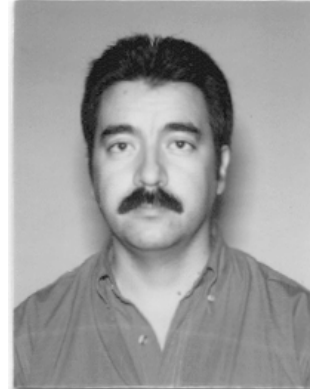


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EDUCATION

- Ph.D. 1990 - 1994 Ph.D. degree in Nonlinear Optics, Physics, at Imperial College of Science and Technology, University of London, Great Britain. Thesis: Self-Confined Beam Propagation and Pattern Formation in Nonlinear Optics.
- M.Sc. 1988 - 1990 Centro de Investigaciones en Óptica, México. Thesis: Simulación de la dinámica de recombinación en un plasma para la generación de pulsos láser.
- B.Sc. 1982 - 1988 Escuela Superior de Física y Matemáticas, I.P.N., México. Thesis: Dinámica de recombinación en un plasma para la generación de pulsos láser.

RESEARCH SUMMARY

Research field: Theoretical Linear and Nonlinear Optics. The physics of spatio-temporal light propagation and diffraction in dispersive linear and nonlinear refractive media is investigated using analytical and numerical techniques. The aim is to understand the physics of these phenomena and their potential application to photonics devices and optical computing components.

WORKING EXPERIENCE

- Full time researcher at Instituto Nacional de Astrofísica Óptica y Electrónica (INAOE) since January 1995. Associate Researcher 'C' 1995-1997, Titular Researcher 'A' 1997-2000, Titular Researcher 'B' 2001-2004, Titular Researcher 'C' (Professor) 2004-present.
- Academic research visitor at Universidade Federal de Alagoas, Macieó, Brasil, with support from the Coordinacion de Perfeccionamiento de Personal de Nivel Superior (CAPES), working with Professor Jandir Miguel Hickmann at the Instituto de Física. Aug 2005 – Dec 2006 (on leave from INAOE).
- Academic research visitor at University of California, Berkeley, with support from UC-MEXUS-CONACYT, Feb-Apr, 2004 (on leave from INAOE)
- Academic Fellow at Imperial College, London, with support from the Engineering and Physical Sciences Research Council (EPSRC), England, Sept 2000 - Aug 2001 (on leave from INAOE).
- Academic research visitor at Imperial College, London, with support from the Mexican Academy of Sciences-Royal Society of London, Sept-Dec, 1999 (on leave from INAOE).
- Academic research visitor at Universidade Federal de Alagoas, Macieó, Brasil, with support from the Coordinacion de Perfeccionamiento de Personal de Nivel Superior (CAPES), Brasil. May-July, 1999 (on leave from INAOE).

- Academic research visitor at University of Joensuu, Finland, with support from CONACYT, October 1998 (on leave from INAOE).
- Winter course of “Numerical Methods in Physics” for Physics and Mathematics Teachers at the Instituto Tecnológico de Estudios Superiores de Monterrey (ITESM), Dec 1998.
- Academic research visitor at University of Strathclyde, Scotland, with support from the International Commission for Optics (ICO) and the British Council, May-Aug, 1996 (on leave from INAOE).
- Administrator of the computing facilities and technical staff of I.N.A.O.E., Puebla, México from February 1996 to November 1998.
- Teaching of Optics, Nonlinear Optics, Quantum Mechanics, Mathematical Methods and other related Physics courses for the Optics MSc and PhD degrees at I.N.A.O.E, Puebla, México, since 1995 to date.
- Teaching assistant at Imperial College, London, England, in first and second year Physics and Mathematics courses for the period of 1992 - 1995.
- Teaching of first and second year Physics and Mathematics courses by a period of two years (1988 - 1989, 1989 - 1990) in the next universities: Instituto Tecnológico de Estudios Superiores de Monterrey (ITESM), Universidad Ibero Americana (UIA) and Universidad La Salle, in the city of León, Gto., México.
- Laboratory assistant in the Laser Laboratory of Centro de Investigaciones en Optica (CIO) in León, Gto., México. Experimental work on the design of hollow cathode laser cavities. The work also involved characterisation of the spectrum of the discharge in different gas buffers as well as the design and build up of the cavity resonator. Feb-Dec 1990.

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2. M. Anguiano-Morales, A. Martínez, M. D. Iturbe-Castillo, **S. Chavez-Cerda**, “*Different field distributions obtained with an axicon and an amplitude mask*,” Optics Commun. **281**, 401-407 (2008).
3. M. D. Iturbe Castillo, **S. Chávez-Cerda**, G. E. Torres-Cisneros and R. J. Delgado-Macuil, “Dark spatial solitons in media with slow nonlinearity,” Chap. 5, “Some topics of modern optics,” Eds. R. Rodriguez-Vera and F. Mendoza-Santoyo, Rinton Press 2008.
4. J. Rogel-Salazar, G. H. C. New and **S. Chávez-Cerda**, “*Propagation Invariant Beams: Bessel Beam Resonators*,” Chapter in book “New Research In Lasers and Electro-Optics” Ed. W. T. Arkin, Nova Science Publishers (2007). ISBN 1-60021-112-7 (https://www.novapublishers.com/catalog/product_info.php?products_id=4361).
5. M. Anguiano-Morales, A. Martínez, M. D. Iturbe-Castillo, S. Chávez-Cerda, and N. Alcalá-Ochoa, “*Self-healing property of a caustic optical beam*,” Appl. Opt. **46**, 8284-8290 (2008).
6. S. Chávez-Cerda, H. M. Moya Cessa and J. R. Moya Cessa, “*Quantum-Like Entanglement in Classical Optics*,” Best in Optics 2007, Optics and Photonics News **18**, 38 (2007).
7. V. Arrizón, **S. Chavez-Cerda**, U. Ruiz, R. Carrada, “*Periodic and quasi-periodic non-diffracting wave fields generated by superposition of multiple Bessel beams*,” Optics Express **15**, 16748 (2007).
8. Valery S. Shchesnovich, and **S. Chávez-Cerda**, “*Bragg-resonance-induced Rabi oscillations in photonic lattices*,” Opt. Lett. **32**, 1920-1922 (2007).

9. M. Anguiano-Morales, M. M. Méndez-Otero, M. D. Iturbe-Castillo, **S. Chávez-Cerda**, "Conical dynamics of Bessel beams," *Optical Engineering* **46**, 078001 (2007)
10. **S. Chávez-Cerda**, J. R. Moya-Cessa and H. M. Moya-Cessa, "Quantumlike systems in classical optics: applications of quantum optical methods" *J. Opt. Soc. Am. B* **24**, 404-407 (2007).
11. R. Rodríguez y Masegosa, H. Moya-Cessa and **S. Chávez-Cerda**, "Doughnut shape atom traps with arbitrary inclination," *Rev. Mex. Fis.* **52**, 80-84 (2006).
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44. **S. Chávez-Cerda**, E. Tepichín, M. A. Meneses-Nava, and G. Ramirez and J. M. Hickmann, "Experimental observation of interfering Bessel beams," *Optics Express* **3**, 524-529 (1998).
45. **S. Chávez-Cerda**, M. A. Meneses-Nava and J. M. Hickmann, "Interference of travelling nondiffracting beams," *Optics Letters* **23**, 1871-1873 (1998).
46. **S. Chávez-Cerda** and J. M. Hickmann, "Spatial instabilities in the propagation of a cylindrical beam in a Kerr medium," *Optics Communications* **156**, 347 (1998).
47. **S. Chávez-Cerda**, M. A. Meneses-Nava and J. J. Sánchez-Mondragón, "Breathing pulses and beams in nonlinear media," *Optical and Quantum Electronics* **30**, 835 (1998).
48. **S. Chávez-Cerda** S. B. Cavalcanti and J. M. Hickmann, "Soliton propagation in the vicinity of a two-photon resonance," *Physics Letters A* **247**, (4-5), 294-296 (1998).
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50. **S. Chávez-Cerda**, G. S. McDonald and G. H. C. New, "Nondiffracting beams: travelling, standing, rotating and spiral waves," *Optics Communications* **123**, 225 (1996).
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53. **S. Chávez-Cerda**, PhD Thesis, "Self-Confined beam propagation and pattern formation in nonlinear optics," Imperial College, London, U.K. (1995).
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MANUSCRIPTS IN PREPARATION FOR INTERNATIONAL JOURNALS OR BOOKS

1. **S. Chávez-Cerda** and J. M. Hickmann, "Optical Non-Diffracting Beams and their Applications," in preparation for **Progress in Optics**..

PUBLICATIONS IN NATIONAL MAGAZINE (2)

1. **S. Chávez Cerda**, B. Ibarra Escamilla, M. D. Iturbe Castillo, E. Kuzin, N. Korneev, R. Ramos García y C. G. Treviño Palacios, "Controlando luz con luz," revista Ciencia de la Academia Mexicana de Ciencias, vol. 54, num. 4, pages 56-65 (2003).
2. "Una nueva teoría sobre la propagación de la luz se ha desarrollado en el INAOE" **Sabino Chávez Cerda**, Periódico Síntesis, 28 de enero de 2005.

PUBLICATIONS IN INTERNATIONAL CONFERENCE PROCEEDINGS (41)

1. M. A. R. C. Alencar, C. M. Nascimento, **S. Chávez-Cerda**, M. G. A. da Silva, M. R. Meneghetti, J. M. Hickmann, "Large spatial self-phase modulation in castor oil enhanced by gold nanoparticles," *Nonlinear Frequency Generation and Conversion: Materials, Devices, and Applications V*, edited by Peter E. Powers, Proc. of SPIE Vol. 6103, 610306, (2006)

2. R. Fischer, D. N. Neshev, W. Krolikowski, Y. S. Kivshar, D. Iturbe-Castillo, **S. Chavez-Cerda**, M. R. Meneghetti, D. P. Caetano, and J. M. Hickmann, "Observation of spatial phase shift in dark soliton crossing," *Linear and Nonlinear Optics of Organic Materials VI*, edited by Robert A. Norwood, Proc. of SPIE Vol. 6331, 633102, (2006)
3. M. Anguiano-Morales, M. M. Méndez-Otero, **S. Chávez-Cerda**, M. D. Iturbe-Castillo, R. Ramos-García, "Different intensity distributions obtained with an Axicon," *Laser Beam Shaping VI*; Fred M. Dickey, David L. Shealy; Eds., SPIE Optics and Photonics Symposium Proc. SPIE Vol. 5876 celebrado en San Diego, CA. del 31 de julio al 5 de agosto de 2005. 344-351.
4. G. Rodríguez-Morales, J. C. Gutiérrez-Vega, and **S. Chávez-Cerda**, "Scalar representation of paraxial and nonparaxial laser beams," SPIE Annual Meeting, SPIE Vol. 5876-12: Laser Beam Shaping VI, 89-98 (San Diego, CA, 01 Aug. 2005) ISBN 0-8194-5881-3
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6. Raul I. Hernández-Aranda, **S. Chávez-Cerda**, and J. C. Gutiérrez-Vega, "Wave and geometrical analysis of the unstable Bessel resonator," SPIE Photonics West, SPIE Vol. 5708-06: Laser Resonators and Beam Control VIII, (San Jose, CA, 26 Jan. 2005)
7. M. Anguiano-Morales, S. E. Balderas-Mata, M. M. Méndez-Otero, **S. Chávez-Cerda** and M. D. Iturbe Castillo, "*Study of Bessel beams with opaque obstruction along the propagation direction*," 5th Iberoamerican Meeting on Optics and 8th Latin American Meeting on Optics, Laser and Their Applications. Proc. SPIE Vol. **5622**, 1440-1446 (2004).
8. S. Mendoza-Vázquez, **S. Chávez-Cerda**, E. Kuzin, J. Camas-Anzueto, R. A. Vázquez-Sánchez, B. Ibarra-Escamilla, J. Gutiérrez-Gutiérrez, "*Numerical and experimental análisis of Raman effect in optical fiber*," 5th Iberoamerican Meeting on Optics and 8th Latin American Meeting on Optics, Laser and Their Applications. Proc. SPIE Vol. **5622**, 435-438 (2004).
9. C. López-Mariscal, M. Bandrés-Motola, J. C. Gutiérrez-Vega, **S. Chávez-Cerda**, "*Experimental realization of nondiffracting parabolic beams*," *Frontiers in Optics 2004*, 88th OSA Annual Meeting, Diffractive Optics and Micro-Optics Meeting, Paper DM7 in CD Technical Digest FiO2004. Rochester NY, 10-14 October 2004. **INVITED TALK**
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14. G. Rodríguez-Morales, **S. Chávez-Cerda**, "*Exact scalar nonparaxial beam-like laser modes*," Optical Society of America (OSA), *Frontiers in Optics*, Tucson, Arizona, USA pag. 44 from the CD Technical Digest, October 6th 2003

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3. **S. Chávez-Cerda**, "Algunas contribuciones mexicanas a la óptica de haces," 25th Symposium de Investigación y Desarrollo Tecnológico, Centro de Investigaciones en Óptica, A.C., León, Gto., April 20th 2005.
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1. M. Bandrés, J. C. Gutiérrez-Vega, **S. Chávez-Cerda**, "Parabolic propagation invariant optical beams," European Conference on Lasers and Electro-Optics, Munich, Germany, 23-27 June, 2003.

FORMER STUDENTS

GRADUATED RESEARCH STUDENTS

1. **MSc**, David Romero Antequera, Thesis: "Propagation of planar Bessel profile in homogeneous media" September 5th 2008.
2. **MSc**, Flor del Carmen Paleta Toxqui. Thesis: "Fractional Hankel transform in the study of diffractive optical systems with radial symmetry." July 7th, 2005.
3. **PhD**, Gustavo Rodríguez Morales. Thesis: "Spheroidal beams: Paraxial and nonparaxial modes of the Helmholtz wave equation." November 2003.
4. **PhD**, Karen Volke Sepúlveda. Thesis "Light beams with angular momentum and applications to optical tweezers." February 2003. Awarded with the Weizzman Prize to Best PhD Thesis in April 2004.
5. **PhD**, Rodolfo Rodríguez y Masegosa, Thesis "Atom trapping." July 2002.
6. **PhD**, Julio César Gutiérrez Vega. Thesis "Formal analysis of the propagation of invariant optical fields with elliptic symmetries." December 2000.
7. **MSc**, Francisco Méndez Martínez. Thesis "Experimental and theoretical study of Bessel Beams with azimuthal phase variations," January 2000.
8. **BSc**, Jesus Rogel Salazar, Thesis "Autoenfocamiento Noparaxial de Haces en (2+1) Dimensiones en Medios Nolineales," January 1998.
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PARTICIPATION IN NATIONAL CONFERENCES (México) (20+)

1. M. Anguiano-Morales, M. M. Méndez-Otero, **S. Chávez-Cerda**, M. D. Iturbe-Castillo, "Modificación e interferencia de campos invariantes," XLVIII Congreso Nacional de la Sociedad Mexicana de Física celebrado en Guadalajara, Jal. Oct. 17 – 21, 2005. 2SE6.
2. M. D. Iturbe-Castillo, **S. Chávez-Cerda**, G. S. García-Quirino, G. E. Torres-Cisneros, "Spatial solitons in media with show nonlinearity," Symposium de Investigación y Desarrollo Tecnológico celebrado en León Gto. Apr. 19 – 22, 2005. M04.

3. S. Mendoza-Vázquez, E. A. Kuzin, **S. Chávez-Cerda**, J. Gutiérrez-Gutiérrez, B. Ibarra-Escamilla, "Análisis de inestabilidad modulacional y autocorrimiento de frecuencias en la propagación de un pulso en una fibra óptica," XLVIII Congreso de la Sociedad Mexicana de Física celebrado en Guadalajara, Jalisco, Oct. 24 – 28, 2005. 1SE1, 42.
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5. Julio C. Gutiérrez-Vega, R. Rodríguez-Dagnino, and **S. Chávez-Cerda**, "Generación de haces Bessel de orden superior usando un interferómetro Mach-Zehnder", XLV Congreso Nacional de Física (4SB6), León, México, Oct. 2002
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22. J. Rogel-Salazar, **S. Chávez-Cerda**, J. J. Sánchez-Mondragón, "Estudio de la copropagación de Haces Múltiples a través de Medios Nolineales Tipo Kerr en la Formación de Solitones Espaciales en 2+1 Dimensiones", V Verano de la Investigación Científica, Mazatlán, Sinaloa, México, August 28 - 31, 1995 (oral).
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EXTERNAL PRESENTATIONS

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2. "Optica Visual," Programa 2004-2005 del Colegio de Optometristas del Estado de Puebla (COPEP), Puebla, Pue., July 23, 2005.
3. "Tópicos de investigación en Óptica," Ciclo de conferencias del CA de Optoelectrónica, Facultad de Ingeniería Mecánica, Eléctrica y Electrónica, Universidad de Guanajuato, Salamanca Guanajuato, May 12, 2005.
4. Representación gráfica de las aberraciones del ojo humano," Módulo Córnea, XIX Curso Anual de Actualización del Colegio de Oftalmólogos del Estado de Puebla (COEP), Puebla, Pue., February 26, 2005.
5. "*Haces electromagéticos adifraccionales*," August 15th, 2003, Instituto de Física, UNAM.
6. "*Nuevas formas de hacer laceras*," May 9, 2003, I Ciclo de conferencias del Departamento de Física y Matemáticas, Ciclo Primavera 2003.

7. *"Matemática y Física de haces de propagación invariante,"* March 7th, 2003, Mini-Congreso/Taller de Óptica Matemática, organizado por el Centro de Ciencias Físicas UNAM/Cuernavaca 6-7 March 2003.
8. *"Polinomios de Zernike,"* Primer Curso Interdisciplinario "Óptica Aberraciones Corrección Visual con Láser", Dec. 1st 2001.
9. *"The Physics of Bessel beams",* October 15th 1999, Department of Laser Optics & Spectroscopy, Imperial College of Science Technology and Medicine, London, England.
10. *"Creation of Vortices in Nonlinear Media",* November 1999, Department of Laser Optics & Spectroscopy, Imperial College of Science Technology and Medicine, London, England.
11. *"Nuevos aspectos Sobre Haces Bessel",* July 1999, Department of Physics, Univ. Fed. Alagoas, Brasil.
12. *"Métodos Variacionales en la Propagación de Luz en Medios Inhomogéneos",* July 1999, Department of Physics, Univ. Fed. Alagoas, Brasil.
13. *"Haces Bessel como soluciones de la ecuación de onda,"* Seminarios de Ingeniería Física de la Universidad Iberoamericana, Plantel Santa Fé, Marzo 5 de 1999, México, D.F.
14. *"Hankel Waves",* Seminario de Investigación del Grupo de Optica Difractiva de la Universidad de Joensuu, Finlandia. October 20, 1998
15. *"Haces Hankel",* Centro de Investigaciones en Optica, July 3rd, 1998, León, Gto. México. (N)
16. *"Cálculo Variacional en Problemas de Optica Nolineal",* 7o. Coloquio de Investigación de la ESFM, IPN, March 25th, 1998, México, D. F. (N)
17. *"A pair of Topics on Beam Propagation",* IV International Photonics Workshop, January 20-31, 1997, Guadalajara Jalisco, México. (I)
18. *"Linear and Nonlinear Bessel Beams",* Nonlinear Optics Group, University of Strathclyde, June 25th 1996 Glasgow, Scotland, U.K. (I)
19. *"Modos Transversales de la Ecuación Noparaxial Nolineal de Schrödinger",* Centro de Investigaciones en Optica, March 10th, 1995 León, Gto. México. (N)
20. *"Propagation and Self-Focusing of Beams in Nonlinear Media",* Quantum Electrodynamics Group, Physics. Dept., Campinas University, Aug. 3 1995 Campinas, SP, Brazil. (I)
21. *"Recombinación en Plasmas para la Generación de Radiación Laser",* Primera Semana de la Optica en la Escuela Superior de Física y Matemáticas, I.P.N., May 21 – 25, 1990 México D.F., México (N)

INTERNAL SEMINARS (INAOE)

1. "Optical Vortices," January 28 2009.
2. "Mathematical Optics," November 2008.
3. "Hankel Dilemma", September 30, 1998.
4. "Light Propagation in Material Media", November 24, 1998.
5. "Nonlinear Propagation of Beams in Inhomogeneous Media," December 9, 1997.
6. "Light Propagation in Nonlinear Media", June 25 1997.
7. "Light-Induced Nonlinear Effects in Dielectric Media," April 1996.
8. "Spatial Solitons in Nolinear Media," March 1996.
9. "Beam Propagation and Self-focusing in Nonlinear Media " June 22 1995.

10. *"Variational Calculus Applied to Propagation Problems,"* January 25 1995.

WORKSHOPS

1. IV International Photonics Workshop, Guadalajara, Jalisco, México, January 20-31, 1997.
2. Nonlinear Optics and Guided Waves, Study Centre Edinburgh, Scotland, U.K., 1st-20th August 1994

DEGREE EXAMINER

1. MSc. Wagner Ferreira Da Silva at Dep. of Phys. Univ. Fed. Alagoas, Brazil, 1 March 2007
2. MSc. Degree. Itamar Vidal S. de Lima at Dep. of Phys. Univ. Fed. Alagoas, Brazil, 10 Oct 2005.
3. PhD. Raúl Jacobo Delgado Macuil at INAOE, Puebla, México, March 2005.
4. MSc. Carlos López Mariscal at ITESM, Monterrey, N. L. México, Novembre 2003.
5. MSc. Jaime Gutiérrez Gutiérrez at I.N.A.O.E., Puebla, México, September 2003.
6. PhD. Julio César Ramírez San Juan at I.N.A.O.E., Puebla, México, January 2003
7. MSc. Blas Manuel Rodríguez Lara at I.N.A.O.E., Puebla, México, June 2002.
8. MSc. Luis Ignacio Olivos Pérez at I.N.A.O.E., Puebla, México, 2002
9. PhD. Gustavo Rodríguez Gómez at I.N.A.O.E., Puebla, México, 2002
10. MSc. Sergio Sánchez Sánchez at I.N.A.O.E., Puebla, México, August 2000
11. MSc. Rubén Alejandro Vázquez Sánchez at I.N.A.O.E., Puebla, México, 2000.
12. MSc. Francisco Méndez Martínez, at I.N.A.O.E., Puebla, México, February 2000.
13. PhD. Marcela Maribel Méndez Otero at I.N.A.O.E., Puebla, México, 2000.
14. MSc. Martha Alicia Torres González at I.N.A.O.E., Puebla, México, 1999.
15. MSc. Marcos Salazar Romero at I.N.A.O.E., Puebla, México, 1999.
16. PhD Roberto Rojas Lagunas at I.N.A.O.E. Puebla, México, 1999.
17. MSc. Martha Alicia Torres González at I.N.A.O.E., Puebla, México, 1998.
18. MSc Daniel Alberto May Arrijoja at I.N.A.O.E. Puebla, México, 1998.
19. BSc Jesús Rogel Salazar at Universidad Ibero Americana, plantel Santa Fé, Edo. de México 1998.
20. MSc. Harvey González González at I.N.A.O.E., Puebla, México, 1997.
21. PhD Héctor Castro Beltran at I.N.A.O.E. Puebla, 1996.
22. MSc Mauricio Ramírez Renero at I.N.A.O.E. Puebla, México, 1996.
23. MSc Cesar Pérez Ballinas at I.N.A.O.E. Puebla, México, 1996.
24. PhD Gustavo E. Torres-Cisneros at I.N.A.O.E. Puebla, México, 1995.
25. MSc Luis M. Arévalo Aguilar at I.N.A.O.E. Puebla, México, 1995.
26. MSc Fermín S. Granados Agustín at I.N.A.O.E. Puebla, México, 1995.
27. MSc Svetlana S. Mansurova at I.N.A.O.E. Puebla, México, 1995.

RESEARCH FUNDING GRANTS

- Coordinacion de Perfeccionamiento de Personal de Nivel Superior (CAPES), Brasil. Grant for an academic research visit to the Universidade Federal de Alagoas Brasil, Aug-Dec, 2005.
- Univeristy of California-México (UC-MEXUS). Visiting Scholar for three months (Feb – Apr 2004) to perform reseach on the Physics of Vision at the University of Berkeley, California, USA.
- Engineering and Physical Sciences Research Council (EPSRC), England. Academic Fellowship for one year (Sept 2000 - Aug 2001) to perform research at Imperial College, London.
- Mexican Academy of Sciences-Royal Society of London. Grant (with one month extension) for an academic research visit to the Imperial College, London, U. K, Sept.-Dec., 1999.
- Consejo Nacional de Ciencia y Tecnología (CONACYT). Grant number 3943P-E9607, for infrastructure (~50,000 USD) to perform research studies on propagation of light in linear and nonlinear media at INAOE, 1997-1999.
- International Commission for Optics (ICO). Fellowships for an academic research visit to the University of Strathclyde, Scotland, U. K. May 1996.
- British Council grant for an academic research visit to the University of Strathclyde, Scotland, UK. May-Aug., 1996.

PROFESSIONAL SOCIETIES

Member of:

- Sistema Nacional de Investigadores (SNI), México
- Mexican Academy of Sciencies (Academia Mexicana de Ciencias – AMC)
- The International Society for Optical Engineering (SPIE)
- Optical Society of America (OSA), USA.
- Institute of Physics (IOP), UK.
- European Optical Society (EOS).
- Academia Mexicana de Optica (AMO), México.
- Sociedade Brasileira de Fisica, Brasil.

AWARDS

- Awarded with the **Sistema Nacional de Investigadores (SNI) fellowship Level III**; Ref. No. 16160; period, 2005-2010.
- Accepted in the Mexican Academy of Sciences in April 2004.
- **European Optics Prize** to best article in Optics, European Optical Society 2003.
- **Weizzman Prize to Best PhD Thesis** of graduated student Karen Volke-Sepulveda 2003.
- Awarded with “**Chartered Physicist by the Institute of Physics** from the UK on March 2000. *“Chartered Physicist is the professional qualification for those who can demonstrate a high level of competence and professionalism in the practice of pure or applied pysics, and who are committed to maintaining their experience. This qualification guarantees that a physicist’s competence in terms of education, experience and professional responsibility has been critically scrutinized and assessed to the satisfaction of the Institute’s Council.”*

- Awarded with the Sistema Nacional de Investigadores (SNI) fellowship Level: II; Ref. No. 16160; period, 2002-2005.
- Awarded with the Sistema Nacional de Investigadores (SNI) fellowship Level: I; Ref. No. 16160; period, 1999-2002.
- Awarded with the Sistema Nacional de Investigadores (SNI) fellowship Level: Candidate to Researcher; Ref. No. 16160; period, 1996-1999.
- Awarded CONACYT repatriation grant Jan.-Dec. 1995 to work at I.N.A.O.E.
- Awarded Overseas Research Student (O.R.S.-C.V.C.P.) Grant for PhD Studies at Imperial College for three consecutive years, 1990 - 1991, 1991 - 1992, 1992 - 1993, England.
- Awarded CONACYT Grant for PhD Studies 1990 - 1994 at Imperial College, United Kingdom.
- Awarded CONACYT Grant for MSc Studies 1988 - 1990, at C.I.O. México.
- Awarded CONACYT Grant for BSc Thesis 1987 - 1988, at C.I.O., México.

OTHER SKILLS

- Languages (native tongue is Spanish):
 - 1 English, written and spoken (95%).
 - 2 Portuguese, spoken and read (70%).
- Computing
 - 1 Advanced knowledge (expert) of the Windows environment; working knowledge of UNIX. Advanced knowledge (expert) of FORTRAN 77 on any platform (mainframes, workstations, PC's). Basic knowledge of FORTRAN 90/95. Working knowledge of mathematical packages like Mathematica and MatLab. Graphics software; Gnuplot, Origin; basic knowledge of IDL. Working knowledge of the word processors Word for Windows, Scientific Word and LaTeX.

Lectures

1. Óptica, Licenciatura en Física, Universidad Iberoamericana plantel Santa Fe, May 30th – July 1st 2005.
2. “Aplicaciones de funciones especiales a la Óptica,” Proyecto Óptica Cuántica, cuerpo académico de Ciencias Físicas, Programa de formación y fortalecimiento de cuerpos académicos 2004 (PROMEP). División Académica de Ciencias Básicas, Universidad Juárez Autónoma de Tabasco, May 23-26, 2005
3. Métodos Matemáticos II, Master in Optics, Jan-May 2005.
4. Laboratorio de Óptica I, Maestría en Óptica, Sept. – Dec. 2003.
5. Métodos Matemáticos, Maestría en Óptica, Sept. – Dec. 2003.
6. Métodos Matemáticos II de la Óptica, Maestría en Óptica, Jan. – May 2003.
7. Óptica básica, Universidad Iberoamericana plantel Santa Fé, May –July, 2002.
8. Métodos matemáticos y numéricos, Maestría en óptica, Jan. - May 2002
9. Cálculo, Ingeniería en Física en la Universidad Iberoamericana, Puebla, 2000.
10. Óptica No lineal, Maestría, INAOE, 2000.
11. Métodos variacionales en óptica no lineal, Jun. 1999, UFAL-Brasil.
12. Métodos matemáticos, INAOE, 1999

13. Mecánica cuántica, INAOE, 1999
14. Métodos Matemáticos de la Física II, Curso para profesores e ingenieros, ITESM, Campus Monterrey, Dec. 7-11, 1998.
15. Métodos Matemáticos de la Física I, Curso para profesores e ingenieros, ITESM, Campus Monterrey, Dec. 14-18, 1998.
16. Métodos Numéricos con MatLab. Curso de maestría / doctorado impartido en el Centro de Investigaciones en Óptica, León, Gto., en colaboración con el Dr. M. A. Meneses Nava. Summer 1998.
17. Propagación de Luz en Medios Lineales y Nolineales. Summer 1998, INAOE.
18. Métodos Matemáticos para la Óptica. Curso de la Maestría en Óptica en el INAOE. Sept – Dec, 1998.
19. Cálculo III, Universidad Iberoamericana plantel Golfo Centro, Autumm 1998.
20. Dinámica, Universidad Iberoamericana plantel Golfo Centro, Autumm 1998.
21. Métodos Matemáticos. Maestría en Óptica. Winter 1997.
22. Métodos Numéricos con MatLab. Maestría en Óptica, Summer 1997.
23. Mecánica Cuántica, en colaboración con el Dr. J. Sánchez Mondragón, Maestría en Óptica, Spring 1997.
24. Fibras Ópticas, en colaboración con el Dr. E. Kuzin, Maestría en Óptica. Dec. 1996.
25. Teoría Electromagnética I, Maestría en óptica, Sept – Dec. 1995
26. Teoría Electromagnética, Doctorado en óptica, Sept – Dec. 1995
27. Técnicas numéricas de propagación, Maestría en óptica, Sept – Dec. 1995.
28. Physics and Mathematics lectures for Undergraduate students, Physics department, 1992 – 1995.