

**University of Puerto Rico School of Medicine
Medical Sciences Campus
Department of Medicine, Section of Neurology**

Curriculum Vitae Dr. Carmen Serrano

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I. Premedical Education

University of Puerto Rico	BS-Magna Cum Laude	1977-1981
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II. Medical Education

University of Puerto Rico School of Medicine	Doctor in Medicine	1981-1985
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Internship University of Puerto Rico Adults University Hospital	Medicine	1985-1986
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Residency University of Puerto Rico Adults University Hospital	Neurology	1986-1989
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Chief Resident University of Puerto Rico Adults University Hospital	Neurology	1989
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Post-residency Fellowship Yale University New Haven, CT	Movement Disorders	1989 - 1992
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III. License to Practice Medicine:

Puerto Rico	9181	1989
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IV. Teaching and Hospital Appointments

Neurology Program Director		2009- present
Professor Department of Medicine University of Puerto Rico School of Medicine		2004- present
Associate Professor Department of Medicine University of Puerto Rico School of Medicine		1999-2004
Assistant Professor Department of Medicine University of Puerto Rico School of Medicine		1992-1988
Director, Movement Disorders Service		2015 - current
Co-director Movement Disorders Service Neurology Section, UPR		1992- 2015
Neurology Faculty Adults University Hospital San Juan, PR		1992- present
Neurology Faculty Puerto Rico Cardiovascular Center San Juan, PR		1994-present
UPR Faculty Clinics Practice Movement Disorders Clinic University of Puerto Rico School of Medicine		1996-present
Neurology Faculty Pavia Hospital, San Juan, PR		1992-1996
Movement Disorders Fellow Yale-New Haven Hospital New Haven, CT		1989-1992
Neurology Chief Resident Neurology Residency Program University of Puerto Rico School of Medicine		1989

V. Certifications:

National Board of Medical Examiners (319075)	1985
American Board of Neurology and Psychiatry (35385)	1992 (Active)

VI. Professional Societies

American Academy of Neurology	
Active member	1987-2001
Fellow	2001-present
American Academy of Neurology, Movement Disorders Section, Member	
American Academy of Neurology, Education Section, Member	
Puerto Rico College of Physicians	2000-present
Puerto Rican Academy of Neurology	1987-present
Movement Disorders Society	1991-present
Parkinson Study Group	1996-present
American Council of Graduate Medical Education	2009-present
Association University Professors of Neurology	2009-present
Movement Disorders Society-	1992- present
Pan American Section Organizing Committee	2010-2013
Central American and Caribbean Working Group	2019- present

VII. Honors and Awards:

Bachelor in Science Magna Cum Laude	1981
University of Puerto Rico	
Puerto Rican Academy of Neurology Recognition Award	1996
Puerto Rico Department of Family Recognition	1999
Fellow, American Academy of Neurology	2001
Puerto Rico Parkinson Disease Association Recognition	2001
Movement Disorders Society-Pan American Section	2013
Organizing Committee Recognition	

VIII. Academic Experience:

Neurology Program Director	2009-present
Univ. Puerto Rico Graduate Medical Education Committee member	2009-present
Director, Movement Disorders Service and Clinic	2016- present

Co-director, Movement Disorders Service and Clinic University of Puerto Rico School of Medicine, Neurology Section	1992-2016
Director, Curriculum Committee Neurology Residency Program University of Puerto Rico School of Medicine	2006-2008
Coordinator, Mechanisms of Disease in Neurosciences Course Second Year Medical Students University of Puerto Rico School of Medicine	1992-2006
Member, Mechanisms of Disease Committee University of Puerto Rico School of Medicine	1993-2006
Coordinator, Neurology Clerkship Fourth Year Medical Students University of Puerto Rico School of Medicine	1992-2009
Coordinator, Clinical Neurology Course Third Year Medical Students University of Puerto Rico School of Medicine	1992-1998
Coordinator, Physical Diagnosis, Neurological Exam Second Year Medical Students University of Puerto Rico School of Medicine	1993-1999
Member, Physical Diagnosis Committee University of Puerto Rico School of Medicine	1997-1999
Member, Second Year Medical Students Curriculum Committee University of Puerto Rico School of Medicine	1999, 2000
Faculty, Neuroscience Course First Year Medical Students University of Puerto Rico School of Medicine	1994-present
Neurosciences First Year Medical Students Curriculum Review Committee University of Puerto Rico School of Medicine	2003-2004
Research Presentation for the External Advisory Committee Accreditation Visit Clinical Research Center University of Puerto Rico School of Medicine	2002, 2003
Main Interdisciplinary Courses Coordinators Interview Accreditation Visit University of Puerto Rico School of Medicine	2002
Member, Promotions Committee Second Year Medical Students University of Puerto Rico School of Medicine	1999-2000
Advisor, Fourth Year Medical Students	1997-present

University of Puerto Rico School of Medicine

Advisor, Research Projects 2004-present
Neurology Residency Program
University of Puerto Rico School of Medicine

Faculty 1992-present
Neurology Residency Program

IX. Learning Resources authored:

“Neurosciences – Mechanisms of Disease”
Second Year Medical Students Course Syllabus

“Group Discussions - Clinical Cases”
Second Year Medical Students

“Neurology” Third Level Students
Student Manual

“Clinical Neurology” Clerkship Fourth Year Medical Students
Student Course Syllabus

Neurology Training Program Resident and Faculty Manual

X. Participation in Special Committees, Boards, Academic Senate, Advisory Councils:

Name	Date
1. Movement Disorders Society- Panamerican Section Central America and Caribbean Working Group	2019- present
2. Graduate Medical Education Committee University of Puerto Rico School of Medicine	2009-present
3. Movement Disorders Society Pan-American Section Organizing Committee	2011-2013
4. Advisor, Puerto Rico Parkinson Disease Association	1996 – 2006
5. Minorities in Clinical Trials Committee, Member Parkinson Study Group	1995-1996

XI. Research Experience: (describe and include the title and year of investigation conducted):

1. Guillain-Barre Syndrome: Epidemiology and Management - Experience at the University District Hospital, University of Puerto Rico School of Medicine, **C.Serrano**, V. Wojna. San Juan, Puerto Rico (1987)

2. Evaluation of Evoked Potential Technique in Hepatic Encephalopathy. Dr. A Noriega, **Dr. C Serrano**, Veterans Administration Hospital, San Juan, Puerto Rico, (1988)

3. Fetal Tissue Transplantation as Experimental Therapy in Parkinson's Disease, participated as a Movement Disorders Fellow performing pre-surgical evaluations. Yale University School of Medicine, New Haven, CT (1989 – 1992)
4. Computerized Evaluation of Motor Skills in Parkinson Patients, K. Marek PI, participated as Movement Disorders Fellow. Yale University, School of Medicine, New Haven, CT (1990-1992)
5. Autonomic Dysfunction in Parkinson's Disease, K. Marek, PI completed patient evaluations, Movement Disorders Fellow, Yale University, School of Medicine, New Haven (1990 – 1992)
6. Botulinum Toxin in Focal Dystonia. M. Arroyo, **C. Serrano**. University of Puerto Rico School of Medicine, San Juan, Puerto Rico. (1993 – 1994)
7. SPECT Imaging in Patients with Neuroacanthocytosis. **C. Serrano**, M. Arroyo, Investigators, University of Puerto Rico School of Medicine, San Juan, Puerto Rico, (1994)
8. Epidemiology of Parkinson's Disease in a Movement Disorders Clinic in San Juan, Puerto Rico. **C. Serrano**, M. Arroyo, A. Alvarado. University of Puerto Rico School of Medicine. San Juan, Puerto Rico. (1996)
9. Evaluation of Depression In Patients Taking Pramipexole. **C. Serrano**, M.T. Margarida. University of Puerto Rico School of Medicine, San Juan, Puerto Rico. (1997)
10. Efficacy, Safety, and Pharmacokinetics of Pramipexole in Patients of African, Asian and Hispanic Heritage (PRIME Study). Parkinson Study Group, Caroline Tanner, MD. Principal Investigator, **Carmen Serrano, MD. Site-Investigator**, University of Puerto Rico School of Medicine, San Juan, Puerto Rico. (1996)
11. Efficacy, Safety, and Pharmacokinetics of Pramipexole in Patients of African, Asian and Hispanic Heritage. OPEN LABEL - Parkinson Study Group, Caroline Tanner, MD. Principal Investigator, **Carmen Serrano, MD. Site Investigator**, University of Puerto Rico School of Medicine, San Juan, Puerto Rico. (1997)
12. Earlier versus Later Levodopa in Parkinson Disease (ELLDOPA Study). Parkinson Study Group, Stanley Fahn, MD. Principal Investigator, **Carmen Serrano, MD. Site Investigator**, University of Puerto Rico School of Medicine, San Juan, Puerto Rico. (1998)
13. Efficacy of Olanzapine in the Treatment of Chronic Tics. M. K. Peña, **C. Serrano**. University of Puerto Rico School of Medicine, San Juan, Puerto Rico. (1998)
14. Parkinson Research The Organized Genetics Initiative (PROGENI) - Parkinson Study Group, Dr. T. Foroud, University of Indiana Principal Investigator, **Carmen Serrano, MD Site-Investigator**, University of Puerto Rico School of Medicine, San Juan, Puerto Rico. (1998 - IN PROGRESS)
15. A Multicenter, US and Canada, Double Blind, Randomized, Placebo Controlled, Parallel Group Study, for the Efficacy, Tolerability, and Safety of Rasagiline Mesylate in Levodopa Treated Parkinson Patients with Motor Fluctuations (PRESTO) - Parkinson Study Group, S. Schwid, I. Shoulson PI, **C. Serrano, Site Investigator**, University of Puerto Rico School of Medicine, San Juan, Puerto Rico. (1999-2003)
17. An Active extension of the TV 1012/133 Study. A Binational, Multicenter, Randomized study to Evaluate the Safety and Tolerability of Rasagiline Mesylate in Advanced Parkinson Patients with Motor Fluctuations (PRESTO extension) TEVA Neuroscience, **C. Serrano Site Investigator**, University of Puerto Rico School of Medicine, San Juan, Puerto Rico (2003-2006)
18. A Multicenter, Randomized, Double-Blind, Double Dummy, Study Comparing TV1203/carbidopa Dispersible Tablets with Carbidopa/Levodopa tablets in Advanced Parkinson Patients-Parkinson Study Group- K. Blindauer, PI, **C. Serrano, Site Investigator**, University of Puerto Rico School of Medicine, San Juan, Puerto Rico (2000-2003)

19. A Binational, Multicenter, Open Label Study to Evaluate the Safety and Tolerability of TV 1203/carbidopa Tablets in Parkinson Patients with Motor Fluctuations - TEVA Neuroscience, **C. Serrano, Site investigator**, University of Puerto Rico School of Medicine, San Juan, Puerto Rico (2002)
20. Effect of Estrogen in a Group of Puerto Rican Women with Parkinson Disease. I.Pita, V.Wojna, **C.Serrano**. University of Puerto Rico School of Medicine, San Juan, Puerto Rico (2002)
21. Spectrum of Diagnosis in a Movement Disorder Clinic in Puerto Rico – **C. Serrano**, G. Villares, I. Pita. University of Puerto Rico School of Medicine, San Juan, Puerto Rico (2003)
22. Depression in Puerto Rican Patients with Parkinson Disease – I. Pita, O. Cardona, M.T. Margarida, L. San Miguel, **C.Serrano**. University of Puerto Rico School of Medicine, San Juan, Puerto Rico (2003- 2005)
23. Neuropsychological and Non-motor Symptoms Profile in Puerto Rican Patients with Parkinson Disease I. Pita, O. Cardona, M.T. Margarida, L. San Miguel, **C.Serrano**. University of Puerto Rico School of Medicine, San Juan, Puerto Rico. (Completed 2011)
24. Study of Antidepressants in Parkinson Disease (SAD-PD). Irene Richards, Principal Investigator, University of Rochester, **C. Serrano, Site Investigator**, University of Puerto Rico School of Medicine, San Juan, Puerto Rico 2009 (Completed 2011)
25. The Genetic Epidemiology in Parkinson Disease (CORE-PD). Karen Marder PI Columbia University; M. Arroyo, **C. Serrano, Site Investigators**, University of Puerto Rico School of Medicine 2011 (Completed 2012)
26. The PROGNI Family Study, Indiana University, Michael J. Fox Foundation. Tatiana Foroud, - PI Indiana University, **C. Serrano Site PI** University of Puerto Rico, 2012 (completed 2013)
27. Apathy in Patients with Parkinsonism – B. Nazario, C. Serrano – University of Puerto Rico School of Medicine, 2013 – Completed 2014
28. The insulin receptor in Parkinson disease – A. Viñuela, V. Wojna, C. Serrano – University of Puerto Rico School of Medicine, 2013 – Completed 2014
29. A Randomized, double-blind, placebo controlled trial of urate elevating inosine treatment to slow clinical decline in early Parkinson’s disease-Massachusetts General Hospital/NIH/MJF-Michael Schwarzschild, MD, PhD Investigator, Carmen Serrano MD-Site Investigator Univ. Puerto Rico-Ongoing
30. Effect of LY3154207 on Cognition in Mild-to-Moderate Parkinson’s Disease Dementia (PRESENCE STUDY)- Sponsored by Eli Lilly Company- C. Serrano-Site Investigator- University of Puerto Rico- 2018 -2020
31. Non-motor Symptoms and Co-morbidity in a Puerto Rican Population with Parkinson Disease- K. Palerm, M.Morales, V. Wojna, C. Serrano- University of Puerto Rico School of Medicine- 2021 - Ongoing

XII. Publications

Abstracts:

1. **Serrano C.**, Wojna. V.; Guillain Barre Syndrome: Clinical Presentation, Epidemiology and Management with Emphasis in Plasmapheresis Therapy, Experience at the University Hospital, San Juan, Puerto Rico. VII Panamerican Congress of Neurology, San Juan, Puerto Rico, October 1987
2. **Serrano C.**, Alfonso G.; Atrial Myxoma Presenting as Cerebral Vasculitis - VII Panamerican Congress of Neurology, San Juan, Puerto Rico, October 1987

3. Mayo R., Gonzalez-Coto A., **Serrano C.**; The Neuropsychology of Partial Complex Seizures: A Clinical Case Study. Neurosciences Meeting – University of Puerto Rico School of Medicine, San Juan, Puerto Rico, 1989
4. Marek K, **Serrano C.**; Delayed Onset Dystonia after Carbon Monoxide Exposure. Symposium on Hyperkinetic Movement Disorders, September 1991, Seattle, Washington, Movement Disorders 6(3):274
5. Marek K., **Serrano C.**, Power Spectral Analysis of Heart Rate Variability in Patients with Degenerative Disease. 44th Annual Meeting of the American Academy of Neurology, San Diego California. (Platform)Neurology 42(Suppl. 3) 214; April 1992
6. Redmond E., Marek K., Naftolin, Spencer D., et al, **Serrano, C.**; Changes in Motor Performance After Unilateral Caudate Implantation of Mesencephalic Tissue; 44th Annual Meeting of the American Academy of Neurology Meeting, San Diego California. Neurology 42 (Suppl. 3) 198; April 1992
7. Marek K, Spencer D., Naftolin, Fahri A., **Serrano C.**; Effects of Mesencephalic Implantation in the Caudate Nuclei in Parkinson's Disease, 45th Annual Meeting of the American Academy of Neurology Meeting, New York, Neurology 43(Suppl. 2) 154; 1993
8. **Serrano C.**, Arroyo M.; Effects of Botulinum Toxin in Spasmodic Dysphonia – Puerto Rican Academy of Neurology Annual Meeting. Ponce, Puerto Rico, 1993
9. **Serrano, C.**, Arroyo, M.: SPECT in Patients with Neuroacanthocytosis. 3rd International Congress of Movement Disorders, Orlando, Florida. Mov. Dis.J. (suppl) 448, November 1994.
10. Tanner C.M. and the Parkinson Study Group, (**Univ. Puerto Rico P.I. Serrano C.**); Pramipexole in Ethnic Minorities with Parkinson Disease: Safety, Tolerability and Efficacy. Mov. Disord 14:901. 1999
11. **Serrano, C.**, Peña, MK.: Olanzapine Treatment for Chronic Tics. 3rd International Scientific Symposium on Tourette Syndrome. New York. June 1999.
12. **Serrano, C.**, Margarida, M.T.: Assessment of Depression Response to Dopamine Agonists in a Group of Hispanic Patients with Parkinson Disease Patients. 6th International Congress of Parkinson Disease and Movement Disorders. Barcelona, Spain. June 2000
13. Pita I., Wojna V., Rodriguez K., **Serrano C.**; Estrogen's Effect on Parkinson Disease Severity, Movement Disorders. 7th International Congress of Parkinson Disease and Other Movement Disorders. Miami, Florida. Vol. 17, No.5, 2002
14. Ocasio M., Roque S., **Serrano C.**; Access to Healthcare Services and Drug Therapy in a Neurology Ambulatory Clinic – XXIII Foro Anual de Investigación y Educación . University of Puerto Rico Medical Sciences Campus, San Juan, Puerto Rico. April 2003
15. Pita I., **Serrano C.**, Wojna V.; Depression in a Group of Puerto Rican Women with Parkinson's Disease; International Behavior Neuroscience Meeting, San Juan, Puerto Rico. April 2003
16. Deliz B., Algarin E., **Serrano C.**; Unusual Clinical and Radiological Presentation of Tuberculosis; 27th Annual Meeting of the American Society of Neuroimaging . Phoenix, Arizona. January 2004
17. Rodriguez F., **Serrano C.**; Comparison of Line Orientation Skills in a Group of Adolescents – XXIV Foro Anual de Investigacion y Educacion; University of Puerto Rico School of Medicine, San Juan, Puerto Rico. March 2004.
18. Pita I., Villares G., **Serrano C.**; Spectrum of Movement Disorders in a Puerto Rico Ambulatory Clinic. 1st. Forum of Chronic Diseases in the the Americas and the Caribbean. San Juan, Puerto Rico. June 2004

19. **Serrano C.**, Pita I.; Depression in A Group of Puerto Rican Patients with Parkinson Disease. 8th International Congress of Parkinson Disease and Movement Disorders. Rome, Italy. June, 2004
20. Cardona O., **Serrano C.**, Tormos L., Colon P., Collazo P., Gonzalez E.; A Case of Gliomatosis Cerebri: Clinical, Pathological and Radiological Case Report. XXV Foro Anual de Investigacion y Educacion; University of Puerto Rico School of Medicine, San Juan, Puerto Rico. March 2005.
21. Schwid S., and the Parkinson Study Group, (**Univ. Puerto Rico P.I. Serrano C.**), Safety of Rasagiline in Combination with Serotonin Reuptake Inhibitors. American Neurological Association 130th Annual Meeting. 2005
22. San Miguel-Montes L., Pita I., **Serrano C.**, Margarida M.T., Cardona O.; Executive Performance of Hispanics with Idiopathic Parkinson Disease: WCST Computer Version. International Neuropsychological Society Meeting, University of Zurich, Switzerland. July 2006
23. San Miguel-Montes L, Pita I., **Serrano C.**, Margarida M.T., Cardona O.; Cognitive and Affective Symptoms of Hispanic Patients Diagnosed with Idiopathic Parkinson Disease: A Case Series. 20th Annual Symposia on Etiology, Pathogenesis, and Treatment of Parkinson Disease and Other Movement Disorders. Chicago, Illinois. October 2006
24. **Serrano C.**, Pita I., San Miguel-Montes L., Cardona O.; Non-Motor Symptoms in Puerto Rican Patients with Parkinson Disease – XXIX Foro Anual de Investigacion y Educacion RCM – San Juan, PR March 2009
25. Serrano C., Nazario S. – Involuntary Movements in a Patient with Celiac Disease – XXXI Foro Anual Investigacion y Educacion RCM – San Juan, PR May 2011
26. Vinuela A., Diaz J., Corona M., Margarida MT, Serrano C. – Cognitive Impairments in Patients with Traumatic Brain Injury and Corpus Callosum Lesion- Oral Presentation- XXXII Foro Anual Investigacion y Educacion RCM – San Juan, PR March 2012
27. Guevara J., Labat J., Serrano C., Neuroimaging in sporadic Creutzfeldt Jakob Syndrome, XXXIII Foro Anual Investigacion y Educacion RCM – San Juan, PR- April 2013
28. I. Teron, K. Mendez, L. Sanchez, C. Serrano- The Spectrum of Central Pontine Myelinolysis and the Role of Neuroimaging- XXXIV Annual Education and Research Forum- University of Puerto Rico School of Medicine- April 2014
29. Nazario B., Serrano C., Alfonso G. – Quality Improvement Project for Fall Avoidance in Patients with Subarachnoid Hemorrhage- Poster- American Academy of Neurology Annual Meeting - April 2014
30. A. Viñuela, V. Wojna, C. Serrano - The insulin receptor in Parkinson disease – Poster – American Academy of Neurology Meeting – Washington DC – April 2015
31. Vargas N, Serrano C; Impact of Using a Template To Improve Quality Measures in the Longitudinal Follow-up of Parkinson Disease Patients- Poster-American Academy of Neurology- Vancouver, Canada, April 2016
32. Avila-Ornelas J., Alfonso G., Serrano C., “An Extremely Aggressive case of Marburg’s Disease”- Poster-presentation at the American Academy of Neurology 70th Annual Meeting- April 2018, Los Angeles, California
33. Caraballo S., Serrano C., An Unusual Case of Parkinsonism in a Young Woman, What Can it Be? –Poster-American Academy of Neurology 71th Annual Meeting- Philadelphia, PA- May 2019
34. M. Morales, J. Abreu, R. Rivera, J. Sanabria, C. Serrano; Large Bilateral Hemorrhagic Infarction Secondary to Cerebral Venous Thrombosis in a 27 years Old man with Focal Segmental Glomerulosclerosis: 72nd Annual Meeting – American Academy of Neurology – Virtual Poster Presentation – April 2021
34. Abreu J., Reyes D., Labat E., Serrano C. : A Young Man with Rapidly Progressive Spastic Hemiplegia: Clippers

Disease – International Movement Disorders Meeting- Virtual Poster Presentation- September 2021

35. Otero. J, Serrano C.-Ataxia in a Puerto Rican Woman with missense variant in the CCDC88C gene- International Movement Disorders Meeting-Virtual Poster Presentation-September 2021

Book Chapters:

1. Redmond E., Robbins, Spencer D. Marek K., **Serrano C.**; Cellular Replacement of Dopamine Deficit in Parkinson's Disease Using Human Fetal Mesencephalic Tissue: Preliminary Results in Four Patients – Molecular and Cellular Approaches to the Treatment of Neurological Disease Chapter 17- Raven Press, Ltd. New York, 1993.

Articles:

1. Pankratz N., Nichols W.C., Uniacke S.K., Halter C., Rudolph A., Shults, Conneally PM, Foroud T., and the Parkinson Study Group ((**Univ. Puerto Rico P.I. Serrano C.**), Genome Screen to Identify Susceptibility Genes for Parkinson Disease in a Sample Without *parkin* Mutations. *American Journal of Human Genetics*, 71:124-135, 2002

2. Nichols W.C., Panjratz N., Uniacke S.K., Pauciuolo MW, Halter C., Rudolph A., Conneally PM, Foroud T., and the Parkinson Study Group ((**Univ. Puerto Rico P.I. Serrano C.**), Linkage Stratification and Mutation Analysis at the *parkin* locus identifies mutation positive, Parkinson disease families. *Journal of Medical Genetics*, 39:489-492, 2002

3. Reider CR, Halter CA, Castellucio PF, Oakes D, Nichols WC, Foroud T., and the Parkinson Study Group ((**Univ. Puerto Rico P.I. Serrano C.**), Reliability of Reported Age at Onset for Parkinson Disease. *Movement Disorders*, 18:275-279, 2003.

4. Foroud T., Uniacke SK, Liu L., Pankratz N., Rudolph A., Halter C., Shults C., Marder K., Conneally PM, Nichols WC, and the Parkinson Study Group ((**Univ. Puerto Rico P.I. Serrano C.**), Heterozygosity for a Mutation in the *parkin* gene leads to Later Onset Parkinson Disease. *Neurology*, 60:796-801, 2003

5. Pankratz P., Nichols WC, Uniacke SK, Halter C., Rudolph A, Shults C, Conneally PM, Foroud T., and the Parkinson Study Group ((**Univ. Puerto Rico P.I. Serrano C.**), Significant Linkage of Parkinson Disease to Chromosome 2q36-37. *American Journal of Human Genetics*, 72:1053-1057, 2003

6. Pankratz P., Nichols WC, Uniacke SK, Halter C, Murell J., Rudolph A, Shults C, Conneally PM, Foroud T., and the Parkinson Study Group ((**Univ. Puerto Rico P.I. Serrano C.**), Genome-Wide Linkage Analysis and Evidence of Gene-by-Gene Interactions in a Sample of 362 Multiplex Parkinson Disease Families. *Human Molecular Genetics*, 12(20):2599-2608, 2003

7. Jordan M., **Serrano C.**; Review of Movement Disorders During Sleep. *Puerto Rican Journal of Neurosciences*. Vol. 4, Number 1, 2004.

8. Pankratz P., Uniacke SK, Halter C, Rudolph A, Shults C, Conneally PM, Foroud T., Nichols WC, and the Parkinson Study Group ((**Univ. Puerto Rico P.I. Serrano C.**), Genes Influencing Parkinson Disease Onset: Replication of PARK3 and Identification of Novel Loci. *Neurology*, 62:1616-1618, 2004

9. Nichols WC, Uniacke SK, Pankratz P., Reed T., Simon DK, Halter C, Rudolph A, Shults C, Conneally PM, Foroud T., and the Parkinson Study Group ((**Univ. Puerto Rico P.I. Serrano C.**), Evaluation of the Role of Nurr1 in a Large Sample of Familial Parkinson Disease. *Movement Disorders* 19:649-655, 2004

10. Parkinson Study Group, (**Univ. Puerto Rico P.I. Serrano C.**), A Randomized Placebo controlled Trial of Rasagiline in Levodopa-Treated Patients with Parkinson Disease and Motor Fluctuations. *Arch Neurol.*, Vol. 6, 2241-248, Feb. 2005

11. Nichols WC, Pankratz N., Hernandez D., Paisan-Ruiz C., Jain S., Halter CA, Micheals VE, Reed T., Rudolph A., Shults CW, Singleton A., Foroud T., Parkinson Study Group, (**Univ. Puerto Rico P.I. Serrano C.**); Genetic Screening for a Single Common LRRK2 Mutation in Familial Parkinson Disease. *Lancet*. 2005 Jan. 29; 365-(9457):410-412. 2005
11. Goetz C., Schwid S., Eberly S., Oakes D., Shoulson I. and the Parkinson Study Group TEMPO and PRESTO Investigators, (**Univ. Puerto Rico P.I. Serrano C.**); Safety of Rasagiline in Elderly Parkinson's Disease Patients – Brief Communication, *Neurology*, 2006
12. **Serrano C.**, The Use of Botulinum Toxin in Movement Disorders, *Arco de Movimiento*, Vol.5 No. 1, March 2006
13. Pankratz N., Byder L., Halter C., Rudolph A., Shults C., Conneally PM., Foroud T., Nichols WC., Parkinson Study Group, (**Univ. Puerto Rico P.I. Serrano C.**), Presence of an APOE4 allele results in significantly earlier onset of Parkinson disease and a higher risk of PD with dementia. *Movement Disorders*, 21:45-49, 2006.
14. Pankratz N., Pauciulo M., Elsaesser V., Marek D., HalterC., Wojcieszek J., Rudolph A., Shults C., Foroud T. Nichols W., Parkinson Study Group-PROGENI Investigators (**Univ. Puerto Rico P.I. Serrano C.**) – Mutations in DJ-1 are rare in familial Parkinson Disease – *Neuroscience Letters* 408 (2006) 209-213
15. Parkinson Study Group (**Univ. Puerto Rico P.I. Serrano C.**); Pramipexole in Levodopa-Treated Parkinson Disease Patients of African, Asian, and Hispanic Heritage – *Clinical Neuropharmacology* Vol. 30 Number 2, March-April 2007
16. Richard I. McDermott M.,Kurlan J., Como P., Pearson N., Juncos J., Serrano C., PSG –A Randomized, Double-Blind, Placebo-Controlled Trial of Antidepressants in Parkinson Disease –*Neurology*, Vol 78 no. 16 1229-1236, 4/ 2012
17. Alcalay R., Caccappolo E., Mejia-Santana H., et al Serrano C (**University of Puerto Rico Co-PI**); Cognitive and Motor Function in Long-Duration PARKIN-Associated Parkinson Disease- *JAMA Neurol*. 2014;71(1):62-67
18. Avila-Ornelas, Labat E., Alfonso G., Serrano C., Fiorito F., An Extremely Aggressive Case of Marburg's disease treated with high dose Cyclophosphamide. A Case Report- *Multiple Sclerosis and Related Disorders* 2019 (31)- 51-53

XIII. Selected Invited Presentations (Does not include Students and Residents lectures)

1. Surgical Strategies in the Treatment of Dystonia - 1st Symposium of Movement Disorders – Puerto Rico Academy of Neurology – San Juan, Puerto Rico, November 1994
2. Cognitive and Behavioral Changes in Parkinson Disease – 2nd. Symposium of Movement Disorders – Puerto Rico Academy of Neurology – San Juan, Puerto Rico – November 1995
3. Panel On Minority Representation in Clinical Trials – Parkinson Disease Emerging Treatments and Research Strategies Meeting. Sponsored by The National Foundation for Brain Research.. Washington, D.C. September 1996
4. Parkinson Disease: Clinical Presentation and Treatment: 4th Preventive Medicine Meeting – Puerto Rico Geriatrics Academy; San Juan, Puerto Rico 1999
5. Neuroprotection in Parkinson Disease – Sociedad de Neurofisiología de Puerto Rico —Second International Congress of Neurology and Neurophysiology - San Juan, Puerto Rico – March 2000
6. Getting to Know Parkinson Disease – Puerto Rico Parkinson Disease Association – Carolina, Puerto Rico, March 2000
7. Parkinson Disease Pathogenesis and Neuroprotection– Internal Medicine Grand Round - University of Puerto Rico School of Medicine – San Juan, Puerto Rico, February 2001

8. Dopamine Agonists in Parkinson Disease; Sociedad de Neurofisiologia de Puerto Rico — San Juan, Puerto Rico – March 2001
9. Pharmacologic Rationale in the Management of Parkinson Disease – Family Medicine Grand Round – Federico Trilla Hospital, Carolina, Puerto Rico, 2002
10. Invited to Participate to take the course “Principles and Practice of Clinical Research” – offered by the National Institutes of Health to Minority Institutions -2003-04
11. Drug Induced Movement Disorders – Internal Medicine Grand Round – University of Puerto Rico School of Medicine – San Juan, Puerto Rico – 2003
12. Teaching Grant for the Workshop: “Botulinum Toxin in the Management of Headaches” – San Juan, Puerto Rico, May 2003
13. Treatment of Parkinson Disease – Geriatrics Grand Round – Federico Trilla Hospital, Carolina, Puerto Rico, October 2004
14. Update in the Treatment of Parkinson Disease – Veterans Affairs Hospital San Juan, Puerto Rico, 2005
15. Update in Tremors – Third Symposium of Movement Disorders - Puerto Rico Academy of Neurology – San Juan, Puerto Rico, December 2005
16. Workshop: “Botulinum Toxin in the treatment of Dystonia” - Third Symposium of Movement Disorders - Puerto Rico Academy of Neurology – San Juan, Puerto Rico, December 2005
17. New Strategies in the Treatment of Parkinson Disease – Puerto Rico Parkinson Disease Association Meeting San Lucas Hospital, Ponce, Puerto Rico, October 2006
18. Botulinum Toxin Use in the Management of Dystonia – University of Puerto Rico, Department of Physical Medicine and Rehabilitation – August 2007
19. Approach to Cervical Dystonia – Puerto Rico Academy of Neurology – San Juan, PR – November 23, 2008
20. Considerations and Challenges when Building an Effective treatment Strategy for Parkinson Disease Neurodegenerative and Musculoskeletal Diseases Symposium – Accredited by Ponce School of Medicine – San Juan, PR November 21, 2009
21. Parkinson Disease Diagnosis and Treatment: Annual Puerto Rico Parkinson Disease Association Meeting – Interamerican University Bayamon, Puerto Rico – April 2010
22. Disorders of Motor Control – Internal Medicine Department – University of Puerto Rico School of Medicine – San Juan, PR – May 2011
23. I am shaking: is this Parkinson?- Symposium for Primary Physicians- San Juan, PR- November 2012
24. Internal Medicine Grand Round- Delirium Update – Internal Medicine Department, University of Puerto Rico School of Medicine- June 2013
25. Neuropsychiatric Symptoms in the Patient with Parkinson Disease – Parkinson Congress Organized by the Puerto Rico Office for Elderly Affairs – March 2014
26. Internal Medicine Neurology series: Motor Control – March 2015
27. Fatigue in Parkinsonian Syndromes – Puerto Rico Academy of Neurology Symposium – April 11 2015, San Juan PR

28. Non-Motor Symptoms in Parkinson Disease – Puerto Rico Academy of Neurology Annual Meeting- September 27, 2016 – San Juan, Puerto Rico

29. Movement Disorders- Is it tremor? – Annual Academy of Family Physicians Meeting- April 2018- San Juan, Puerto Rico

30. Neurobehavioral Changes in the Parkinson Patient: Puerto Rico Parkinson Disease Foundation: April 2020 – Virtual Platform- San Juan, Puerto Rico

31. Functional Movement Disorders- Movement Disorders Symposium Puerto rico 2022- Sponsored by the Movement Disorders Society- Puerto Rico Academy of Neurology-April 30 2022- San Juan, Puerto rico

XIII. Languages: (Include native language, others, and level of command)

Command of Languages
Indicate level with a number

	Speaking	Writing	Comprehension
Spanish	1	1	1
English	1	1	1
Other			
*1= Good	2=Fair	3=A little	4=Not a \V.

XIV: References upon Request

Date: May 5 2022

Signature: *Carmen Serrano, MD*