982/87
Professor II, 1987 - 2002
Professor Emerita, 2002 - present
Member, interdisciplinary program on Continuum Mechanics at Rutgers
Fellow, Douglass College, 1981-present
Visitor, Courant Institute for the Mathematical Sciences, 2002-present

Short-Term Visiting Positions:

Member, IAS (Institute for Advanced Study) 1974/75, 1977/78, 1985, 1995/96
Senior Associate, Department of Mathematics, Australian National University, 1980
Visitor, Princeton University, 1980/81
Visitor, Institute for Math and Appl., January-February, 1983; September 1995;
MSRI, various 1-3 week periods (most recently, June 1997)
Visiting Scholar, Stanford University, 1989
Visiting Research Collaborator, Princeton University, 1997-1998
Miller Visiting Professor, University of California, Berkeley, 1999
National Institute of Standards and Technology, 1999
Hokkaido University, Sapporo, Japan 1999

Honors:

D.Sc., Honoris Causa, Mount Holyoke College, 2001.
Fellow, American Academy of Arts and Sciences (elected 1999)
Fellow, Association for Women in Science (elected 1999)
Fellow of the American Association for the Advancement of Science
Rutgers College Class of 1962 Presidential Public Service Award, 1999
Alfred P. Sloan Fellow, 1976/78
NSF Graduate Fellow, 1966/72; Woodrow Wilson Fellow (Honorary), 1966/67
Phi Beta Kappa, summa cum laude, First Sarah Williston Prize (first in class) at Mount Holyoke College
Listed in Who's Who in America, 2002-present.

Selected Professional Activities:

American Mathematical Society: Board of Trustees, 2003-2008 (including Chair, 2006-2007, Chair of ECBT Nominating Committee, 2005; Member, Audit Committee; Member, Agenda and Budget Committee; Member, Committee on the Profession, 2006-2008; Member, Committee on Meetings and Conferences, 2003-2006); Vice President, 1994-1997; Member, Committee on Meetings and Conferences, 2002-2006; Member, Program Committee for AAAS annual meetings, 1999-2002; Science Policy Committee, 1994-1995; Steele Prize Committee, 1991-1995; Nominating Committee, 1977-78; Member-at-Large, Council of the AMS, 1984-89; Executive Committee of the Council of the AMS, 1985-89; Committee on Committees of the AMS, 1985-86; Chair, Long Range Planning Committee of the AMS, 1987 (member, 1986-87); Agenda and Budget committee, 1988; Ad Hoc Committee on the Proposed Structure of JPBM (chair), 1988; Ad Hoc Committee on NCTM Standards, 1988-89; National Program Committee, AMS, 1989-90 (chair, 1990 and 1991); Selection Committee, Arnold Ross Lectures (AMS), 1993-1995; Member, AMS panel on meetings, AMS annual meeting, 1994; Moderator, panel on Mathematics Awareness Week, AMS annual meeting, 1995

President, Association for Women in Mathematics, 1999-2001; Past President 2001-02; President-elect 1998-1999; Noether Lecture Committee, 2007

Member, Board of Directors, American Association for the Advancement of Science, 1995-1999

American Institute of Mathematics: Scientific Research Board, 2003-present

Member, Joint Policy Board for Mathematics, 1994-1995

Society for Industrial and Applied Mathematics: Polya Prize committee, 2007

Mathematical Association of America: Committee on the Earle Raymond Hedrick Lectures, Jan. 1999-Jan. 2002 and Jan. 2005-present.

New York Academy of Sciences Human Rights Committee, 1990-present

Black Rock Forest Consortium: Member-at-Large, Board of Directors, 2001-2008

Editorial Boards: Experimental Mathematics; Interfaces and Free Boundaries Journal
Referee for various mathematics and physics journals

Site visit team for NSF's ADVANCE program, 2006

Phi Beta Kappa Visiting Scholar, 2006-2007 (at least two lectures during visits of at least two days at each of eight different colleges) Chair, Section A (Mathematics), AAAS, 2004-05; retiring Chair, 2005-06; chair-elect, 2003-04

Chair, AMS-AAAS Liaison Committee

Executive Committee, Conference Board of the Mathematical Sciences, 2000-2002; (Member of CBMS, 1999-2002)

Member, Board of Directors, IMO 2001 USA (International Mathematical Olympiad)

Member, Board of the Association of Princeton Graduate Alumni (and of its Nominating Committee)

Visiting Committee, Oregon State University Mathematics Department, 2003 (earlier, on Visiting Committees for mathematics departments of Lehigh University and SUNY Stony Brook)

Board of Advisors, The Geometry Forum (electronic forum, from high school through universities and research; now The Mathematics Forum)

Chair, AMS adhoc Policy Review Committee for the Committee on the Profession, 1996

Board of Governors, National Science and Technology Center for Computation and Visualization of Geometric Structures (a.k.a. The Geometry Center), 1994-95
Prior to its reorganization, the 19 members of the Geometry Computing Group, of which I was a member since 1989, constituted the “permanent faculty” of The Geometry Center.

Senior Member, Center for Geometric Analysis and Data, 2010-present

Committee on Applied Mathematics Training, National Research Council, 1977-78

Committee to select regional conferences, Conference Board of the Mathematical Sciences, 1980-83

Visiting Committee for SUNY Stony Brook Mathematics Department, 1998-99

Chautauqua Advisory committee, 1989-1993

Sounding Board member for *On the Shoulders of Giants*, published by NRC, 1990

Materials Science and Mathematical Sciences Project Planning Group, National Research Council, 1990-91

Nominating Committee, Section A, American Association for the Advancement of Science, 1991-1994 (chair 1993-1994)

Joint Program Committee for the Orono Meeting, AMS-MAA, 1990-91

Program Committee, Joint SMM-AMS meeting in Guanajuato, Mexico, 1995 (SMM is the Sociedad Matemática Mexicana)

Committee on Calculus Reform and the First Two Years, Mathematical Association of America, 1991-1994

Chair, Connections Task Force, M.S.E.B., National Research Council, 1992

Advisor for *Life by the Numbers*, a TV series on mathematics produced by WQED

Member, Membership Committee, Section 1, American Academy of Arts and Sciences 2000-2001

Guest Editor, *Odyssey* (a children’s science magazine) for September 2001 issue

Meetings Organized

AMS Summer Research Conference, 1988 (chair)
Workshop on Computational Crystal Growth, The Geometry Center, 1992 (chair)
Special Sessions of the AMS, 1977, 1985, 1991 (chaired each), 2008
Session at National Meeting of AAAS, 1985 (chair)
AWM Panel Discussion, Joint Mathematics Meetings, 2000 (organizer)
SIAM Conference on Mathematics and Materials Science, Philadelphia, 1997
Minisymposium on Interface Motion, International Congress on Industrial and Applied Mathematics, Edinburgh, 1999
Workshop on Resources for Women in Mathematics, Chairs Colloquium, Board on Mathematical Sciences, NAS, November 1998
Olga Taussky Todd Celebration of Careers for Women in Mathematics, MSRI, 1999

Assorted Major Invited Lectures

Indian Academy of Sciences, Bangalore, Public Lecture, October 2005
Royal Canadian Institute, Toronto, Public Lecture Nov 20, 2005
Noether Lecture, Joint Mathematics Meeting, January 2003
Symposium on the play "Proof," New York University, 2000
Plenary Lecture, Mathematical Challenges Meeting, AMS, 2000
Earle Raymond Hedrick Lectures, 1998
American Mathematical Society, 1977
AMS-MAA Joint Address, 1989
Australian Mathematical Society, 1991
Canadian Mathematics Society, 1988
Mexican Mathematical Society, 1993
Frontiers of the Physical Sciences Symposium, AAAS, 1998
Hudson River Undergrad. Mathematics Conference (keynote address) 1995
International Congress of Nonlinear Analysis, 1992
New Jersey Section of Mathematical Association of America, 1973, 1982, 1989
Fifteenth USA Mathematical Olympiad Address, 1986
Felix Klein colloquium, Universitat Dusseldorf, 1983
Frontiers of Science (National Academy of Sciences), 1990
Public lecture on Computing Soap Bubbles and Crystals, Australian National University, 1991
AWIS Luncheon Speaker, AAAS-Artic Science Conference, Alaska 1999
Neal H. McCoy Lecture, Smith College, March 2001

Series of 3 or more talks at: Indian Institute of Science/Tata Research Institute/Indian Academy of Science, Bangalore (2005, 2006); Beijing University (1986), Australia (Melbourne University and ANU, 1980), Clemson University (1976), Princeton University (1990), as well as MAA's Hedrick Lectures (1998) and the Phi Beta Kappa Visiting Scholar lectures (2006-2007).

International meetings: Australia (1980, 1990, 1991(3), 2002), Brazil (1988), Canada (1978, 2005(3)), China (1986), Curacao (1995), England (2014(2)), France (1984, 1986,

1989, 1996), Germany (1972, 1983, 1986, 1994, 1995(2), 1996, 1998, 2003), Great Britain (2002), Greece (1983), Israel (1998), Italy (1972, 1973, 1977, 1983, 1992, 2004, 2014), Japan (1978, 1999), Mexico (1993, 2003), Portugal (1999), Scotland (1978, 1999), South Africa (2000)

Numerous talks at national meetings, including TMS (The Mining, Minerals, and Metallurgical Society) (1988, 1991, 1998, 2006), the Materials Research Society (1991, 1998 (twice)), the American Ceramics Society (1995), AMS Summer Research Institutes (1973, 1984, 1990), Special Sessions at AMS meetings (1977, 1980, 1983, 1985(2), 1987(2), 1989, 1991(3), 1994, 1995, 1999, 2001(2), 2002, 2014), SIAM meetings (1997, 2000, 2004), and many other domestic conferences, including IMA (1982, 1986, 1988, 1990), MSRI (1989, 1991, 1992, 1995), The Geometry Center (1992, 1994), AAAS Annual Meeting (1983, 1996, 1999, 2003), DIMACS 1996 (in Princeton), Statistical Mechanics (1998), several Gordon Conferences, PCMI (2010,2014).

(usually 10 - 15 talks total per year, somewhat less recently
Talks during 2014:

Grants:

PI, NSF grants, 1973-1997

PI, AFOSR grants, 1987-1991

Consultant, National Institute for Standards and Technology, 1990-1998

PI, NSF/AWM Travel Grants for Women in the Mathematical Sciences.

Grant from NSF to AWM)

PI, Core Support for the Association for Women in Mathematics, NSA

Subcontract from a DARPA grant to NIST, 1992-1996

Participated in producing the NSF VIGRE grant proposal for Rutgers Math Dept.

co-PI, Rutgers University grant for Instructional Technology: creation of web-based support for calculus instruction in math 135

Research Supervised:

Ph.D. : Andrew Roosen, 1994 (initial job NRC postdoctoral fellow; currently Mathematician in the Ceramics Division at the National Institute for Standards and Technology

David Anderson (initial job Davies Fellow at West Point Military Academy, now in financial mathematics),

Jeanette Kelley (initial job post-doc position at Texas A&M University; now at NSA)

Jason Yunger (initial job, J. P. Morgan, now with a hedge fund)

M. Sc. : Richard Porter, Lino Sosa, Andrea Sufke

VIGRE rotation: Peter Kay (2001)

Major Rutgers University Committees:

Admissions Committee, Douglass College (Chair, 1981-82)

Appointments and Promotion Committee (to tenure), 1986-88

Appointments and Promotion Committee (Professor II), 1989-1991

Committee on Educational Policy of the Faculty Council, 1992-1995
Douglass Project for Rutgers Women in Math, Science, and Engineering

Educational innovations:

I undertook various innovations (for Rutgers) for Calculus 151 in spring 1994, including use of graphing calculators and having 20 minute group problem solving sessions at end of each class; I continued both these practices in some form in all calculus classes in subsequent years

Beginning in the year 2000, in the largest single math course at Rutgers (total annual enrollment: 3,000 students), I introduced the use of WeBWorK, a web-based individualized homework creation and grading program created at the University of Rochester. Difficulties occurred due to differences in computer environments and to scaling (the largest course using WeBWorK at Rochester had involved 100 students). Still, students in the sections I taught found it one of the most useful aids in learning calculus.

I taught a Douglass Scholars seminar “Some New Math” three times. Computers were a central part of this course at a time when they were much less ubiquitous.

I chaired the committee to revise the Ph.D. Qualifying exams in the department, playing a major role in changing them.

I initiated a series of short talks by faculty on their research for first year math graduate students at Rutgers. This series was then adopted by the grad students and run as part of their “pizza seminar.”

Public Education:

Advisory Committee National Museum of Mathematics, 2011-present

Guest expert, 3-2-1 Contact (produced by the Childrens’ Television Workshop, rebroadcast many times on the PBS Network).

Articles about me and my work have appeared in Science News (Sept. 20, 1975, January 1987, August 1988 and December 1989), Ivars Peterson’s books “The Mathematical Tourist” and “Islands of Truth,” Cray Channels, MAA Focus, Science (April 3, 1992), Scientific American (October and November 1993), The Scientist (1993), Math Horizons (Sept. 1994), The College Mathematics Journal (Still Questioning Authority: An Interview with Jean Taylor, by Donald J. Albers, The College Mathematics Journal vol 27 No. 4 (Sept. 1996), 250-266), Mathematical People volume 3, Notable Women (book by Morrow and Pehl, 1998), the web site <http://www.agnesscott.edu/lriddle/women/jtaylor.htm>, and elsewhere. I am the subject of the poster “Asking the Right Questions,” poster number 30 (of 36) in the Poster Project concerning women in science, created by the artist Pam Davis and available at <http://www.physics.ucla.edu/scienceandart/pdavisposters> and with additional material at <http://www.math.sunysb.edu/posterproject/www>.

Appeared in the film “Soap Bubbles” (part of Mathematics and Art Series), directed by Michele Emmer (shown on National Television in Italy and Japan and at 1986 Venice Biennale).

Representative of the American Association for the Advancement of Science to the United Nations Conference on Women, Beijing (June 1995) and its associated NGO Forum. Representative of the Association for Women in Mathematics to the United Nations conference Beijing Plus 5, United Nations Building, New York (June 2000)

Many public lectures, some of which were listed earlier

Postdoctoral mentoring: MAA's Project NExT consultant and frequent panel member, panelist in AWM workshop on mid-career; Young Mathematicians Network postings and publications; AWM Workshop mentor twice

Graduate level mentoring: lectures in IAS mentoring program for women (2004 and earlier); Women in Science and Engineer panel discussion at Princeton 2000; Noetherian Ring lecture and discussion, Princeton University; Princeton reunions-APGA forum on women in science 2000; others

Undergraduate level: Smith College undergraduate seminar 2005; Nebraska undergraduate women conference plenary speaker 2003; Hudson River Undergraduate Mathematics Conference plenary speaker; National Academy of Sciences Undergraduate Convocation on From Analysis to Action 1995; Bunting-Cobb (Douglass College dormitory) discussion 1998; others

Elementary through high school involvement: Canadian Math Education Study Group 2005 (in addition to my survey talk) Mathcamp, 1998; After School workshop (Educational Equity Concepts) Washington DC 2002; Forum for School Science, AAAS annual meeting, 1999; Scientist for Science-By-Mail (Liberty Science Center), 1994; Speaker and soap-bubble-related activities organizer, DIMACS, 1991-94; Talks in New Jersey high schools; I receive many email requests from students for information about my career as a woman in mathematics; they often have quite detailed questions and I try to answer nearly all of them personally.

Additional Public Service:

Water quality tester for Stony Brook Millstone Watershed Association, 1990-98.

Audit Committee, Catskill 3500 Club, 2004-07 (chair, 2006-07); Second Vice President 2007-2009 (slated to become President eventually)

Personal:

Born in San Mateo, grew up in Sacramento (attended C.K.McClatchy Senior High School).

Backpacker (have hiked entire John Muir Trail, all Catskill peaks summer and winter); scuba diver; former mountain climber, rock climber, white-water canoer and kayaker, and skier (downhill and mountaineering); former solo pilot; ski-dived once. Seen tigers in India, penguins in Antarctica and the Galapagos, cheetahs in Tanzania.

Married to John M. Guckenheimer, 1969-73; Frederick J. Almgren, 1973-97 when he died; William T. Golden, 2001-2005.

Proud mother and step-mother of three children with Fred Almgren, all mathematicians.

JEAN E. TAYLOR Publications; MR is Math Reviews number

(videos, most essays, and a published interview listed at end)

1. Jean E. Taylor, Regularity of the singular set of two dimensional area minimizing flat chains modulo 3 in R^3 , *Inventiones Mathematicae* **22** (1973), 119-159. MR0333903
2. J. Guckenheimer (former married name), Singularities in soap-bubble-like and soap-film-like surfaces, *C. I. M. E., III Ciclo* (1972), Edizioni Cremonese, Rome (1973), 157-171. MR0405220
3. Jean E. Taylor, Existence and structure of solutions to a class of nonelliptic variational problems, *Symposia Mathematica*, XIV (1974), 499-508. MR0420407
4. Jean E. Taylor, Singularities in 'soap bubbles' and 'soap films', *Global Analysis and its Application*, vol. II, International Atomic Energy Agency Vienna (1974), 271-280. MR0433310
5. Jean E. Taylor, The structure of singularities in area-related variational problems with constraints, *Bull AMS* **81** (1975), 1093-1095. MR0833223
6. Jean E. Taylor, Unique structure of solutions to a class of nonelliptic variational problems, *Proc. Symp. P. Math XXVII* (1974), 481-489. MR038825
7. Jean E. Taylor, The structure of singularities in soap-bubble-like and soap-film-like minimal surfaces, *Annals of Mathematics* **103** (1976), 489-539. MR0428181
8. Jean E. Taylor, The structure of singularities in solutions to ellipsoidal variational problems with constraints in R^3 , *Annals of Mathematics* **103** (1976), 541-546. MR0428283
9. Frederick J. Almgren, Jr. and Jean E. Taylor, The Geometry of Soap Films and Soap Bubbles, *Scientific American*, July 1976 **241** (1), 82-93.
10. Jean E. Taylor, Boundary regularity for solutions to various capillarity and free boundary problems, *Comm. in Partial Differential Equations* **2** (1977), 323-357. MR0487721
11. Jean E. Taylor, Crystalline variational problems, *Bull. AMS* **84** (1978), 568-588. MR0493671
12. Jean E. Taylor, Surfaces minimizing the integrals of crystalline integrands, *Minimal Submanifolds and Geodesics*, Kaigai Publications, Tokyo, (1978), 229-247. MR0574268
13. F.J. Almgren, Jr., and J.E. Taylor, Descriptive geometry in the calculus of variations, *Proc. of the International Conf. on Descriptive Geometry*, Vancouver, June, 1978, *Engineering Design Graphics Journal* (1979).
14. joint with the rest of the Ad Hoc committee on Applied Mathematics Training of the National Research Council, "The role of applications in the undergraduate mathematics curriculum," National Academy of Sciences, Washington, DC, 1979.
15. Jean E. Taylor, Nonexistence of F-minimizing embedded disks, *Pacific Journal of Math* **88** (1980), 279-283. MR0607980
16. J. E. Taylor, Surface tension functions and their surfaces of least energy, *Trends in Applications of Pure Mathematics to Mechanics*, Vol .III, R.J.Knops, ed., Pitman Publ. Ltd., London (1981), 204-208.

17. Jean E. Taylor, F-minimal hypersurfaces characterize F up to a point, *Indiana University Math Jour.* **31** (1982), 789-799. MR0674868
18. J.E. Avron, J.E. Taylor, R.K.P.Zia, Equilibrium shapes of crystals in a gravitational field: Crystals on a table, *J. Stat. Phys.* **33** (1983), 493-522. MR0732374
19. Jean E. Taylor, Constructing crystalline minimal surfaces, *Annals of Math. Studies* **105**, Seminar on Minimal Submanifolds, E. Bombieri, ed. (1983), 271-288. MR0795243
20. Jean E. Taylor, Is there gravity-induced faceting in crystals?, *Astérisque* **118** (1984), 243-255. MR0761755
21. J.E. Taylor, Equilibrium shapes for grain boundaries and surfaces with anisotropic surface tension functions, in *Phase Transformations in Solids*, T.Tsakalacos, ed., Materials Research Society Symposia Proceedings **21**, Elsevier Science Publ. Co. (1984), 605-610.
22. John W. Cahn and Jean E. Taylor, A contribution to the theory of surface energy minimizing surfaces, *Scripta Metallurgica* **18** (1984), 1117-1120.
23. J.E. Taylor, Equilibrium shapes for surfaces and grain boundaries, in *Phase Transformations and Material Instabilities in Solids*, M. Gurtin, ed., Academic Press (1984), 205-213. MR080226
24. Jean E. Taylor, Complete catalog of minimizing embedded crystalline cones, *Proc. Symposia Math.* **44** (1986), 379-403. MR0840288
25. John W. Cahn and J. E. Taylor, Catalog of saddle shaped surfaces in crystals, *Acta Metallurgica* **34** (1986), 1-12.
26. Jean E. Taylor and John W. Cahn, A cusp singularity in surfaces that minimize an anisotropic surface energy, *Science* **233** (1986), 548-551. MR0853271
27. E. Bombieri and J.E. Taylor, Which distributions of matter diffract? An initial investigation, *Jour. de Physique Serie Colloques* **47** (1986), C3-19 - C3-28. MR0866320
28. Jean E. Taylor and F. Almgren, Optimal crystal shapes, in *Variational Methods for Free Surface Interfaces*, P. Concus and R. Finn, eds., Springer-Verlag, New York (1987), 1-11. MR0872883
29. Enrico Bombieri and Jean E. Taylor, Quasicrystals, tilings, and algebraic number theory: Some preliminary connections in *The Legacy of Sonya Kovalevskaya*, *Contemporary Mathematics* **64** (1987), 241-264. MR0881466
30. John W. Cahn and Jean E. Taylor, An introduction to quasicrystals, in *The Legacy of Sonya Kovalevskaya*, *Contemporary Mathematics* **64** (1987), 265-286. MR0881467
31. Jean E. Taylor, Geometric analysis in crystalline media, in *The Legacy of Sonya Kovalevskaya*, *Contemporary Mathematics* **64** (1987), 287-297. MR0881468
32. Jean E. Taylor, Some crystalline variational techniques and results, in *Théorie des Variétés Minimales et Applications* J.P. Bourguignon and H.B. Lawson, des., *Astérisque*, 154-155 (1987), pp. 307-319. MR0955071
33. R.K.P. Zia, J.E. Avron, and Jean E. Taylor, The Summertop Construction: Crystals in corners, *J. Stat. Phys.*, **50** (1988), 727-736. MR0939508

34. Jean E. Taylor, Local ellipticity of F and regularity of F minimizing currents, *Partial Differential Equations*, S.S. Chern, Ed. Springer Lecture Notes in Mathematics 1306, (1988), pp.160-173. MR1032778
35. John W. Cahn and Jean E. Taylor, Theory of orientation textures due to surface energy anisotropies, *Journal of Electronic Materials*, **17** (1988), 443-445; also appeared in *Microstructural Science for thin Film Metallizations in Electronic Applications*, J. Sanchez et al, eds., (The Metallurgical Society, 1988), 73-77.
36. J. W. Cahn and J. Taylor, Influence of equilibrium shape on heterogeneous nucleation textures, *Phase Transformations '87*, Institute of Metals, G. Lorimer ed., (1989) 545-549.
37. Marjorie Senechal and Jean E. Taylor, Quasicrystals: The View from Les Houches, *Math Intelligencer*, **12** (1990), 54-64. MR1044931
38. Jean E. Taylor, On the Global Structure of Crystalline Surfaces, *Discrete and Computational Geometry* **6** (1991), 225-262. MR1090181
39. In her own words: six mathematicians comment on their lives and careers. *Women in mathematics*. *Notices Amer. Math. Soc.* 38 (1991), no. 7, 702-706. MR1125373
40. Jean E. Taylor, Crystalline Geometric Crystal Growth, *Workshop on Theoretical and Numerical Aspects of Geometric Variational Problems*, Proc. of the Centre for Mathematics and its Applications, A.N.U. **26** (1991), 231-234. MR1139043
41. Jean E. Taylor, Motion by Crystalline Curvature, in *Computing Optimal Geometries* (Jean E. Taylor, ed.), *Selected Lectures in Mathematics*, American Mathematical Society (1991), 63-65 plus video. part of MR1164472
42. Jean E. Taylor, Constructions and Conjectures in Crystalline Nondifferential Geometry, in *Differential Geometry*, B. Lawson and K. Tenenblat, eds, *Pitman Monographs and Surveys in Pure and Applied Math* **52** (1991), 321-336. MR1173051
43. Frank Morgan and Jean E. Taylor, Destabilization of the Tetrahedral Point Junction by Positive Triple Junction Line energy, *Scripta Metall. Mater.* **25** (1991) 1907-1910.
44. John Cahn, Jean E. Taylor, and Carol A. Handwerker, Evolving crystal forms: Frank's characteristics, revisited, in *Sir Charles Frank OBE, FRS: An eightieth birthday tribute*, R. G. Chambers et al, ed., Adam Hilger, Bristol, 1991, 88-118.
45. Jean E. Taylor, Calculus of Variations, in *McGraw Hill Encyclopedia of Science and Technology*, 7th edition (1992), 151-153. MR1144350
46. Jean E. Taylor, Zonohedra and Generalized Zonohedra, *Amer. Math. Monthly* **99** (1992), 108-111. MR1144350
47. Jean E. Taylor, John Cahn and Carol Handwerker, Geometric Models of Crystal Growth. *Acta Metall. Mater.* **40**(1992), 1443-1474.
48. Jean E. Taylor, Mean curvature and weighted mean curvature, *Acta Metall. Mater.* **40** (1992), 1475-1485.
49. Andrew Roosen and Jean E. Taylor, Simulation of Crystal Growth with Facetted Interfaces, in *Interface Dynamics and Growth*, *Mat. Res. Soc. Symp. Proc.* **237** (1992), 25-36.

50. Jean E. Taylor, Geometric Crystal Growth in 3D via Faceted Interfaces, in Computational Crystal Growers Workshop (Jean E. Taylor, ed.), Selected Lectures in Mathematics, American Mathematical Society (1992), 111-113 plus video 20:25-26:00. part of MR1173051
51. Fred Almgren, Jean Taylor and Lihe Wang, A variational approach to motion by weighted mean curvature, in Computational Crystal Growers Workshop, Selected Lectures in Mathematics, Amer. Math. Soc. (1992), 9-12. part of MR1173051
52. joint with the rest of the Committee on the Mathematical Sciences Applied to Materials Science, "Mathematical Research in Materials Science," Board of Mathematical Sciences, National Research Council, National Academy Press, 1993.
53. Fred Almgren, Jean Taylor and Lihe Wang, Curvature Driven Flows: A Variational Approach, SIAM Journal of Control and Optimization **31**(1993),386-437.MR1205983
54. Jean E. Taylor, Motion of curves by crystalline curvature, including triple junctions and boundary points, Differential Geometry, Proceedings of Symposia in Pure Math. **51** (part 1) (1993), 417-438. MR1216599
55. Andrew Roosen and Jean E. Taylor, Modeling Crystal Growth in a Diffusion Field Using Fully-Faceted Interfaces, J. Computational Physics **114**(1994),113-128.MR1286190
56. Jean E. Taylor and J. W. Cahn, Linking Anisotropic Sharp and Diffuse Surface Motion Laws via Gradient Flows, J. Stat. Phys. **77** (1994), 183-197. MR1300532
57. J.W. Cahn and J.E. Taylor, Surface Motion by Surface Diffusion, Acta Metall. mater. **42** (1994), 1045-1063.
58. Jean E. Taylor, The motion of multiple-phase junctions under prescribed phase-boundary velocities, J. Diff. Eq. **119** (1995), 109-136. MR1334489
59. Fred Almgren and Jean E. Taylor, Flat flow is motion by crystalline curvature for curves with crystalline energies, J. Differential Geometry **42** (1995), 1-22. MR1350693
60. Jean E. Taylor, book review of Wulff Construction, A Global Shape from Local Interaction, by R. Dobrushin, R. Kotecky, and S. Shlosman, Bull Amer. Math. Soc. **31** (1994), 291-296.
61. Craig Carter, Andrew Roosen, John Cahn, and Jean E. Taylor, Shape evolution by surface diffusion and surface attachment limited kinetics on completely faceted surfaces, Acta Metal. Mater. **43** (1995), 4309-4323.
62. Jean E. Taylor, Surface motion due to surface energy reduction, Notices of the AMS **42** (1995), 38-40.
63. Jean E. Taylor, The Composition of the Council of the AMS, Forum, Notices of the AMS **42** (1995), no. 10, 1148-1152.
64. Jean E. Taylor, What's Happening in Washington, and What Can We Do About It?, Forum, Notices of the AMS **42** (1995), no. 9.
65. Fred Almgren and Jean E. Taylor, Optimal geometry in equilibrium and growth, Fractals **3**(4) (1995), 713-723. Also appeared in Fractal Geometry and Analysis: The Mandelbrot Festschrift, Curacao 1995. MR1410290

66. Jean E. Taylor, Surface motion due to crystalline surface energy gradient flows, in *Elliptic and Parabolic Methods in Geometry*, A. K. Peters, Wellesley, 1996, 145-162. MR1417953
67. Jean E. Taylor, Anisotropic Interface Motion, in *Mathematics of Microstructure Evolution*, Edited by Long-Qing Chen, Brent Fultz, John W. Cahn, John R. Manning, John E. Morral and John Simmons, TMS/SIAM, Warrendale, PA, EMPMD Monograph Series **4** (1996), 135-148.
68. John W. Cahn and Jean E. Taylor, Thermodynamic driving forces and equilibrium in multicomponent systems with anisotropic surfaces, in *Mathematics of microstructure evolution*, Edited by Long-Qing Chen, Brent Fultz, John W. Cahn, John R. Manning, John E. Morral and John Simmons, TMS/SIAM, Warrendale, PA, EMPMD Monograph Series **4** (1996), 149-159.
69. Fred Almgren and Jean E. Taylor, Soap Bubble Clusters, *Forma* **11**, No. 3 (1996), 199-207, and reprinted in book form in *The Kelvin Problem*, Denis Weare, ed., Taylor and Francis Ltd., London, 1996, 37-45. MR1487207
70. Jean E. Taylor, Thermodynamic Driving Forces and Anisotropic Interface Motion, *JOM* **48**, No.12 (1996), 19-22. (JOM is the monthly publication for members of TMS, The Minerals, Metals & Materials Society.)
71. Jean E. Taylor, Joy in Everything, *Experimental Mathematics* **6**, 1997. part of MR1464578
72. Conversations with the Community: AAAS at the Millennium (by Sheila Jasanoff, Rita Colwell, Mildred S. Dresselhaus, Robert D. Goldman, M.R.C. Greenwood, Alice S. Huang, William Lester, Simon A. Levin, Marcia C. Linn, Jane Lubchenco, Michael J. Novacek, Anna C. Roosevelt, Jean E. Taylor, Nancy Wexler), *Science* **278** (1997), 2066-2067.
73. Jean E. Taylor, Calculus of Variations, in *McGraw Hill Encyclopedia of Science and Technology*, 8th edition (1997)(expansion of previous entry).
74. Jean E. Taylor and John W. Cahn, Diffuse Interfaces with Sharp Corners and Facets: Phase Field Modeling of Strongly Anisotropic Surfaces, *Physica D*, **112** (1998), 381-411.
75. W. Craig Carter, Jean E. Taylor, and John W. Cahn, Variational Methods for Microstructural Evolution, *JOM* **49**, no. 12 (1997), 30-36.
76. Mathematical Thinking through Workplace and Everyday Mathematics, in *High School Mathematics at Work*, National Academy Press, Washington DC, 1998, 30-34.
77. Jean E. Taylor, Motion by Weighted Mean Curvature is Affine Invariant, *Journal of Geometric Analysis*, *J. Geom. Anal.* **8** (1998), 859-864. MR1731066
78. Jean E. Taylor and Sylvia M. Wiegand, AWM in the 1990s: A Recent history of The Association for Women in Mathematics, *Notices of the Amer. Math. Soc.*, Volume 46 no. 1 (January 1999), 27-38. An expanded version of this article is also available on the web at <http://www.awm-math.org>. MR1658878
79. Jean E. Taylor, A Variational Approach to Crystalline Triple Junction Motion, *J. Statistical Physics* **95** (1999) 1221-1244. MR1712448

80. Jean E. Taylor, An introduction to: A Vector Thermodynamics for Anisotropic Surfaces by David W. Hoffman and John W. Cahn and A Vector Thermodynamics for Anisotropic Surfaces II. Curved and Faceted Surfaces by J. W. Cahn and D. W. Hoffman, in The Selected Works of John W. Cahn, W. Craig Carter and William C. Johnson, ed., TMS (Warrendale, Pa) 1998, pp. 289-292.

81. Jean E. Taylor, editor: Selected Works of Frederick J. Almgren, Jr., American Mathematical Society, 1999. MR1747253

82. Jean E. Taylor, Mathematical Models of Triple Junctions, Interface Science **7** (1999), 243-250.

83. Vladimir Scheffer and Jean E. Taylor, preface and editors: Frederick J. Almgren, Q -valued functions minimizing Dirichlet's integral and the regularity of area minimizing rectifiable currents up to codimension two, preprint (1984), 1720 pages; World Scientific Press, 2000. MR1777737

84. Jean E. Taylor, Some recent results in the crystalline calculus of variations, in Colloquium Lectures, Ed. by K. Ono and N. Honda, Hokkaido University Technical Report Series in Mathematics, Series 63 (2000), 36-37.

85. Jean E. Taylor, forward to the AMS Edition of Plateau's Problem: an Invitation to Varifold Geometry, by Frederick J. Almgren, Jr. (AMS, Providence, 2001). MR1853442

86. Jean E. Taylor, Crystalline variational methods, PNAS **99** (2002), 15277-15280. MR1946763

87. Jean E. Taylor, Some Mathematical Challenges in Materials Science, Bull Amer Math Soc. **40** (2002) 69-87. MR1943134

88. John W. Cahn and Jean E. Taylor, A unified approach to motion of grain boundaries, relative tangential translation along grain boundaries, and grain rotation, Acta Mater. **52** (2004) 4887-4898.

89. Jean E. Taylor, Soap Bubbles and Crystals, Proceedings of the Canadian Mathematics Education Study Group, 2005.

90. Jean E. Taylor, Soap Bubbles and Crystals, Resonance journal of science education **11** no. 6 (2006), 26-30 (Cyril Smith issue).

91. John W. Cahn and Jean E. Taylor, Metrics, measures, and parametrizations for grain boundaries: a dialog, Journal of Materials Science **41** (2007) 7669-7674.

92. Jean E. Taylor and John W. Cahn, Shape Accommodation of a Rotating Embedded Crystal Via a New Variational Formulation, Interfaces and Free Boundaries **9** (2007), 493-512.

93. Marjorie Senechal and Jean E. Taylor, Quasicrystals: The View from Stockholm, The Mathematical Intelligencer **35**(2) (2013), 1-9.

93. Jean E. Taylor, Dissipation and variational principles, including gradient flows, nonlinearity, and entropy, preprint.

Essays (in addition to 39, 63, 64, 71, 76 above)

Jean E. Taylor, Essay and math problems in She Does Math! Marla Parker, Ed., MAA, 1995.

Jean E. Taylor, My Experience with the Two Body Problem, in Starting Our Careers, Curtis D. Bennett and Annalisa Crannell, Eds., Amer. Math. Soc. (Providence) 1998, p. 12.

Jean E. Taylor, Participation in the AMS, in Starting Our Careers, Curtis D. Bennett and Annalisa Crannell, Eds., Amer. Math. Soc. (Providence) 1998, pp. 102-103.

Jean E. Taylor, Frederick Justin Almgren, 1933-1997, The Journal of Geometric Analysis **8** (1998), 679-680.

Jean E. Taylor, On Knowing Benoit Mandelbrot, Proc. Symp. Pure Mathematics **72** (2004), 63.

Jean E. Taylor, The Real Message from the Forum, AWM Newsletter **25** no.6 (1995), p. 10.

Jean E. Taylor, Joan Birman Conference Report, AWM Newsletter **28** no.3 (1998).

Marjorie Senechal and Jean E. Taylor, Sexual Harassment, AWM Newsletter **22** no. 1 (1992).

Jean E. Taylor, President's Report, AWM Newsletter **29** no. 2 (March/April 1999), 1-3. (topic: hello, and status of AWM)

Jean E. Taylor, President's Report, AWM Newsletter **29** no. 3 (May/June 1999), 1-4. (topic: girls and math competitions)

Jean E. Taylor, President's Report, AWM Newsletter **29** no. 4 (July/August 1999), 1-4. (topic: AMW and K-12 education)

Jean E. Taylor, President's Report, AWM Newsletter **29** no. 5 (September/October 1999), 1-3. (topic: panel topic to be increasing the number of women in math depts)

Jean E. Taylor, President's Report, AWM Newsletter **29** no. 6 (November/December 1999), 1-3 (topic: new programs, including AWM-AAAS student scholars)

Jean E. Taylor, President's Report, AWM Newsletter **30** no. 1 (January/February 2000), 1-3. (topic: AWM accomplishments)

Jean E. Taylor, President's Report, AWM Newsletter **30** no. 2 (March/April 2000), 1-4. (topic: PACOM and other events)

Jean E. Taylor, President's Report, AWM Newsletter **30** no. 3 (May/June 2000), 1-2. (topic: AWM Scholars at AAAS annual meeting)

Jean E. Taylor, President's Report, AWM Newsletter **30** no. 4 (July/August 2000), 1-3. (topic: activities)

Jean E. Taylor, President's Report, AWM Newsletter **30** no. 5 (September/October 2000), 1-4. (topic: assorted events concerned women in mathematics; federal funding)

Jean E. Taylor, President's Report, AWM Newsletter **30** no. 6 (November/December 2000), 1-3.

Jean E. Taylor, President's Report, AWM Newsletter **31** no. 1 (January/February 2001), 1-4.

Publicly Available Video Tapes

V1. Jean E. Taylor, Crystals, in equilibrium and otherwise, A joint AMS-MAA lecture presented in Boulder, CO 1989. AMS-MAA Joint Lecture Series. American Mathematical Society, 1990. 1 videocassette (NTSC; 1/2 inch; VHS) (60 min.) MR1109716

V2. joint with Minimal Surface Team of the Geometry Supercomputer Project, Computing soap bubbles and crystals, in Computing Optimal Geometries video tape, Jean E. Taylor, ed., Selected Lectures in Mathematics, Amer. Math. Soc. 1991. part of MR1164472

V3. Motion by Crystalline Curvature, in Computing Optimal Geometries video tape, Jean E. Taylor, ed., Selected Lectures in Mathematics, Amer. Math. Soc. 1991. part of MR1164472

V4. Geometric Crystal Growth in 3D via Faceted Interfaces, in Computational Crystal Growers Workshop Video tape, Jean E. Taylor, ed., Selected Lectures in Mathematics, Amer. Math. Soc. 1992. part of MR1224452

V5. W. Craig Carter, Andrew R. Roosen, John W. Cahn, Jean E. Taylor, Surface diffusion and surface attachment limited kinetics. 1995. Available by request from the Center for Theoretical and Computational Materials Science, NIST, Gaithersburg MD 20899.

V6. Women in mathematics: 1969 versus 1999. Lecture given March 22 1999 at The College of New Jersey as part of its Women in Science month. Available by request from The College of New Jersey, or from the Association for Women in Mathematics.

Some interviews with me and articles about me

I1. Donald J. Albers, Still questioning authority: an interview with Jean Taylor. College Jath. J. 27 (1996), no 4, 250-266. MR1412189. To be republished in the next version of MAA's Mathematical People series.

I2. Robert Kanigel, Math Horizons cover story, MAA, September 1994

I3. Robert Kanigel, The Sciences May/June 1993.