

BIOGRAPHICAL SKETCH

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NAME: Monica M. Diaz

eRA COMMONS USER NAME (credential, e.g., agency login): MMDIAZ2

POSITION TITLE: Assistant Professor of Neurology

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE (if applicable)	END DATE MM/YYYY	FIELD OF STUDY
University of Miami, Miami, FL	B.S., B.A.	06/2008	Neuroscience, French
State University of New York-Downstate School of Medicine, Brooklyn, NY	M.D.	06/2014	Medicine
Louisiana State University Health, New Orleans, LA	Internship	06/2015	Internal Medicine
Yale University School of Medicine, New Haven, CT	Residency	06/2018	Neurology
University of California, San Diego, San Diego, CA	Fellowship	06/2019	Neuro-HIV/ Neuroimmunology
Medical University of South Carolina, Charleston, SC	M.S.	05/2021	Clinical Research

A. Personal Statement

I have dedicated my prior training and career as faculty to understanding and ameliorating neurological conditions in people in low-and-middle income countries through patient-oriented clinical research and clinical care. At the heart of my clinical work and research activities has been a dedicated focus on improving neurologic outcomes for people with HIV in Peru where I continue to lead an active research program since 2019. In 2019, I was awarded an NIH Fogarty Global Health Fellowship (GloCal) to work at the Universidad Peruana Cayetano Heredia (UPCH) in Lima, Peru and its affiliate clinics to investigate the frequency and risk factors for HIV-associated neurocognitive impairment (NCI) among older people with HIV in Lima, Peru. During the 1.5 years I spent living full-time in Peru and the now 6 months yearly I reside in Peru, I have been awarded grants from the Alzheimer's Association and am currently leading a study on epidemiology and risk factors for dementia in an urban-marginalized district in Lima, Peru. I have been awarded an NIH K23 award which has been instrumental in developing a cognitive screening tool adapted to the local context of Lima, Peru that can accurately identify HIV-associated NCI.

Ongoing and recently completed projects that I would like to highlight include:

K23MH131466 (NIMH)

Diaz (PI)

07/01/2022-06/30/2026

Improving identification of HIV-associated neurocognitive disorder in Latin America: A multimodal approach to HAND in Peru

AARGD-22-924896 (Alzheimer's Association)

Diaz (PI)

07/01/2022-06/30/2025

A vulnerability index for cognitive impairment risk in Latin America

R01AG082540 (NIA)

Meeker (PI); Diaz (co-I)

8/15/2023-04/30/2028

Study to establish safety, tolerability and feasibility of LM11A-31 as a neuroprotective agent in aging people living with HIV and neurocognitive impairment on antiretroviral therapy

D43TW009343; University of California Global Health Institute Program for Fellows & Scholars

Cohen (PI); Role: project PI

7/1/19-6/30/21

Characterization of HIV-associated neurocognitive impairment in older adults living with HIV in Lima, Peru

Citations that I would like to highlight are: *denotes senior author

- a. Failoc-Rojas VE, Jia DT, Gil-Zacarias M, Latorre A, Cabello R, Garcia PJ, **Diaz MM***. Risk Factors for Depression Among Middle-Aged to Older People Living With HIV in Lima, Peru. J Int Assoc Provid AIDS Care. 2024 Jan-Dec;23:23259582241273452. doi: 10.1177/23259582241273452. PMID: 39140382
- b. **Diaz MM**, Mccutchan JA, Crescini M, Tang B, Franklin D, Letendre SL, Heaton RK, Bharti AR. Longitudinal Study of Cognitive Function in People with HIV and Toxoplasmic Encephalitis or Latent toxoplasma Infection. AIDS. 2024 Aug 9. doi: 10.1097/QAD.0000000000003992. PMID: 39120536
- c. **Diaz MM**, Zacarías MG, Sotolongo P, Sanes MF, Franklin DJ, Marquine MJ, Cherner M, Cárcamo C, Ellis RJ, Lanata S, García PJ. Characterization of HIV-Associated Neurocognitive Impairment in Middle-Aged and Older Persons With HIV in Lima, Peru. Front Neurol. 2021 Jun 17;12:629257. PMID: 34220665
- d. **Diaz MM**, Cabrera DM, Gil-Zacarias M, Ramirez V, Saavedra M, Cárcamo C, Hsieh E, García PJ. Knowledge and Impact of COVID-19 on Middle-Aged and Older People living with HIV in Lima, Peru. J Int Assoc Provid AIDS Care. 2021 Jan-Dec;20:23259582211056760 (published 6 Dec 2021). Doi: 10.1177/23259582211056760. PMID: 34870508

B. Positions, Scientific Appointments and Honors

Positions and Scientific Appointments

2024 -	Associate Editor, AIDS Research and Therapy
2022 -	Appointed Vice-Chair, Global Health Section of the American Academy of Neurology (AAN)
2022 -	Appointed Member, Global Engagement Committee, American Neurological Association
2021 -	Assistant Professor of Neurology, Department of Neurology, University of North Carolina at Chapel Hill School of Medicine, Chapel Hill, North Carolina
2020 -	Medical Licensure, Medical Board of North Carolina
2019 -	Appointed Member, AIDS Clinical Trials Group, Neurology Collaborative Science Group
2019 - 2020	Fogarty Global Health Fellow, University of California Global Health Institute
2019 - 2019	Board certification, American Board of Psychiatry & Neurology
2018 - 2020	Medical Licensure, Medical Board of California
2018 - 2019	Fellow (Neuro-HIV/Neuroimmunology), University of California, San Diego, CA
2017 - 2017	Visiting Resident, Pitie-Salpetriere Hospital, Sorbonne University, Paris
2016 - 2016	Visiting Resident, Mulago Hospital, Makerere University School of Medicine, Kampala
2015 - 2018	Residency (Neurology), Yale-New Haven Hospital, New Haven, CT
2014 - 2015	Internship (Internal Medicine), Louisiana State University Hospital, New Orleans, LA
2011 - 2011	Visiting Medical Student, Joslin Diabetes Center, Harvard School of Medicine, Boston, MA
2008 - 2010	Research Assistant, Division of Cardiology, Weill Cornell Medical College, New York, NY

Honors

2022 - 2024	Clinical Research Training Scholarship, American Academy of Neurology
2021 – 2026	Simmons Scholar Award, University of North Carolina at Chapel Hill
2021	Health Disparities Research Institute Scholar, National Institute of Health NIMHD
2019 – 2021	TRANSCENDS (Training in Research for Academic Neurologists to Sustain Careers and Enhance the Numbers of Diverse Scholars) Scholars Program, American Academy of Neurology

2019 – 2020	Next Generation Supplemental Award, UC San Diego Center for AIDS Research
2019 – 2020	Developmental Award, HIV Neurobehavioral Research Center, UC San Diego
2018 – 2021	Developmental Award, Alzheimer's Disease Resource Center for Advancing Minority Aging Research, UC San Diego
2018 – 2020	Interdisciplinary Research Fellowship in NeuroAIDS, UC San Diego
2016	Johnson & Johnson Global Health Scholars Award, Yale/Stanford
2012	Medical Student Diversity Scholarship, American Academy of Neurology
2012	SUNY Downstate Alumni Engel Fund Scholarship, State University of New York Downstate Medical Center
2011	Summer Research Scholars Program in Diabetes, National Institute of Health NIDDK

C. Contribution to Science

- A. Frequency and risk factors for HIV-associated neurocognitive impairment (NCI) and depression.** I have studied the frequency and risk factors of HIV-associated neurocognitive disorders in Peru since 2019 as a through the NIH Fogarty LAUNCH program. I am currently leading a study at UNC that seeks to evaluate the immune mechanisms that lead to continued neuroinflammation, neurodegeneration and persistence of HIV within the brain. My goal is to improve diagnostics of cognitive impairment and other chronic neurological comorbidities of HIV, particularly in low-and-middle-income countries.
- Failoc-Rojas VE, Jia DT, Gil-Zacarias M, Latorre A, Cabello R, Garcia PJ, **Diaz MM***. Risk Factors for Depression Among Middle-Aged to Older People Living With HIV in Lima, Peru. *J Int Assoc Provid AIDS Care*. 2024 Jan-Dec;23:23259582241273452. doi: 10.1177/23259582241273452. PMID: 39140382
 - Diaz MM**, Mccutchan JA, Crescini M, Tang B, Franklin D, Letendre SL, Heaton RK, Bharti AR. Longitudinal Study of Cognitive Function in People with HIV and Toxoplasmic Encephalitis or Latent toxoplasma Infection. *AIDS*. 2024 Aug 9. doi: 10.1097/QAD.0000000000003992. Epub ahead of print. PMID: 39120536
 - Steinberg HE, Ramachandran PS, Diestra A, Pinchi L, Ferradas C, Kirwan DE, **Diaz MM**, Sciaudone M, Wapniarski A, Zorn KC, Calderón M, Cabrera L, Pinedo-Cancino V, Wilson MR, Asayag CR, Gilman RH, Bowman NM; Toxoplasmosis Working Group in Peru. Clinical and Metagenomic Characterization of Neurological Infections of People With Human Immunodeficiency Virus in the Peruvian Amazon. *Open Forum Infect Dis*. 2023 Oct 27;10(11):ofad515. doi: 10.1093/ofid/ofad515. PMID: 37965640
 - Diaz MM**, Zacarías MG, Sotolongo P, Sanes MF, Franklin DJ, Marquine MJ, Cherner M, Cárcamo C, Ellis RJ, Lanata S, García PJ. Characterization of HIV-Associated Neurocognitive Impairment in Middle-Aged and Older Persons With HIV in Lima, Peru. *Front Neurol*. 2021 Jun 17; 12: 629257.PMCID: PMC8248346.
- B. Neurological disorders in resource-limited settings, including in people living with HIV.** My focus is on investigating the prevalence of neurologic illnesses in resource-limited settings, including those associated with HIV. I have completed several studies assessing under-recognized neurological illnesses in sub-Saharan Africa (Kenya, Uganda) and in Peru. Seeking to determine the burden of neurological illness in sub-Saharan Africa, I implemented an observational prospective study in Uganda that analyzed the prevalence of neurologic disease in a Ugandan neurology ward. I currently lead a study of people with HIV in Lima, Peru that seeks to adapt a cognitive screening tool to detect neurocognitive impairment in older people with HIV in Lima.
- Diaz MM**, Sokhi D, Noh J, Ngugi AK, Minja FJ, Reddi P, Fèvre EM, Meyer AL. Prevalence of Epilepsy, Human Cysticercosis, and Porcine Cysticercosis in Western Kenya. *Am J Trop Med Hyg*. 2022 Mar 14;106(5):1450-1455. doi: 10.4269/ajtmh.21-0594. PMID: 38223984; PMCID: PMC9128686.
 - Steinberg HE, Bowman NM, Diestra A, Ferradas C, Russo P, Clark DE, Zhu D, Magni R, Malaga E, **Diaz M**, Pinedo-Cancino V, Ramal Asayag C, Calderón M, Carruthers VB, Liotta LA, Gilman RH, Luchini A; Toxoplasmosis working group in Peru and Bolivia. Detection of toxoplasmic encephalitis in HIV positive patients in urine with hydrogel nanoparticles. *PLoS Negl Trop Dis*. 2021 Mar 2;15(3):e0009199. PMCID: PMC7954332.

- c. Cabrera DM, **Diaz MM**, Grimshaw A, Salavaterri J, Garcia PJ, Hsieh E. Aging with HIV in Latin America and the Caribbean: A systematic review. *Curr HIV/AIDS Rep*. 2021 Feb;18(1):1-47. PMID: PMC8059362.
 - d. **Diaz MM**, Hu X, Fenton BT, Kimuli I, Lee A, Lindsey H, Bigelow JK, Maiser S, Altalib HH, Sico JJ. Prevalence of and characteristics associated with in-hospital mortality in a Ugandan neurology ward. *BMC Neurol*. 2020 Jan 31;20(1):42. PubMed Central PMID: PMC6995141.
- C. **Epidemiology of dementia and adaptation of cognitive screening tools for Peru.** I have collaborated with experts on dementia and neuropsychology in Peru have allowed me to continue to grow my interest in assessing dementias and dementia capacity in Latin America. We have published on culturally-appropriate cognitive screening tools for the detection of Alzheimer's disease, mild cognitive impairment, and frontotemporal dementia in patients with low educational levels or illiteracy in Peru. We have also found that there are discrepancies in cognitive screening tool adaptations in rural vs urban locations throughout Peru, which has prompted continued interest in continuing to improve diagnostics for detection of dementia and mild cognitive impairment in populations with low educational levels and in rural areas.
- a. Herrera-Perez E, Custodio N, **Diaz MM**, Montesinos R, Chang A, Villafuerte M, Lanata S. Epidemiology of neurocognitive disorders in adults from urban-marginalized areas: a door-to-door population-based study in Puente Piedra, Lima, Peru. *Front Public Health*. 2023 Oct 19;11:1228008. doi: 10.3389/fpubh.2023.1228008. PMID: 37927880.
 - b. **Diaz MM**, Custodio N, Montesinos R, Lira D, Herrera-Perez E, Pintado-Caipa M, Cuenca-Alfaro J, Gamboa C, Lanata S. Thyroid Dysfunction, Vitamin B12, and Folic Acid Deficiencies Are Not Associated With Cognitive Impairment in Older Adults in Lima, Peru. *Front Public Health*. 2021; 9: 676518. PMID: PMC8450418.
 - c. Custodio N, Malaga M, Chambergo-Michilot D, Montesinos R, Moron E, Vences MA, Huilca JC, Lira D, Failoc-Rojas VE, **Diaz MM***. Combining visual rating scales to identify prodromal Alzheimer's disease and Alzheimer's disease dementia in a population from a low and middle-income country. *Front Neurol*. 2022 Sep 1;13:962192. doi: 10.3389/fneur.2022.962192. PMID: 36119675; PMID: PMC9477244
 - a. Custodio N, Montesinos R, **Diaz MM**, Herrera-Perez E, Chavez K, Alva-Diaz C, Reynoso-Guzman W, Pintado-Caipa M, Cuenca J, Gamboa C, Lanata S. Performance of the Rowland Universal Dementia Assessment Scale for the Detection of Mild Cognitive Impairment and Dementia in a Diverse Cohort of Illiterate Persons From Rural Communities in Peru. *Front Neurol*. 2021; 12: 629325. PMID: PMC8292605.
- D. **Predictors of HIV-associated neuropathy, a common complication in aging with HIV.** My primary interest clinical and research interest is in neurologic infections and effects of HIV on the nervous system. I have developed and completed several studies on HIV-associated neurocognitive disorders and neuropathy among people with HIV. My work below demonstrates my interest in ameliorating chronic neurological comorbidities of people aging with HIV, particularly neuropathy. This work has demonstrated that paresthesias early in the course of HIV disease can predict neuropathic pain 12 years after symptom onset. Moreover, several predictors have been identified as risk factors for HIV-associated neuropathy.
- a. Andalibi MS, Fields JA, Iudicello JE, **Diaz MM**, Tang B, Letendre SL, Ellis RJ. Elevated Biomarkers of Inflammation and Vascular Dysfunction Are Associated with Distal Sensory Polyneuropathy in People with HIV. *Int J Mol Sci*. 2024 Apr 11;25(8):4245. doi: 10.3390/ijms25084245. PMID: 38673830
 - b. **Diaz MM**, Keltner JR, Simmons AN, Franklin D, Moore RC, Clifford D, Collier AC, Gelman BB, Marra PDC, McCutchan JA, Morgello S, Sacktor N, Best B, Notestine CF, Weibel SG, Grant I, Marcotte TD, Vaida F, Letendre S, Heaton R, Ellis RJ. Paresthesia Predicts Increased Risk of Distal Neuropathic Pain in Older People with HIV-Associated Sensory Polyneuropathy. *Pain Med*. 2021 Aug 6;22(8):1850-1856. PMID: PMC8502467.
 - c. Roda RH, Bargiela D, Chen W, Perry K, Ellis RJ, Clifford DB, Bharti A, Kallianpur AR, Oliveira MF, **Diaz MM**, Rubin LH, Gavegnano C, McArthur JC, Hoke A, Polydefkis M. Large Mitochondrial DNA Deletions in HIV Sensory Neuropathy. *Neurology*. 2021 Jul 13;97(2):e156-e165. PMID: PMC8279564.

- d. Ellis RJ, **Diaz MM**, Sacktor N, Marra C, Collier AC, Clifford DB, Calcutt N, Fields JA, Heaton RK, Letendre SL. Predictors of worsening neuropathy and neuropathic pain after 12 years in people with HIV. *Ann Clin Transl Neurol*. 2020 Jul;7(7):1166-1173. PMID: PMC7359117.
- E. **The effect of COVID-19 on older people living with HIV and neurological manifestations of COVID-19 in Peru.** Since the beginning of the COVID-19 pandemic, I have collaborated with investigators in Peru and Latin America to determine the socioeconomic, mental health and neurological effects of COVID-19 on people living with HIV and on Peruvians in the general population. Our group found that of 156 people with HIV from Lima, Peru over age 40, more than half of people with HIV employed prior to the pandemic became unemployed during the pandemic, and elevated levels of anxiety, depression and stress were reported in this population. This study enrolled participants who received regular HIV care in the two HIV clinic study sites where the current study proposes to enroll participants, demonstrating feasibility of the current proposed study. Moreover, I have led a team of young Peruvian physicians to complete a study on neurological manifestations among Peruvians with mild-to-moderate COVID-19 infection and found that more than 80% of people with acute COVID-19 infection in Peru reported headaches at symptom onset.
 - a. Desouky A, Fuentes V, Tiwari C, Usui H, Smith Ayala AH, Wilson SE, **Diaz MM***. Hospital outcomes of acute COVID-19 infection among patients with neurological conditions: a single-center study. *Front Neurol*. 2024 Jul 10;15:1434046. doi: 10.3389/fneur.2024.1434046. PMID: 39050126; PMCID: PMC11266104
 - b. **Diaz MM**, Bailey M, Garcia B, Aguilar XR, Sanchez DC. Mental health impact of the COVID-19 pandemic on patients with neurodegenerative diseases and perceived family caregiver burden in Lima, Peru. *Brain Behav*. 2024 Jan;14(1):e3361. doi: 10.1002/brb3.3361. PMID: 38236201
 - c. **Diaz MM**, Cabrera DM, Gil-Zacarias M, Ramirez V, Saavedra M, Cárcamo C, Hsieh E, Garcia PJ. Knowledge and Impact of COVID-19 on Middle-Aged and Older People Living with HIV in Lima, Peru. *J Int Assoc Provid AIDS Care*. 2021 Jan-Dec; 20: 23259582211056760. PMID: PMC8655474.
 - d. Carcamo Garcia MH, Garcia Choza DD, Salazar Linares BJ, **Diaz MM***. Neurological manifestations of patients with mild-to-moderate COVID-19 attending a public hospital in Lima, Peru. *eNeurologicalSci*. 2021 Jun; 23: 100338. PMID: PMC8046428

For a complete list of my bibliography please refer to:

<https://www.ncbi.nlm.nih.gov/myncbi/monica.diaz.1/bibliography/public/>

OTHER SUPPORT

Current grant support:

- “Improving identification of HIV-associated neurocognitive disorder (HAND) in Latin America: A multimodal approach to HAND in Peru”; Federal (NIH); 7/1/2022-6/30/2026
 - Source: NIH National Institute of Mental Health (1K23MH131466-02)
 - Role: PI
 - Amount: \$802,059 (\$198,637 per year x 4 years); 75% effort (51.1% K23; 23.95% cost-share UNC Dept of Neurology)
- 2. “Study to establish safety, tolerability and feasibility of LM11A-31 as a neuroprotective agent in aging people living with HIV and neurocognitive impairment on antiretroviral therapy”; Federal (NIH); 8/15/2023-04/30/2028
 - Source: NIH National Institute on Aging (1R01AG082540-01A1); PI Meeker
 - Role: Co-investigator
 - Amount: \$698,919 per year; 0% effort (Years 1 & 2); 20% effort (Years 3-5)
- 3. “A vulnerability index for cognitive impairment risk in Latin America”; Non-federal funding; 7/1/2022-6/30/2025
 - Source: Alzheimer’s Association (AARGD-22-924896)

- Role: PI
- Amount: \$150,000 (\$50,000/year x 3 years); 2.5% effort

4 . “Assessing Dementia and Frailty among Older Persons in rural Eastern Uganda”; Non-federal funding; 2/01/2023-1/31/2026

- Source: Alzheimer’s Association (AARGD-NTF-22-975156)
- Role: Co-investigator
- Amount: 1.5% effort

5. “Neurofilament light as a marker of synaptic loss in cognitively impaired older people with HIV “; Non-federal funding; 7/1/2022-3/1/2025

- Source: American Academy of Neurology Clinical Research Training Scholarship (Award# N/A)
- Role: PI
- Amount: \$170,000 (\$85,000/year x 2 years); 2.5% effort

Pending Grant Support:

- “A Predictive Risk Score for Longitudinal Neurocognitive Decline in Older People Living with HIV in Peru”; Federal Funding (NIH); 04/01/2025-03/31/2030 – **NOT DISCUSSED**
 - Source: R01 submission; PI Diaz
 - Role: PI
 - Effort: 40% effort per year
- “Brain structure and function and the CNS HIV reservoir in older people living with HIV”; Federal Funding (NIH); 07/01/2025-06/30/2026 – **To be reviewed, study section 2/2025**
 - Source: R21 submission; contact PI Diaz, co-PI Dayan
 - Role: contact PI
 - Effort: 10% effort per year
- “Non-invasive detection of early Alzheimer’s Disease using biomarkers in tears in a low-to-middle income country”; Federal Funding (NIH); 07/01/2025-06/30/2026 – **To be reviewed, study section 2/2025**
 - Source: R21 submission; PI Diaz
 - Role: PI
 - Effort: 12% per year