# General Information

## Education

Ph.D in Mathematics, *Pennsylvania State University*, 1980.
Advisor: R. P. Kanwal.
Thesis title: *Essays in the Theory and Applications of Generalized Functions.*

Licenciatura in Mathematics, *Universidad de Costa Rica*, 1976.
Thesis title: *Sobre los Espacios Nucleares.*

Bachelor in Mathematics, *Universidad de Costa Rica*, 1975.

## Professional Experience

43 years of professional experience:

*Louisiana State University.* Full Professor (2002 to present).

*Universidad de Costa Rica.* Instructor (1974-77), Associate Professor (1981-86), Full Professor (1987 to 2002).

*Pennsylvania State University.* Teaching assistant (1977-80), Fulbright Scholar (1990).

*Texas A&M University.* Visiting Professor (1983-84) and (1994-95).

## Courses Taught

**i)** *Courses not for math majors:* Trigonometry, Calculus, Linear Algebra, Probability and Statistics, Vector Calculus, Differential Equations, Operations Research, Probabilistic Models.

**ii)** *Undergraduate courses for math majors:* Abstract Algebra, Linear Algebra, Ordinary and Partial Differential Equations, Complex Variables, General Topology, Mathematical Models.

**iii)** *Graduate courses:* Integral Equations, Measure Theory, Real Analysis, Complex Analysis, Ordinary and Partial Differential Equations, Theory of Distributions, Functional Analysis, Asymptotic Analysis.

## Theses and Dissertations

Directed the Licenciatura and Masters theses of 8 students in Mathematics at the Universidad de Costa Rica: Luis Pacheco, Julio Céspedes, Sergio Araya, Carlos González, Carlos Manuel Ulate, Alan Dixon, Luis Gustavo Hernández, and Carlos Bonilla.

Have directed the Ph.D. dissertation of two students at LSU, Jasson Vindas and Yunyun Yang. The thesis of Dr. Vindas won the prize as the best dissertation in sciences and engineering of all LSU in 2009; those results eventually allowed him to being awarded the 2013 ISAAC award (see http://mathisaac.org/Award.html). The thesis of Dr Yang was

selected to represent the Mathematics Department in the best dissertation in sciences and engineering of all LSU competition in 2014.

## Areas of Research Interest

General area of interest is Applied Mathematical Analysis, particularly the following topics:

Theory of Distributions and Generalized Functions. Applications to ordinary and partial differential equations, wave propagation, quantum mechanics, and other fields of mathematical physics.

Integral Equations. Especially singular integral equations (Cauchy, Carleman, logarithmic, Wiener-Hopf), solution in spaces of generalized functions, applications in various fields of mathematical physics.

Asymptotic Analysis and Approximations. Approximation of functions by distributions, spectral asymptotics and geometry, asymptotics in quantum mechanics, applications in number theory, local asymptotic behavior of Fourier series, numerical approximation of multi-dimensional integrals.

Summability. Summability of generalized functions, Borel summability and approximation by cardinal series.

Others. Moment problems. Mathematical Economics. Mathematical analysis of fisheries. Radon trransforms and tomography.