CURRICULUM VITAE

Victor J. Donnay

May 2009

Address: Mathematics Department, Bryn Mawr College
Bryn Mawr, Pa. 19010
Phone: (w) 610-526-5352
email: vdonnay@brynmawr.edu

Education:

B.S.	Dartmouth College, 1981
M.S.	Courant Institute, New York University, 1983
Ph.D.	Courant Institute, New York University, 1986. Peter Sarnak, Adviser

Positions:

1981-85	Research/Teaching Assistantship, Courant Institute, New York University
1982-83	(Summers) Instructor, Junior Faculty Member, Pre-Medical Research and Education Program, New York City
1985-86	Visiting Scholar, Stanford University
1986 (Winter, Spring)	Instructor, Adjunct Position in School of Engineering, Santa Clara University, CA
1986-87	Visiting Member, ETH, Zurich
1987-90	Instructor, Princeton University
1990 (Winter, Spring)	Participant, Program in Dynamical Systems and Their Applications, Institute for Mathematics and Its Applications, Minneapolis
1990-1996	Assistant Professor, Bryn Mawr College
1991 July	Guest of "Sonderforschungsbereich 170", "Geometry and Analysis", University of Gottingen, Germany
1992-93	Visitor, Institute for Advanced Study, Princeton, NJ
1994 October	Short term visitor, The Geometry Center, Minneapolis
1996-2002	Associate Professor, Bryn Mawr College
1996-2002	Chair, Department of Mathematics, Bryn Mawr College
1998-99	Visiting Scholar, University of California, Berkeley
2002 Sept -	Professor, Bryn Mawr College

Grants:

NSF Grants 1988-1990, $21,496
Bryn Mawr College Faculty Research Grant, 1991-1992, $1000
Pew Science Program, 1991-1992, $6779
Bryn Mawr College Faculty Research Grant, 1992-1993, $1163
NSF Travel Grant 1992-93, $3000

Bryn Mawr College Faculty Research Grant, 1993-1994, $1535
Bryn Mawr College Provost's Grant, summer 1994, $2705, to fund the Bryn Mawr - Swarthmore Geometry and Computer Visualization Project
U.S. Civilian Research and Development Foundation (CRDF) Grant, $33,900, 1996-1998, Co-PI with Vladimir Lazutkin.
Bryn Mawr College Faculty Research Grant, 1998-1999, $2000.
Bryn Mawr College Praxis Course Development Grant 2001, $3000.
Sigma Xi National Computer Science Institute workshop for Tri-college faculty, Co-PI, Dec. 2003.
Mellon Tri-College Forum Grant, 2003-2004, $5000
NSF Math-Science Partnership Grant, 2003-2008, $12.5 million, Co-PI, Joe Merlino, PI. PI of the Bryn Mawr-Haverford MSPGP subaward ($700,000).

Project Kaleidoscope Leadership Planning Grant, 2004-2005, $5000.
National Fish and Wildlife Foundation, Delaware Estuary Watershed Grants Program
Environmental Assessment and Action Plan for the Haverford State Hospital site,
2007-2008, $45, 320. Project Director Jan Marie Rushforth.
Member of project leadership team.

NSF Math Science Partnership START grant, submitted 3/25/08, recommended for funding of $224,977 for 2008-2010. Co-PI, Steve Madigosky, Widener University, PI.

Honors and Awards:

June 1981	Graduated Phi Beta Kappa, Summa Cum Laude with Distinction in Mathematics from Dartmouth College. Recipient of the Reynolds Scholarship (Honorary).
March 1987	Friedrichs Prize for an outstanding Ph.D. thesis from the Courant Institute.
1998	Recipient of Enhanced Sabbatical Leave from Bryn Mawr College.
2008	Curriculum for my Differential Equations course chosen as a Model Course by SENCER (Science Engagement for New Civic Engagements and Responsibilities).

Conferences:

Invited Lectures:

March 1987	Conference on Smooth Dynamical Systems, University of Maryland
May 1987	Dynamical Systems Conference, Oberwolfach, Germany
July 1988	London Mathematical Society Symposium on Dynamical Systems, Durham, England

August 1989	International Conference and Workshop on Dynamical Systems, IMPA, Rio De Janeiro
March 1990	Twist Map Conference, IMA, Minneapolis
March 1991	Dynamical Systems Conference, University of Maryland
July 1991	Dynamical Systems Conference, Oberwolfach, Germany
April 1993	Workshop on Spectral Theory and Dynamical Systems, The Johns Hopkins University
October 1993	Dynamical Systems Conference, Penn State University
July 1994	Symposium on Classical and Quantum Billiards, Ascona, Switzerland
August 1994	Minneapolis Mathfeast, AMS Special Session, "Computer Graphics as a Research Tool in Geometry and Topology"
April 1995	Dynamical Systems Conference, Rutgers Camden
July 1995	International Workshop on Hamiltonian Mechanics, Warsaw, Poland
October 1996	Panelist, Exemplary Mathematics Programs for Women, 11th Annual Department Chairs Colloquium, Washington, DC
December 1996	Hyperbolic Systems with Singularities, Schroedinger Institute, Vienna, Austria
March 1997	AMS Meeting, Southeastern Section, Memphis, Special Session on Chaotic Dynamics.
June 1998	Conference in Honor of M.C. Escher's 100th Birthday, Rome, Italy
November 1999	Workshop session leader, "Selling your department to the Administration",14th Annual Department Chairs Colloquium, Washington, DC
March 2000	Dynamical Systems Conference, University of Maryland
July 2000	International Conference on Dynamical Systems, IMPA, Rio De Janeiro
November 2000	AMS Meeting, Southeastern Section, University of Alabama, Birmingham, Special Session on Billiards.
October 2001	Dynamical Systems Conference, Penn State University.
July 2003	International Conference on Dynamical Systems, Porto Portugal.
October 2003	Dynamical Systems Conference, Penn State University.
March 2004	Dynamical Systems Congress, Montevideo, Uruguay
November 2005	Differential Geometry Day, Eastern Illinois University

Contributed Talks:

June 1989	Workshop on the Geometry of Hamiltonian Systems, MSRI
January 1990	Joint Mathematics Meetings, MAA Special Session, "Computers in the Classroom, the time is Right", Louisville
January 1992	Joint Mathematics Meetings, MAA Special Session, "Toolkit for the Liberal Arts", Baltimore
March 1992	International Conference on Hamiltonian Dynamical Systems, University of Cincinnati
May 1993	Joint Northeastern University-Bryn Mawr Ergodic Theory Conference, Bryn Mawr College
August 1999	Art and Mathematics Conference, UC Berkeley

Attended:

August 1988	Symposium in Mathematics, ETH Zurich, on the occasion of Professor J. Moser's 60th birthday
May 1989	Geometric Rigidity Conference, University of Colorado
March 1990	Geometric Rigidly Conference, Northwestern University
April 1990	Dynamical Systems Conference, University of Maryland
July 1990	International Convention on Cooperative Learning, Baltimore, Maryland
October 1990	Dynamical Systems Conference, Penn State University
March 1991	Geometric Rigidity and Hyperbolic Dynamics Conference, Penn State University
October 1991	Dynamical Systems Conference, Penn State University
October 1992	Dynamical Systems Conference, Penn State University
March 1993	Dynamical Systems Conference, University of Maryland
March 1993	Geometry Festival, University of Pennsylvania
January 1994	Joint Mathematical Meetings, Cincinnati
March 1994	Dynamical Systems Conference, University of Maryland
October 1995	Dynamical Systems Conference, Penn State University
March 1996	Visualizing Geometry Conference, Rutgers Camden
January 1998	Joint Mathematical Meetings, Baltimore, MD
October 1999	Dynamical Systems Conference, Penn State University
January 2000	Joint Mathematical Meetings, Washington D.C.
January 2004	National MSP Conference, Washington, DC
February 2004	National Research Council Workshop on Assessment, Washington, DC
May 2004	DIMACS Workshop on Mathematical Epidemiology and Vaccine Strategies, Rutgers University.
June 2004	National Research Council Workshop on How People Learn, Washington, DC
January 2005	National MSP Conference, Washington, DC
January 2006	National MSP Conference, Washington, DC
November 2006	Dynamical Systems Conference, Penn State University

Colloquia:

April 1988	Bryn Mawr College
February 1990	University of Minnesota
February 1990	University of Toronto
February 1990	Haverford College
February 1990	Bryn Mawr College
March 1990	Georgia Tech University
March 1990	Williams College
September 1991	Haverford College
November 1991	Swarthmore College
February 1993	Drexel University, Physics Department
April 1993	U.C. Santa Barbara

November 1994	Haverford College
October 1999	Haverford College
October 2004	Villanova University
April 2005	Stevens Institute of Technology
November 2005	Bryn Mawr College

Seminar Lectures:

March 1986	Cal Tech Dynamics Seminar
June 1986	CUNY Graduate Center Dynamics Seminar
October 1986	ETH Zurich Analysis Seminar
January 1987	McGill University Analysis Seminar
June 1987	University of Bern, Dynamics Seminar
November 1987	Rutgers University, Mathematical Physics Seminar
December 1987	Institute for Advanced Study, Dynamics Seminar
March 1988	Penn State University, Applied Math Seminar
July 1988	University of Rome, Analysis Seminar, 2 lectures
July 1988	Mathematical Institute of the Hungarian Academy of Sciences, Budapest
August 1988	Technical University of Berlin, Mathematical Physics Seminar
November 1988	Institute for Advanced Study, Dynamics Seminar
June 1989	University of California, Berkeley, Dynamics Seminar
January 1990	University of Michigan, PDE-Dynamics Seminar
February 1990	IMA, Minneapolis, Dynamics Seminar
May 1990	University of Minnesota, Geometry Seminar
July 1991	University of Gottingen, Analysis Seminar
July 1991	University of Bielefeld, Dynamics Seminar
October 1991	University of Pennsylvania, Geometry - Topology Seminar
October 1991	Stockton State College, Mathematics Seminar
January 1992	Penn State University, Mills College Summer Program Reunion
July 1992	Northwestern University, Dynamics Seminar
October 1992	SUNY Stony Brook, Dynamics Seminar
October 1992	University of Maryland, Dynamics Seminar
December 1992	University of Arizona, Dynamics Seminar
March 1993	Institute for Advanced Study, Geometry Seminar
April 1993	CUNY Graduate Center, Dynamics Seminar
April 1993	Princeton University, series of 2 lectures in Lewowicz's Dynamics Seminar
May 1993	University of Delaware, Dynamics Seminar
April 1994	University of Pennsylvania, Geometry - Topology Seminar
April 1996	University of Pennsylvania, Geometry - Topology Seminar
June 1997	Euler Institute, St. Petersburg, Russia, Dynamical Systems Seminar
September 1998	MSRI Dynamical Systems Seminar
October 1998	U.C. Berkeley Dynamical Systems Seminar
March 1999	University of Arizona Dynamical Systems Seminar
April 1999	Northwestern University Dynamical Systems Seminar

April 1999	Notre Dame University Geometry Seminar
June 1999	University of Southern California Dynamics Seminar
March 2000	University of Pennsylvania, Geometry - Topology Seminar
July 2003	Barcelona Dynamical Systems Seminar.
February 2004	University of Pennsylvania, Geometry - Topology Seminar

Education Presentations

March 1992	Temple University. Chautauqua Short Course Program, Lectured on Chaos theory.
April 1992	Bryn Mawr College. Organized a three part lecture series on chaos for school teachers in the Philadelphia area; gave lecture on the mathematics of chaos.
Summer 1993	Bryn Mawr-Spelman Undergraduate Research Program, faculty supervisor.
Summer 1996	Bryn Mawr College. Faculty supervisor for undergraduate research program in mathematics.
July 1997, June 1998, August 2000.	Bryn Mawr College. Co-Director of two week Chaos and Computers Institute for Philadelphia school.
June 2001	Organized day long workshop on math and science pedagogy for area faculty in preparation for spring 2002 Changing Pedagogies course.
May 2004	Bryn Mawr College. Organizer, half day workshop on math and science pedagogy for faculty from Tri-Co.
August 2004	Invited participant in TIMSS mathematics lessons work session, Racine, WI.
Sept 2004 – May 2005	Bryn Mawr College. Organizer and facilitator for monthly pedagogy seminar for college and secondary math and science faculty. MSPGP subaward.
October 2004	Bucknell University. New pedagogical approaches, 1 hour workshop with math faculty.
December 2004	National Research Council MSP Workshop, Washington DC. Panelist: Finding common ground between IHE and K-12 educators; examples of implementation.
February 2005	Cheltenham High School Math Dept, presentation on Formative Assessment.
April 2005	Octorara Middle/High School Math Dept, presentation on Formative Assessment
August 2005	Radnor High School Math Dept, presentation on Formative Assessment
October 2005	Haverford School District, presentation on Formative Assessment
May 2005	Haverford College. Organizer, one day workshop on math and science pedagogy for faculty from MSPGP partner IHEs.
August 2005	MSPGP-PKAL Leadership Planning Institute. Organizer and co-facilitator of 3 day leadership institute.

November 2006	Northwestern University. Faculty workshop on How People Learn and Formative Assessment.
November 2005	EPDEL section of MAA, Service Learning panelist.
November 2005	Bryn Mawr College. Computer Graphics workshop for Coopertown Elementary School students leading to their participation in undergraduate poster session.
January 2006	National MSP Meeting, Washington DC. Workshop jointly presented with Cathy Carol. Going to Scale: Supporting the People Who Work with Teachers of Elementary Mathematics.
January – May 2006	Organizer and co-facilitator of MSPGP monthly pedagogy seminar on Formative Assessment lead by Dr. Dylan Wiliam, attended by 40 secondary and IHE faculty.
February 2006	MSPGP Math Disciplinary Faculty Symposium, TIMSS video study: Ichiro Japanese lesson.
February 2006	Drew University. Faculty workshop on How People Learn and Formative Assessment.
May 2006	Lafayette College. The Mathematics of Social Justice. Course Development Workshop. Keynote speaker: What is Possible?
August 2006	MSPGP-PKAL Leadership Planning Institute. Organizer and co-facilitator of 4 day leadership institute.
September 2006	Colonial School District, presentation on How People Learn to 24 middle school and high school math teachers.
November 2006	Pennsauken School District, presentation on How People Learn and Formative Assessment to 40 middle school and high school math teachers.
January 2007	2007 MSP Learning Network Conference. Breakout session presentaton: Pedagogy Seminar for Math and Science Faculty: Vehicle for Change.
January – May 2007	Lincoln University. Facilitated four part series on How People Learn and Formative Assessment for math, science, and education faculty.
June 2007	Presentation on Formative Assessment at MSPGP IHE Millennial Learners Conference.
July 2007	Workshop on How People Learn for Cherry Hill School District for 40 math and science teachers.
December 2007	Leveraging Impact: From the classroom to a regional STEM Compact, presentation at NSF and ED Mathematics and Science Partnerships STEM Summit
February 2008	Workshop on How People Learn for Interboro School District for 20 math teachers.
August 2008	Workshop on How People Learn for Cherry Hill School District for 35 math and science teachers.

Expository Lectures on Mathematics:

November 1989	Princeton University, Public lecture
May 1990	University of Minnesota UMTYMP program,

October 1990	Bryn Mawr College, Parents Day,
March 1991	Bryn Mawr College, The Campaign for Bryn Mawr Opening Weekend
April 1991	Bryn Mawr College, Math Awareness Week
October 1991	Bryn Mawr College, Alumni Council
October 1993	Thomas Paine Unitarian Universalist Fellowship
October 2000	Bryn Mawr College, Parents Day
December 2000	Bryn Mawr College, Visual Cultures seminar
September 2001	Arcadia University, Graduate Colloquium Series
April 2002	St. Joseph's University, Math Awareness Day speaker
October 2002	Indiana University Undergraduate Colloquium
April 2003	Bryn Mawr College, Math Awareness Week speaker
October 2005	Bucknell University Undergraduate Colloquium
February 2006	Drew University Undergraduate Colloquium

Publications:

1. Geodesic flow on the two-sphere, Part I: Positive measure entropy, Ergod. Th. & Dynam. Sys. 8 (1988), 531-553.

2. Geodesic flow on the two-sphere, Part II: Ergodicity, Dynamical Systems, Springer Lecture Notes in Math., Vol. 1342 (1988), 112-153.

3. Using integrability to produce chaos: billiards with positive entropy, Comm. Math. Phys. 141 (1991), 225-257.

4. Joint with C. Liverani, Potentials on the two-torus for which the Hamiltonian flow is ergodic, Commun. Math. Phys. 135 (1991), 267-302.

5, Physical examples of linked twist maps with chaotic dynamics in Twist Mappings and Their Applications, R. McGehee and K. Meyer, Eds, Springer-Verlag (1993).

6. Transverse Homoclinic Connections for Geodesic Flows, Hamiltonian Dynamical Systems: History, Theory and Applications, H.S. Dumas, K.R. Meyer and D.S. Schmidt, Eds, Springer-Verlag (1995), 115-125.

7. Elliptic islands in generalized Sinai billiards, Ergod. Th. & Dynam. Sys. (1996), 16, 975-1010.

8. Joint with K. Burns, Embedded surfaces with ergodic geodesic flow, Inter. J. of Bifurcation and Chaos, Vol. 7, No. 7 (1997) 1509-1527.

9. Non-ergodicity of two particles interacting via a smooth potential, J. of Statistical Physics, Vol. 96, Nos. 5/6 (1999) 1021-1048.

10. Chaotic geodesic motion: an extension of M.C. Escher's Circle Limit Design, pp. 318-

333, M.C. Escher's Legacy: A Centennial Celebration Schattschneider, Doris; Emmer, Michele (Eds.) 2003, Springer-Verlag, (refereed publication).

11. Joint with C. Pugh, Anosov geodesic flows for embedded surfaces, Astérisque 287 (2003), 61-69 in Geometric methods in Dynamics II - Volume in honor of Jacob Palis, W. de Melo, M.Viana, J.C. Yoccoz (Ed.)

12. Creating transverse homoclinic connections in planar billiards, *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **300** (2003), Teor. Predst. Din. Sist. Spets. Vyp. 8, 122--134, 287.

13. Joint with C. Pugh, Finite horizon Riemann Structures and Ergodicity, Ergod. Th. & Dynam. Sys. (2004) 24, 89 - 106.

14. Perspectives on Mathematics Education Projects in a Service-Learning Framework, in Mathematics in Service to the Community, MAA Notes #66, Charles Hadlock editor, 2005.

15. Destroying ergodicity in geodesic flows on surfaces, Nonlinearity 19 (2006) 149-169.

Expository:

1. I think, therefore I sum, Bryn Mawr Alumnae Bulletin, Fall 1991.

Educational Materials

- The Topology and Geometry of the Costa surface, a 5 minute video produced in collaboration with B. Butoi, S. Levy, T. Munzner, and M. Teodorescu, (1995)

- Seraut-the-dots, School Arts (2005) Vol 105, November 2005, p. 43. Instructions on how to carry out a collaborative learning, hands-on art project for 2nd graders.

- Family of Five Math Lesson: the Mathematical Content, joint with Ned Wolff, for West Ed's Leadership Curriculum for Mathematics Professional Development project, 2005.

- Using TIMSS Videos to Improve Learning of Mathematics: A Resource Guide, Richard Askey and Patsy Wang-Iverson, Editors, 2005. I am acknowledged for contributing to the resource guide and for reviewing the guide.

- Quick Images: the Mathematical Content, joint with Ned Wolff , for West Ed's Leadership Curriculum for Mathematics Professional Development project, 2006.

- The Pit and the Pendulum, Mathematical Commentary for the Interactive Mathematics Program, joint with Ned Wolff, 2006.

- Differential Equations and Civic Engagement, in SIGMAA-QL Newsletter, October

2007; in Civic Matters--A Catalyst for Community Dialogue, a publication of the Civic Engagement Office at Bryn Mawr College, Issue 2, April 2008.

- Ordinary Differential Equations, Mathematical Modeling in Real World Situations. Donnay's course curriculum was chosen as a SENCER Model Course for 2008 for its efforts to improving science learning by supporting engagement with complex civic issues. See http://www.sencer.net/Resources/models.cfm .

Exhibits

- The Costa surface video is displayed (1995-) at the Maryland Science Museum as part of their permanent exhibition on mathematics. Also part of their traveling exhibit.

- Created a set of color prints of computer generated pictures of embedded surfaces with ergodic geodesic flow. Displayed at :

  Artist Market, Norwalk Ct, as part of Beyond Escher exhibit, November 1998.
  MSRI, Berkeley CA, summer 1999.
  Bryn Mawr College Gallery, fall 2000.

One of these images was used for the cover of the text Differential Geometry and Topology by K.Burns and M. Gidea, Chapman & Hall/CRC, 2005.

Web Materials

Co-directed a summer research program for Bryn Mawr undergraduates with D. Kumar in which the students made interactive Java applets that illustrate the notions of regular and chaotic motion in dynamical systems (http://serendip.brynmawr.edu/chaos).

Other Educational Related Work

Member of NSF site review team for the Georgia state MSP project, June 2005.
Representative for PA to Achieve Algebra 2 Test Question Review panel, May 2007.
Participant in PA State review process for Achieve science standards, July 2007.
Member of NSF Organizing Committee for January 2008 National MSP conference, Fall 2007.
Member of the five person Pennsylvania Department of Education team for the Achieve/ACE/NASH/SHEEO Algebra II meeting, October 2008 in Washington, D.C.
Participant in the American Diploma Project Achieve Algebra II Data Review Session, May 2008, Chicago, Il.