

Filiz Dođru

Department of Mathematics
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RESIDENCY STATUS: Permanent Resident in the USA

EDUCATION **The Pennsylvania State University**, University Park, Pennsylvania

Ph.D. Mathematics, 2003.

Thesis Advisor: Professor Sergei Tabachnikov

Thesis Title: "Polygonal Outer Billiards in the Hyperbolic Plane"

University of Arkansas, Fayetteville, Arkansas.

Ph.D. candidate, 1997 - 2000.

(My Ph.D. program was transferred from University of Arkansas to The Pennsylvania State University due to my advisor's relocation.)

University of Toledo, Toledo, Ohio

M.A., Mathematics, 1996.

Virginia Polytechnic Institute and State University, Blacksburg, Virginia

M.S., Mathematics, 1993.

Brown University, Providence, Rhode Island

M.S., Mathematics, 1991.

Ankara University, Ankara, Turkey

B.S., Mathematics, 1983.

RESEARCH INTERESTS Dynamical systems of billiard type and their relations to geometry and topology, in particular, polygonal dual billiards in the hyperbolic plane.

POSITIONS HELD **Grand Valley State University**, Allendale, Michigan

Assistant Professor

Fall 2003 - present

Courses taught: Calculus I & II, Euclidean Geometry, Differential Equations, Linear Algebra and Topology.

Service to the department and the university: Please see Committees, Services, Curriculum Activities section.

The Pennsylvania State University, University Park, Pennsylvania

Teaching Assistant

Fall 2000 - Summer 2003

Courses taught: College Algebra, Differential Equation. Full responsibility for lectures, exams, homework assignments, and grades.

University of Arkansas, Fayetteville, Arkansas

Teaching Assistant & Master Lecturer

Fall 1996 - Summer 2000

Courses taught: Calculus I, II, III. Full responsibility for lectures, exams, homework assignments, and grades. Shared responsibility for final exams.

TA Mentor: The responsibility was to help the new teaching assistants. Every year, only few out of all existing teaching assistants is chosen for new TA training program, 1998 - 1999.

Tutor: Tutored students in various mathematics courses.

University of Toledo, Toledo, Ohio

Teaching Assistant & Instructor

Fall 1993 - Summer 1996

Courses taught: College Algebra. Full responsibility for lectures, exams, homework assignments, and grades.

Tutor: Tutored students in various mathematics courses.

Ankara University, Ankara, Turkey

Instructor

Fall 1984 - Summer 1988

Courses taught: College Algebra, Calculus I, II, Linear Algebra, Analytic Geometry, Differential Geometry. Full responsibility for lectures, exams, homework assignments, and grades.

PUBLICATIONS C. Beckmann, E. Billings, F. Dogru, Enhancing the Teaching of Undergraduate Geometry Using K*12 Resources. *Proceedings of the 3rd International Conference on the Teaching of Mathematics at the Undergraduate Level*, 2006. Istanbul, Turkey: Turkish Mathematical Association.

F. Dogru, S. Tabachnikov. Dual Billiard. *The Mathematical Intelligencer*, 27, 4, (2005).

F. Dogru, S. Tabachnikov. On Polygonal Dual Billiard in the Hyperbolic Plane. *Reg. and Chaotic Dyn.*, 8 (2003) 67-82.

PhD Thesis: Polygonal Outer Billiards In The Hyperbolic Plane, (August 2003).

F. Dogru, S. Otten. On Differentiation and Classification within Outer Billiard Maps, submitted to *The College Mathematics Journal*, (2005).

RESEARCH
EXPERIENCE
WITH UNDER-
GRADUATE
STUDENTS

The Student Summer Scholar (S^3) program at Grand Valley State University, with an undergraduate student, S.Otten. Summer 2005.

- Paper accepted for publication: “Do Cyclic Polygons Make the Cut?” *Mathematics Magazine*, October 2006.
- Talk presented at MAA’s Annual Summer Meeting (Math Fest), Albuquerque NM, August 2005.

Independent Study “Non-Euclidean Geometry” with an undergraduate student, Winter 2005.

- Talk presented by the student during The Annual Student Scholarship Day at Grand Valley State University, April 2005.

Appointed as one of the four faculty advisors for REU 2007 program in Mathematics Department at Grand Valley State University .

CONFERENCES,
SEMINARS,
PRESENTATIONS

The 3rd International Conference on the Teaching of Mathematics at the Undergraduate Level (ICTM3), Istanbul, Turkey, July 2006.

“*Enhancing the Teaching of Undergraduate Euclidean Geometry Using K*12 Resources*”. Beckmann, C. and Dogru, F.

AMS-MAA Joint Meeting, AMS-SIAM Special Session on Contemporary Dynamical Systems, San Antonio TX, January 2006.

“*Examples of outer billiards with periodic dynamics.*”

Funded AWM speaker at the SIAM Annual Meeting, Portland OR, July 2004.

“ *On polygonal dual billiard in the hyperbolic plane.*”

Mid-West Geometry Conference at the University of Arkansas, Fayetteville AR, March 2004.

“*Polygonal dual billiard in the hyperbolic plane*”.

Invited seminar talk at the Michigan State University Mathematics Department, March 2004.

“*Dynamics of the Dual Billiard Map*”.

The Michigan Section of MAA meeting, May 2004, May 2005.

“*Polygonal dual billiards*”, 2004.

Maryland-Penn State semi-annual workshop on dynamical Systems, University of Maryland, Spring 2001.

“*On polygonal dual billiard in the hyperbolic plane*”.

Penn State Geometry Seminar Series, The Pennsylvania State University, 2003.

“*Polygonal dual billiards*”.

AMS-MAA Joint Mathematics Meetings, Baltimore MD, 2003; Phoenix AZ, 2004; San Antonio TX, 2006.

Michigan Council of Teachers of Mathematics, Detroit MI, 2004.

MAA's Annual Summer Meeting (Math Fest), Providence RI, 2004 & Albuquerque NM, 2005.

Educational Technology workshop "Active Learning Strategies Enhanced with Technology" Grand Valley State University, Allendale MI, Fall 2005.

Sixth Annual Michigan Undergraduate Mathematics Conference, Grand Rapids MI, Fall 2003.

Maryland-Penn State semi-annual workshop on Dynamical Systems, at The Pennsylvania State University.
Fall 2002, 2001, 2000, 1999. (Fall 1999 funded participant from University of Arkansas)

Annual Spring Lecture Series at University of Arkansas.
Spring 1998, Spring 1999.

AMS Special Session in Smooth Ergodic Theory and Dynamical Systems, University of Washington at Seattle.
Summer 1999, funded participant.

The 60th Annual Meeting of The Mathematical Association of America, Oklahoma-Arkansas Section.
Spring 1998, funded participant.

Texas Geometry and Topology Conference, University of Texas at Austin,
Fall 1998, funded participant.

AWARDS,
HONORS,
GRANTS

Nominated for Graduate Student Teaching Award of Pennsylvania State University (2001-2002).

Graduate Student Teaching Award (2000-2001). Pennsylvania State University, Mathematics Department.

John C. Massie Graduate Summer Fellowship (1998 and 1999). University of Arkansas.

Favorite Faculty Member (1998). The Student Outreach and Academic Resources (SOAR) Program, University of Arkansas.

Certificate from Education Department of Brown University (1991). For the successful completion of workshops and lecture-demonstrations designed to enhance teaching skills.

Turkish Ministry of Education Scholarship for five years (1990).

Summer school fellowship, Ankara University, Mathematics Department (1989).

COMMITTEES,
SERVICES,
CURRICULUM
ACTIVITIES

Mathematics Department:

Calculus Coordinator (2004-2005 and 2005-2006): The major duties of the coordinator included conducting monthly course meetings for all instructors to improve Calculus teaching methods and maintaining the electronic course files.

The Textbook Selection Committee: Served on the selection committee to chose textbooks for Calculus (2004-2005), Euclidean Geometry (2004-2005-2006), Topology (2006-2007).

NCATE Accreditation: Participated for the NCATE (National Council for Accreditation of Teacher Education) for Euclidean Geometry class. The responsibilities included writing the rubric for assessment and using the assessment plan in Euclidean Geometry classes, (2005-2006) and (2006-2007).

The Student Affairs Committee: Served as the chair of the committee (2005-2006), and as a member (2004-2006) and (2006-2007). The major responsibilities of the committee include selecting students for scholarships, awards, memberships, and preparing the award ceremony.

The Social Committee: The major duties of this committee include organizing social events in the department, and maintaining the faculty success board (2006-2007).

Mentor for New Faculty Members: The duties of mentors include coordinating weekly meetings with new hired faculty members and visiting their classes 3 times per semester during their first year (2006-2007).

University Service:

Search Committee: Served as a member of the Associate Dean for Development and Administration Search Committee (2006).

International Education Committee: Elected member for three years 2006-09. The committee responsibility includes to review, authorize, evaluate, and recommend modifications to all international programs administered by the Office of International Affairs; to recommend priorities, new initiatives, policies, and procedures for Office of International Affairs programs, including campus curricular and co-curricular activities; to advocate for international student, study abroad, faculty research and exchange, and community integration, within the university and West Michigan; and to ensure integrity and academic excellence in all international initiatives undertaken abroad by GVSU.

WISE Faculty Member: The WISE (Women in Science and Engineering) program at GVSU is an academic living and learning community designed for first-year women majoring in science, mathematics, engineering or computer science. The faculty members responsibilities include maintaining goals of the program. WISE provides its residents with opportunities to network, study together, meet upper-class science majors and faculty, and attend events related to their future careers in the sciences. The WISE program offers seminar programs, common readings, tutoring, advising, panel discussions and field trips.

VOLUNTEERED COMMUNITY WORK Grader at the 48th Annual Michigan Mathematics Prize Competition (2004-2005). An activity of the Michigan Section of the Mathematics Association of America (MAA).

Judge in the MAA Undergraduate Poster Session during AMS-MAA Joint Meeting, Phoenix AZ (2004).

Mathematics Department Representative for Winter and Fall Student Visitation/Reception Days at GVSU (2004-2005).

Teacher, Community Summer School (1991) Providence RI.

Substitute Teacher, the Community Weekend School, State College PA (Summer 2002).

MCTM (Michigan Council of Teachers of Mathematics) /NCTM (National Council of Teachers of Mathematic) conference store volunteer, Detroit MI (2004).

Representative for PIC (Padnos International Center) Study Abroad Program at Grand Valley State University (2006).

COMPUTER SKILLS Maple (Used in Calculus I & II labs, and Differential Equations & Linear Algebra classes.)

Mathematica

LaTeX

Microsoft Office (Words, Excel, PowerPoint)

Scientific Workplace

Sun Unix

LANGUAGES Turkish: Native

English: Written and oral fluency

French : Written basic

PROFESSIONAL MEMBERSHIPS American Mathematical Society (AMS), 1990-present

Mathematical Association of America (MAA), 1990-present

The Association for Women in Mathematics (AWM), 2001-present

Society for Industrial and Applied Mathematics (SIAM), 2003-2005