Curriculum Vita

May 17, 2011

1 Personal Data

1. **Name**: David Lewis Johnson
2. **Date of Birth:** February 5, l951.
3. **Citizenship:** U. S.
4. **Current Address:**

   - Department of Mathematics
     Lehigh University
     14 E. Packer Avenue
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5. **Education:**

   (a) **University of California, Berkeley,** 1969-1973.
   A. B. Degree Received: June, 1973 (with honors)
   Major Subject: Mathematics

   (b) **Massachusetts Institute of Technology**, 1973-1977
   Ph. D. Degree Received May, 1977
   Major Subject: Mathematics
   Thesis Adviser: Isadore M. Singer
   Thesis Title: *A normal form for curvature*

6. Society Memberships

   - American Mathematical Society.

2 Professional Employment:

1. **9/84 - present** Lehigh University, Associate Professor, (tenured 1986)
2. **1/08-6/08** Professor Invitado, Universitat de València, Valencia, Spain.
3. **1/92 - 6/92** University of Pennsylvania, Visitor
4. **9/83 - 8/84** Texas A & M University, Associate Professor
5. **9/77 - 8/83** Texas A & M University, Assistant Professor
6. **1/80 - 7/80** Rice University, Visiting Assistant Professor

3 Publications:

3.1 Published in refereed professional journals:

1. *Totally geodesic foliations on 3-manifolds*, (with L. B. Whitt), Proc. Amer. Math. Soc. **76** (1979), 355-357. MR0537106
2. *Sectional curvature and curvature normal forms,* Michigan Math. J. **27** (1980), 275-294. MR0584692
3. *Kähler submersions and holomorphic connections*, J. D. Geo. **15** (1980), 71-79 MR0602440
4. *Totally geodesic foliations*, (with L. B. Whitt), J. Diff. Geo. **15** (1980), 225-235. MR0614368
5. *A curvature normal form for 4-dimensional Kähler manifolds*, Proc. Amer. Math. Soc., **79** (1980), 462-464. MR0567993
6. *A topological obstruction to the geodesibility of a foliation of odd dimension*, (with A. M. Naveira), Geometria Dedicata, **9** (1981), 347-352. MR0627536
7. *Curvature and Euler characteristic for six-dimensional Kähler manifolds*, Illinois J. Math., **28** (1984), 654-675. MR0761996
8. *Secondary characteristic classes and intermediate Jacobians*, Journal für die reine und angw. Math. **347** (1984), 134-145. MR0733048
9. *Volumes of flows*, Proc. AMS **104** (1988), 923-931. MR0964875
10. *Regularity of volume-minimizing graphs*, (with P. Smith), Indiana University Mathematics Journal, 44 (1995), 45-85. MR1336432
11. *Locally volume-minimizing codimension-one foliations of* S^3, (with Ismail Kocayusufoglu), Algebras, Groups and Geometry, **15** (1998), 145-164. MR1700249
12. *Locally volume-minimizing codimension-one foliations of the solid torus*, (with Ismail Kocayusufoglu), Turkish Journal of Mathematics, **22** (1998), 207-222. MR1651030

13. *Some Sharp Isoperimetric Theorems for Riemannian Manifolds* (with Frank Morgan). Indiana University Mathematics Journal, **49** (2000), 1017-1042. MR1803220

14. *Volume-minimizing foliations on spheres,* (with F. Brito), Geom. Dedicata **109** (2004), 253-267. MR2114079

15. *Partial regularity of mass-minimizing rectifiable sections*, (with Penny Smith), Annals of Global Analysis and Geometry **30** (2006), 239-287. MR2256525 IF1.036

    - Extends and completes the analysis of fundamental partial regularity results for mass-minimizing rectifiable sections of bundles. In particular, this paper fills a gap in the proof of the partial-regularity result of *Regularity of volume-minimizing graphs.*

16. *Chern-Simons forms on associated bundles, and boundary terms,* Geometria Dedicata **120** (2007), 23-34. MR2350146

    - Let E be a principle bundle over a compact manifold M with compact structural group G. For any G-invariant polynomial P, The transgressive forms $TP(\omega)$ defined by Chern and Simons are shown to extend to forms $\Phi P(\omega)$ on associated bundles B with fiber a quotient $F = G/H$ of the group. These forms satisfy a heterotic formula

      $$d\Phi P(\omega) = P(\Omega) - P(\Psi),$$

      relating the characteristic form $P(\Omega)$ to a fiber-curvature characteristic form. For certain natural bundles B, $P(\Psi) = 0$, giving a true transgressive form on the associated bundle, which leads to the standard obstruction properties of characteristic classes as well as natural expressions for boundary terms.

17. *Regularity of volume-minimizing flows on 3-manifolds*, (with P. Smith), Annals of Global Analysis and Geometry **33** (2008), 219-229. MR2390831

18. *Unit flows on punctured spheres: big index, big volume* (with P. Chacón and F. Brito), Bulletin de la Société Mathématique de France **136** (1), 2008, 147-157. MR2415338

    - This article gives lower bounds on the volume (mass of the graph) of singular flows, sections of the unit tangent bundle, for the round 2 and 3-dimensional spheres. Bounds are given in terms of the index of the singularity, providing the first instance in this area where the topology of the (singular) section has an impact on the minimal mass within a given homology class of such sections.

19. *Singularity formation of Embedded Curves Evolving on Surfaces by Curvature Flow* (with M. Muraleetharan), Int. J. Pure Appl. Math. Volume 61, No. 2 (2010), 121-146. MR2668967

20. *Minimal surfaces in circle bundles over Riemann surfaces,* (with P. Chacón), Bull. London Math. Soc., **43**(1) (2011), 33-43.

- This paper uses the general theory developed by myself and Smith to construct, for any 3-manifold which is a circle bundle over a Riemann surface, a smooth minimal surface which is a section of the bundle except over finitely many exceptional points. Ad-hoc techniques are used to show that the exceptional points still form a smooth surface; the minimal surface is topologically the base surface with a cross-cap for each exceptional point. This problem was suggested by Antonio Ros. These results were obtained during my sabbatical stay in Spain and France, in 2008.

21. *Minimal tori with low nullity*, with Oscar Perdomo, Journal of Mathematical Analysis and Applications, **380** (2011), 163-176.

    - The main result of this paper is an explicit construction of all minimal immersions of the plane in S^3 (including all minimal immersions of tori) which have some natural symmetry, in that the null directions of the second variation of the area functional is smaller than expected from the action of the 6-dimensional group of ambient isometries of S^3 and a 2-dimensional space that is naturally defined for such immersions. We also show that all known examples of minimal immersions of the torus in S^3 are instances of this construction.

3.2 Published in refereed conference proceedings

1. *Deformations of totally geodesic foliations*, Geometry and Topology: Manifolds, Varieties, (Proc., 1985 Georgia Topology Festival), C. McCrory and T. Shifrin, editors, (1987), 167-178. MR0873293

2. Regularity of mass-minimizing one-dimensional foliations (with P. Smith), conference proceedings of the Seventh International Congress on Differential Geometry, Santiago de Compustela, Spain, 1995. MR1414197

4 Grants and Contracts:

4.1 Competitively Awarded Research Grants

1. Short-term travel grant from the Universidad de Valencia, June, l979, $2,000.

2. Short-term travel grant from the Comite Conjunto Hispano-Norteamericano para la Cooperacion Cientifica y Tecnologica, for travel to Valencia, May, l980, $3,000.

3. College of Science Grant, Texas A & M Univ., June, l980, $5,000.

4. National Science Foundation Grant MCS-8002769, July, 1980 - June, 1982, approximately $20,000.

5. Short-term travel grant from the Comite Conjunto Hispano-Norteamericano para la Cooperacion Cientifica y Tecnologica, for travel to Valencia, May -June, 1983, $4,000.

6. Joint U. S.-Spanish workshop grant to hold a research workshop entitled Special Geometric Structures, May 30 -June 1, 1985, Valencia, Spain. Approximately $20,000.

7. Travel grant from the University of Sao Paulo, Brazil, to deliver a series of lectures and work with mathematicians at USP, October, 1997, $5,000.

8. National Science Foundation grant to study Complex Systems theory. This is a two-year planning grant, under the direction of Mark Bickhard, in Cognitive Science, Jean Toulouse, in Physics (PI's for the grant), Jim Gunton and Daniel Hong in Physics, Jennifer Swann and Neal Simon in Biology, and myself (all listed as co-PI s on the grant), to further research in complex systems theory at Lehigh University. Approximately $10,000.

9. National Science Foundation grant to support the Lehigh University Geometry/Topology conference. NSF funding to be used to provide partial support for young investigators to attend the conference. Co-PI with Susan Szczepanski and Don Davis. Two-year grant awarded for 2003-2005, $20,104 renewed for 2005-2007, $32,000 and 2008-2009, $32,000.

10. Travel grant from the Universitat de València for research with Prof. Olga Gil-Medrano during Spring, 2008. $15,000.

11. National Science Foundation grant to support an International Symposium in Geometry and Topology at Lehigh University, in honor of C.-C. Hsiung. NSF funding to be used to provide partial support for young investigators to attend the conference. Co-PI with Huai-Dong Cao. Two-year grant awarded for 2010-2012, $36,300.

4.2 Competitively Awarded Training (pedagogical) grants

1. Hughes Foundation grant to improve the education of biological science students. Member of the group headed by Jeff Sands of the biology department. Mathematics Department portion of the grant ($40,000) to design a precalculus and calculus computer-based tutorial program. Grant period: 1989-1994.

2. Grant from the Charles F. Dana Foundation for the development of calculus workshops, using a model developed by Uri Treisman at the University of California, Berkeley. Project Director was Susan Szczepanski, 1991-1995. $30,000.

3. Mathematics faculty member, Integrated Mathematics and Science Teaching Institute (IMAST), a three-year institute for integrating the teaching of mathematics and science in grades K-12, funded through the Commonwealth Partnership. Project Director is Steven Krawiec, 1994-1997. Mathematics budget was approximately $40,000.

4. Mellon Foundation grant (Clipper project) to evaluate the effectiveness of Web-based instruction. As a cooperative effort with faculty from Education, Chemistry, English, Engineering, and Economics (as well as Mathematics), we developed course materials for basic first-year courses, offering them to students who had been admitted to Lehigh but who have not yet enrolled (primarily those who have accepted early admission offers). They took legitimate Lehigh courses in these subjects, for credit, thus freeing their schedules to allow them to take more advanced courses while in residence. We also evaluated their progress, in comparison with traditional Lehigh students and with current Lehigh students taking the courses on-line. A planning grant was awarded in June, 1999, and the full 5-year grant was awarded beginning in December, 1999. The PI of the grant was Steve Bronack of the

College of Education. Total budget was $1.2 million, mathematics portion was in excess of $60,000.

4.3 Equipment grants

1. Lehigh University computer rollover grant, with Lee Stanley and Clifford Queen, to purchase new computing equipment, 1990. $4,000.

2. College of Arts and Science award, disbursing a Commonwealth of Pennsylvania block grant, for computer equipment to improve instruction in calculus, 1990, $10,000.

5 Scholarly presentations:

5.1 Invited Presentations:

1. *Feuilletagès totalment géodesiques (4 lectures)*, and *Classification des éspaces fibrés vectoriels* (3 lectures), Universidad de Valencia, June, 1979.

2. *Volumes of foliations*, Rutgers University, October, 1987.

3. *Topological Obstructions to the Existence of a Totally Geodesic Foliation*, University of Pennsylvania, February, 1992

4. *Regularity of volume-minimizing foliations*, Seventh International Congress on Differential Geometry, Santiago de Compustela, Spain, July, 1994

5. *Volume-minimizing graphs*, University of Sao Paulo, Brazil, October, 1997 (series of 3 lectures).

6. *Volume-minimizing Cartesian currents*, IMPA, Rio de Janiero, Brazil, October, 1997.*Characteristic forms and boundary integrals*, Lehigh, March 24, 1999.

7. *Isoperimetric Inequalities*, Universidad de Valencia, Spain, at an international conference in honor of Antonio M. Naveira, July, 2001.

8. *Minimal surfaces versus minimal graphs*, Millersville University, February 4, 2005.

9. *Mass-minimizing sections of bundles*, TGTS, February 4, 2005

10. *Transgressions and boundary terms*, Lehigh-Lafayette Geometry Seminar, September 19, 2006.

11. *Partial regularity of mass-minimizing rectifiable sections*, University of Pennsylvania Geometry Festival, May 1, 2007.

12. *Characteristic forms and boundary terms,* Lehigh University Mathematics colloquium, October 31, 2007.

13. *Evolution by curvature*, Osmangazi University, Eskisehir, Turkey, March 4, 2008.

14. *Evolution by curvature*, Dumlupinar University, Kutahya, Turkey, March 6, 2008.

15. *Minimal immersions of tori in S^3,* Universidad de Granada, Spain, April 1, 2008.

16. *Volume-minimizing vector fields and optimal geometry*, Universidad de Salamanca, Spain, April 14, 2008.

17. *Volume-minimizing vector fields and optimal geometry*, Universidad de Murcia, Spain, May 8, 2008.

18. *Volume-minimizing vector fields and optimal geometry*, Universitat de València, Spain, May 27, 2008.

19. *Volume-minimizing vector fields on spheres,* Lehigh University Mathematics colloquium, October 14, 2009.

5.2 Refereed Lectures

1. *Curvature and Euler characteristic of six-dimensional Kähler manifolds*, AMS annual meeting, Biloxi, Mississippi, January, 1979, in the special session on global differential geometry

2. *An obstruction to the geodesibility of a foliation of odd dimension*, AMS annual meeting, San Antonio, Texas, January, 1980, in the special session on minimal submanifolds

3. *Secondary characteristic classes of flat holomorphic vector bundles*, AMS meeting in East Lansing, Michigan, November, 1982, in the special session on the geometry of foliations

4. *Action of the automorphism group of a hermitian symmetric space on vector bundles*, 1984 Joint Summer Research Conference on Integral Geometry, August, 1984.

5. *Geometry of foliations*, Joint U. S.-Spanish workshop Special Geometric Structures, Valencia, Spain, May 30 - June 1, 1985

6. *Deformations of totally geodesic foliations*, Georgia Topology Festival, August, 1985.

7. *Volumes of flows*, AMS Annual Meeting, San Antonio, January, 1987.

8. *Variational Problems in Differential Geometry*, AMS Regional Meeting, Albuquerque, New Mexico, April, 1990

5.3 Organized or chaired sessions

1. U. S. organizer, Joint U. S. - Spanish workshop Special Geometric Structures, Valencia, Spain, May 30 - June 1, 1985 Sponsored by the Comite Conjunto Hispano-Norteamericano para la Cooperacion Cientifica y Tecnologica, and NSF.

2. AMS regional meeting, Bethlehem, PA, April 11-12, 1992 Organizer, special session in geometric analysis.

6 Teaching and Research Advising

6.1 Courses taught

1. Project Interphase, pre-freshman introductory course for disadvantaged students, MIT, 1976, 1977.
2. 18.01X, special section of first semester Freshman calculus for students requiring extra time, 1976 (instructor).
3. Challenge for Success, pre-freshman introductory course for minority students, Lehigh, 1985, 1986.
4. Engineering/Science Calculus, Texas A &M Univ., Rice Univ., Lehigh Univ, 1977-
5. Differential Equations; TAMU, Lehigh, various times.
6. Linear Algebra; TAMU, Lehigh, various times.
7. Advanced Engineering Mathematics (graduate); TAMU, various times.
8. Complex Variables; TAMU, Lehigh, (undergraduate and graduate) various times.
9. Real Analysis (undergraduate); TAMU, Lehigh, various times.
10. Basic Algebra; TAMU, various times.
11. Precalculus, Trigonometry; TAMU, various times. Lehigh, Summer '96 and '97.
12. Abstract Algebra; Rice, 1980.
13. Synthetic Geometry (undergraduate, for secondary education majors), TAMU.
14. Differential Geometry (undergraduate); TAMU, various times.
15. Differential Geometry (graduate); Lehigh, various times, developed current course content.
16. Geometric Measure Theory (graduate): Lehigh, Spring, 1998.
17. Freshman Seminars, Lehigh, F '97, Sp '99, F '05, F '11. Arts and Science 1 (or equivalent) as an adjunct of these seminar groups, and twice without a seminar attached.
18. Honors calculus, Lehigh, Sp '00, F '06, Sp '07, F '07
19. On-line Math 21, Lehigh, Spring 2001, Summer, 2001, Spring 2002, Spring, 2003. Experimental Web-based version of first-semester calculus, as part of a grant from the Mellon Foundation, known as the *Clipper Project*.
20. On-line Math 21, Lehigh, Summer, 2003. Web-based version of first-semester calculus, as a regular course offering.

6.2 Independent Study

I have offered various independent study courses over the years, including differential geometry, both undergraduate and graduate, geometric measure theory, and vector calculus "bridge" courses completing the gaps in student preparation. Offerings include

1. Differential geometry and analysis on manifolds, Matt Judell, Fall 2007.
2. Topics in geometry, Spring, 2006
3. Geometric measure theory, Izzy Kyle, Spring 2000
4. Undergraduate differential geometry, David Manning and Kendra Ferraro, Spring 2000
5. Graduate differential geometry, Chris Yarrish, Fall, 1999.
6. Graduate differential geometry, Tom Shimkus, Fall 1997-Spring 1998.

6.3 New Courses Developed:

1. Differential Geometry (undergraduate), TAMU. Introduced new course covering traditional differential geometry of curves and surfaces, for mathematics majors.
2. Differential Geometry (Math 423-424), 1984–present. Changed content of the course to reflect more current research in the subject.
3. Calculus with Computers (Math 95, 97, 96), 1991, 1992–3. Developed computer-based curriculum and exercises for freshman calculus, using Mathematica (1991), and Maple (1992-1994). Developed help system and on-line lecture notes, in the Xwindows environment.
4. Workshop Calculus (Math 97–98). Participated in development of workshop materials, taught and directed the course in the Spring of 1993.
5. On-line calculus, (Math 21) 2000-2003. As a part of a 5-year Mellon Foundation grant, developing a Web-based version of the first-semester calculus course to offer to high-school students who have been admitted to Lehigh for the following Fall. Also taught on-line Math 21 Summer 2004 as a regular Lehigh offering.

7 Advising – research direction.

7.1 Undergraduate

1. Undergraduate research program, Summer, 2011. Directing research of Jingxuan Liu in optimization, specifically trying to analyze the double-bubble conjecture, proven for two regions in space by Frank Morgan. Our focus will be to investigate a related free-boundary problem, for bubbles sitting on a surface. This is a subtle problem in geometric measure theory, but we hope to be able to verify the analogue of the double-bubble theorem in the case of equal volumes.

7.2 Masters

1. Chairman, MS committee of Vincent E. Coll, Jr., 1982-1984. Student went on to further graduate work at Tulane University, then a Ph. D at the University of Pennsylvania. Was an assistant professor at Ursinus College, now president of a software firm and an adjunct instructor at Lehigh Univ.

7.3 Doctorate

1. Chairman, Ph. D. Committee of Carla A. Schultes (née Nelson) (completed, 5/91) Went on to become an assistant and associate professor at Salsbury State College, MD, but left the profession.

2. Chairman, Ph. D. Committee of Ismail Kocayusufoglu (completed, 10/93) Currently professor of mathematics in Turkey.

3. Chairman, Ph. D. Committee of Tracy Bowers (completed, 6/02). Went on to be an assistant professor at Muhlenberg College, Allentown, PA. Currently working in the software industry.

4. Chairman, Ph. D. Committee of Murugiah Muraleetharan, 2003 – 2006. (completed June, 2006). Went on to a post-doc at the Mathematical Sciences Research Institute, Berkeley, CA, Lehigh as a visiting instructor, and currently has a post-doc at the University of California, Irvine.

5. Chairman, Ph. D. Committee of Christopher Godbout, 2005 – 2010 (completed June, 2010).

6. Chairman, Ph. D. Committee of Cuneyt Ferahlar, 2006 – present.

7. Member, Ph. D. committee of Huajian Wang, 1993-1995

8. Member, Ph. D. committee of Xiaoxue Li, 2006-2007. Currently an assistant professor in West Virginia.

9. Member, Ph. D. committee of Meng Zhu, 2010 – present.

10. Member of several M.S. and Ph.D. committees for students in the College of Engineering and Applied Science, Lehigh.

11. Member of the Ph.D. committee of Jeff Spirko, Department of Physics, Lehigh, 1997 - 2003. Still at Lehigh.

8 Professional Service:

8.1 University service

1. Member, University computer policy committee, 1990 - 2001

2. Member, University Software Subcommittee, 1993 -1996.

3. Member, University Software Committee, 1996 - 2003
4. Member, Recognition team, 1995.
5. Member, Southside "Front Runner" working group, 2010.

8.2 College service

1. Member, College of Arts and Science Committee on Undergraduate Sciences at Lehigh, 1988 - 1990
2. Member (secretary 1990-91), College of Arts and Sciences Policy Committee, 1990-1993.
3. Member Arts and Sciences College committee on distribution requirements, 1998 - 1999.
4. Member, College of Arts and Sciences Policy Committee, 2003-2006
5. Co-chair, College of Arts and Sciences Policy Committee, 2005-2006 academic year.
6. Non-major adviser, College of Arts and Science,1989 - 1991, 1999 - 2003, 2005-2007, 2008-present
7. Member, College of Arts and Sciences Policy Committee, 2009-2010, 2010-2013.
8. Chairman, College of Arts and Sciences Policy Committee, 2010-2011, 2011-2012.

8.3 Departmental service

1. Co-chair, calculus innovation group, 1988 - 1996.
2. Chairman, calculus committee, l984 - 1985, 1987 - 1990
3. Pure mathematics representative, graduate committee, 1985 - 87
4. Member, chairman's advisory committee, 1985 - 1986, 1994 - 1998, 2005-2006,
5. Co-chair (w/Lee Stanley), Calculus Curriculum Development Oversight Committee, 1990 - 1994
6. Chairman, Post-Calculus Committee, 1998-2001, a liaison committee with various client disciplines to determine effectiveness of post-calculus service courses, and to recommend improvements in those courses to better meet the needs of these service departments.
7. Member, departmental calculus committee, 1985 - 1986, 1998-present (Chair, 2001).
8. Member, Chairman's advisory committee, 2005-2007, 2008-2009, 2009-2010, 2010-2011
9. Transfer credit approval, 2005-2008.
10. Offered reviews for Mathematics Comprehensive Exam, for each year, 1988–2011, except 1992 and 2008, when on sabbatical leave.

8.4 Seminars run:

1. Atiyah-Singer Index Theorem, Spring, 1979
2. Vector bundles over projective spaces (w. P. Stiller), Fall, 1980
3. Geometry and characteristic classes, Fall, 1981
4. Vector bundles, Spring, 1985
5. Foliations, Sp. 1986
6. Topics in Geometry (Curvature and characteristic classes), Fall, 1987.
7. Geometry Seminar, Fall, 1988, 1991 Spring, 1989, 1990, 1993 –1994, 1994–1995, 1996–1997, 1998-1999, 2004-present.
8. Lehigh-Lafayette Geometry Seminar, 1999-2005

8.5 Conferences run:

1. Lehigh Univ., Geometry and Topology Conference Co-organizer, with D. Davis and C-C Hsiung.
   (a) May 23 - 24, 1986,
   (b) May 21 - 23, 1987,
   (c) May 27 - 29, 1988,
   (d) May 25 - 27, 1989,
   (e) May 23 - 25, 1991,
   (f) June 9 - 11, 1994
   (g) June 8 - 10, 1995
   (h) June 19-21, 1997
   (i) June 11-13, 1998
   (j) June 11-13, 2000
   (k) June 14-16, 2001
   (l) June 12-14, 2003
   (m) June 10-12, 2004
   (n) June 8-10, 2006
   (o) October 6-8, 2007
   (p) June 4-6, 2009
2. International Symposium on Geometry and Topology, in memory of C-C Hsiung, Dates: May 28-30, 2010, chairman of the local organizing committee.

8.6 Refereeing of research manuscripts

Reviewed manuscripts for the following journals, among others:

- Journal of Differential Geometry
- Israel Journal of Mathematics
- Mathematical Reports of the Academy of Science, Royal Society of Canada
- Transactions of the AMS
- Proceedings of the AMS
- Journal für die reine und angewandte mathematik (Crelle's journal)
- Journal of the Mathematical Society of Japan
- Journal of Geometry and Physics
- Houston Journal of Mathematics
- Pacific Journal of Mathematics

8.7 Reviews of textbooks

Reviewed numerous textbook manuscripts and revisions, for the following publishers:

- John Wiley and Sons
- W. H. Freeman
- McGraw-Hill
- Addison-Wesley

8.8 Community Service:

1. Clerk, Committee of Overseers, Plymouth Friends Meeting., 1996-2004.
2. Clerk (chair), peace and social concerns committee of Plymouth Friends Meeting , 1993-1996.
3. Member, peace and social concerns committee of Plymouth Friends Meeting , 1989 - 2000.
4. Member, Committee on Education (School Committee), Plymouth Meeting Friends' School, 1991-1993.
5. Member, Nominating Committee, Plymouth Friends' Meeting, 1995 - 1998, 2000-2004.
6. President, Bicycle Club of Philadelphia, 2002-2004.