

Javier Armendáriz¹

WK: 400 Lind Hall , 207 Church St.SE , Minneapolis, MN 55455 , (612)624-2527 armendar@ima.umn.edu
HM: 885 West Hwy 36, Apt.210, Roseville, MN 55113, (651)766-5285

OBJECTIVE A research or application-development position which utilizes the analytical skills of an applied mathematician in mathematical modeling and numerical analysis to serve a team-oriented organization.

QUALIFICATIONS Self motivated researcher with experience in asymptotic and numerical methods and in developing mathematical models. Knowledgeable in solution methods for ordinary and partial differential equations. Experienced programmer in FORTRAN and familiar with C. Worked with various mathematical software packages and in Windows, Unix and Linux operating systems. Flexible and able to work productively in teams.

EDUCATION Northwestern University, Evanston, IL.
Ph.D.- Engineering Sciences and Applied Mathematics, 1999.
Dissertation: *Evaporation and Combustion of Thin Films of Liquid Fuels*

Northwestern University, Evanston, IL
M.S.- Engineering Sciences and Applied Mathematics, 1996.

University of New Mexico, Albuquerque, NM.
B.S.- Physics and Mathematics, 1994.

Graduate coursework includes: Asymptotic and Perturbation Methods in Applied Mathematics, Differential Equations of Mathematical Physics, Numerical Solutions of Partial Differential Equations, Models in Applied Mathematics, Applied Dynamical Systems, Methods of Nonlinear Analysis, Mathematical Topics in Combustion, Theory of Flows with Small Viscosity, Hydrodynamic Stability, Integral Equations and Applications, Numerical Solutions of Integral Equations and the Boundary Integral Method.

RESEARCH AND WORK EXPERIENCE *Postdoctoral Researcher* **Institute for Mathematics and its Applications**
University of Minnesota **1999 – Present**
Scientific research in the areas of combustion, fluid dynamics and differential equations. Organized seminar on Reactive Flow. Attended and presented at scientific conferences and collaborated on scientific projects.

Graduate Student Researcher and Instructor **Department of ES/AM**
Northwestern University **1994 – 1999**
Developed mathematical model for the evaporation and combustion of a thin film of liquid fuel. Developed and implemented numerical scheme in FORTRAN to solve a system of nonlinear partial differential equations. Taught Calculus supplemental course(Eng.A90). Responsible for course design. Lectured course material. Communicated key concepts. Advised students.

Instructor **Minority Engineering Opportunity Program**
Northwestern University. **Summer 1997**
Taught Calculus I and Linear Algebra summer course to incoming engineering freshmen. Collaborated with instructors over course design and material. Lectured course material. Advised students.

¹US citizen. Authorized to work in the United States.

Instructor

**Center for the Advancement of Hispanics
in Science and Engineering Education
Summer 1996**

University of Illinois at Chicago.

Taught pre-calculus course as part of a college preparation summer institute. Designed course outline and material. Advised and motivated students.

Research Assistant

**University of New Mexico
1993 – 1994**

Albuquerque, New Mexico

Assisted in the development of FORTRAN code used to determine the velocity of a propagating flame front in a tube. Assisted in the development, testing and setup of a laser calibration system to be used to align and calibrate particle detectors in experiment 865 at Brookhaven National Laboratory.

Science and Engineering Research Intern

**Brookhaven National Laboratory
1993**

Upton, New York

Tested possible configurations of a prototype magnet to be used as a particle accelerator at the National Synchrotron Light Source. Wrote and worked with FORTRAN programs to help analyze data. Assisted in the testing repair and construction of particle detectors and electronic components used in conjunction with the detectors in experiment 850 at the Alternating Gradient Synchrotron.

SPECIAL SKILLS

Programming Languages: Experienced in FORTRAN and familiar with C.

Operating Systems: Unix, Linux and Windows.

Software: Matlab, Maple, L^AT_EX, HTML, various differential equation solvers and Microsoft Office products.

Bilingual in Spanish and English.

SCIENTIFIC WORKS

J.Armendariz and M.Matalon, *Evaporation and Combustion of Thin Films of Liquid Fuels with Surfactants*, In preparation.

J.Armendariz and M.Matalon, *Evaporation and Combustion of Thin Films of Liquid Fuels*, Submitted to Journal of Fluid Mechanics.

J.Armendariz, *Evaporation and Combustion of Thin Films of Liquid Fuels*, Thesis, Northwestern University.

M.Matalon, N.Sarig, J.Armendariz, *Combustion of Thin Liquid Films*, Conf. Proc. 16th Intl. Coll. on the Dynamics of Explosions and Reactive Systems.

J.Armendariz, J.Gallardo, T.Romano, A.van Steenberg, *Fast Excitation Wiggler Field Measurement Results*, Brookhaven National Laboratory-47928 Informal Report.

**HONORS AND
AWARDS**

Graduated *cum laude* in physics.

Kappa Mu Epsilon, Mathematics Honorary, University of New Mexico.

Illinois Minority Graduate Incentive Program (IMGIP) Fellow, Northwestern University 1994-1997.

Preparing Future Faculty (PFF) Fellow, Northwestern University.

General Electric Faculty Intern, Northwestern University.

PRESENTATIONS

Lake Forest College, Lake Forest, IL. Mathematics department colloquium.

Title: *The Physics of Baseball*

University of Minnesota, IMA, Minneapolis, MN. Reactive Flow Postdoc Seminar.

Title: *Evaporation and Combustion of Thin Liquid Fuels*

Society for Industrial and Applied Mathematics Conference on Numerical Combustion.

Title: *Evaporation and Combustion of Thin Liquid Fuels*

**PROFESSIONAL
MEMBERSHIPS**

American Physical Society

Society for Industrial and Applied Mathematics