**BIOGRAPHICAL SKETCH**

Provide the following information for the Senior/key personnel and other significant contributors.

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| --- | --- | --- | --- | --- |
| NAME: Juan G Santiago Moreno | | | | |
| eRA COMMONS USERNAME: JSMORENO | | | | |
| POSITION TITLE: Graduate Student | | | | |
| EDUCATION/TRAINING: | | | | |
| INSTITUTION AND LOCATION | DEGREE | Start Date | Completion Date | FIELD OF STUDY |
| University of Florida, Gainesville, Florida | BS, major  BA, minor  MS | 07/2013  08/2013  08/2016 | 05/2016  05/2016  05/2018 | Behavioral and Cognitive Neuroscience  Spanish  Medical Sciences |
| University of Colorado, Aurora, Colorado | MD  PhD | 08/2018  08/2018 | 05/2026  04/2024 | Medicine, In progress  Neuroscience, In progress |

1. **Personal Statement**

The world we interact with is full of little mysteries. There is always a story and a mechanism behind every person, place, and thing. I have always been fascinated by unraveling those little mysteries. As a child, I was always taking my toys apart to see if I could put them back together again. I was never satisfied with the world as it was presented to me, often to my parents’ and teachers’ annoyance. If I encountered something interesting, I would exhaust my resources learning everything about it. Everything is it’s own rabbit hole waiting to be uncovered. People were no exception. As I matured, surface-level curiosity about different cultures and traditions turned introspective. I wanted to know whether other people experienced things the same way I do, how life events shaped who I am, and how they shape other people. Seeing two of my grandparents become almost unrecognizable after a stroke and a rare neurodegenerative disease made the physical and fragile nature of our existence abundantly clear.

Despite coming from working class, immigrant parents with little formal education past high school, I decided that I wanted to make a career out of answering those types of questions and using those answers to help others. I felt that a career in research would allow me to spend my life asking these questions and providing answers for others to learn more and continue to ask more questions. I felt that a career in medicine would allow me to personally interact with people who had their own questions and use my expertise to give them answers that could improve their lives.

During my first year at the University of Florida, I joined the lab of Dr. Sylvain Dore to get a taste of neuroscience research and see how much I really enjoyed it. In that lab, I learned about the pathophysiology of stroke, and the mechanisms by which permanent damage could be ameliorated. I learned how to use techniques such as behavioral analysis and histology to evaluate differences in experimental treatments. I was even fortunate enough to publish my first academic paper. However, after almost two years int his lab, I decided to seek a different research environment in a smaller lab where I could learn new techniques and explore a slightly different approach to neuroscience. I joined the lab of Dr. Gordon S. Mitchell, which studies changes in respiratory plasticity resulting from treatment with acute intermittent hypoxia. It was in Dr. Mitchell’s lab that I decided to pursue a master’s degree and completed my thesis. [Description of Thesis]

1. **Positions and Honors**

**Research Experience**

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| --- | --- |
| 2014 – 2016 | Undergraduate Researcher, Lab of Dr. Sylvain Dore, Center for Translational Research in Neurodegeneration, UF |
| 2016 | Undergraduate Researcher, Lab of Dr. Gordon S. Mitchell, Center for Respiratory Research and Rehabilitation, UF |
| 2016 – 2018 | Master’s Student, Lab of Dr. Gordon S. Mitchell, Center for Respiratory Research and Rehabilitation, UF |
| 2019 | Rotation Student, Lab of Dr. Cristin G. Welle, Department of Neuroscience, CU |
| 2020 | Rotation Student, Lab of Dr. Daniel J. Denman, Department of Neuroscience, CU |
| 2020 – | Graduate Student, Lab of Dr. Daniel J. Denman, Department of Neuroscience, CU |

**Employment and Teaching**

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| --- | --- |
| 2012 – 2015 | Grocery Clerk, Publix Supermarkets |
| 2014, 2015 | Summer Undergraduate Researcher, Lab of Dr. Sylvain Dore, Center for Translational Research in Neurodegeneration, UF |
| 2015 – 2016 | Support Technician, Shands Hospital, UF |
| 2018 – 2019 | Instructor, SABES Intermediate Medical Spanish Course |
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**Professional Memberships**

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| --- | --- |
| 2016 – 2018 | Member, Center for Respiratory Research and Rehabilitation, UF |
| 2017 – 2018 | Member, The American Physiological Society |
| 2018 – | University of Colorado Medical Scientist Training Program |
| 2018 – | Latino Medical Student Association (President emeritus, Founding member of CU chapter) |

**Community Service**

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| --- | --- |
| 2015 | Undergraduate Volunteer, UF Health – Movement Disorders Clinic, Gainesville, FL |
| 2015 – 2017 | Care Coordinator, Mobile Outreach Clinic, Gainesville, FL |
| 2016 – 2018 | Biomedical Sciences Graduate Program Diversity Committee, Gainesville, FL |
| 2019 | Suture Workshop Leader, La Raza Youth Conference, Aurora, CO |
| 2019 | Workshop Presenter, DREAMers in STEM Summit, Aurora, CO |
| 2019 | Workshop Presenter, La Raza Youth Conference, Aurora, CO |

**Honors and Awards**

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| 2013 – 2016 | Florida Bright Futures Academic Scholar |
| 2017 | UF Mobile Outreach Clinic Volunteer Recognition Award |
| 2017 | American Physiological Society Minority Travel Fellowship |
| 2017 | Graduate Student Council Travel Grant |
| 2018 – 2020 | T32 Predoctoral Training Grant, NIH |
| 2018 | CU Anschutz Ethics Case Competition; First Place |
| 2019 | CU Anschutz Ethics Case Competition; First Place |

1. **Contributions to Science**

**Publications**

Tekriwal, A., Afshar, N.M., **Santiago-Moreno J.**, Kuijper, F.M., Kern D.S., Halpern C.H., Felsen, G., Thompson, J.A. (2019). Neural Circuit and Clinical Insights from Intraoperative Recordings During Deep Brain Stimulation Surgery. *Brain Sciences.*

Leclerc, J. L., **Santiago-Moreno, J**., Dang, A., Lampert, A. S., Cruz, P. E., Rosario, A. M., ... & Doré, S. (2016). Increased brain hemopexin levels improve outcomes after intracerebral hemorrhage. *Journal of Cerebral Blood Flow & Metabolism*.

Rastogi, V., **Santiago-Moreno, J**., & Doré, S. (2014). Ginseng: a promising neuroprotective strategy in stroke. *Frontiers in cellular neuroscience*.

**Presentations**

**Santiago Moreno, J.**, (2019, April) DREAMers in STEM Summit, Aurora, CO

**Santiago Moreno, J.**, (2019, April) La Raza Youth Conference, Denver, CO

**Santiago-Moreno, J.**, (2018, March) *Effects of repetitive acute intermittent hypoxia on lesion volume following cervical spinal cord injury.* Thesis Defense, University of Florida, Gainesville, FL

**Santiago-Moreno, J.**, Satriotomo, I., Urdaneta, I. Dougherty, B., Springborn, S., Kopp, E., Sullivan, L., Mitchell, G.S. (2017, April) *Six months of repetitive acute intermittent hypoxia drives serotonergic axon growth through a spinal injury*. Oral Presentation at Respiratory Section Mixer, Experimental Biology, Chicago, IL

**Santiago-Moreno, J.**, Satriotomo, I., Dougherty, B.J., Springborn, S., Kopp, E., Sullivan, L., Mitchell, G.S. (2017, April) *Repetitive acute intermittent hypoxia affects lesion volume after cervical spinal injury.* Poster presented at Respiratory Section Mixer, Experimental Biology, Chicago, IL

**Santiago-Moreno, J.**, Satriotomo, I., Dougherty, B.J., Springborn, S., Kopp, E., Sullivan, L., Mitchell, G.S. (2017, February) *Repetitive acute intermittent hypoxia affects lesion volume after cervical spinal injury.* Poster presented at Neuromuscular Plasticity Symposium, Gainesville, FL

**Santiago-Moreno, J.**, Satriotomo, I., Dougherty, B.J., Springborn, S., Kopp, E., Sullivan, L., Mitchell, G.S. (2017, January) *Repetitive acute intermittent hypoxia affects lesion volume after cervical spinal injury.* Poster presented at CRRR Center Kickoff, Gainesville, FL

**Santiago-Moreno, J.**, Satriotomo, I., Dougherty, B.J., Springborn, S., Kopp, E., Sullivan, L., Mitchell, G.S. (2016, March) *Repetitive acute intermittent hypoxia alters lesion volume after cervical spinal injury.* Poster presented at University of Florida Undergraduate Research Symposium, Gainesville, FL

Leclerc, J., Dang, A., **Santiago-Moreno, J.**, Lampert, A., Doré, S. (2016, May) *Modulation of Neuroinflammation by Haptoglobin Reduces Oxidative Stress and Improves Intracerebral Hemorrhage Outcomes****.*** Poster and Oral presentation at UF Department of Anesthesiology Celebration of Research, Gainesville, FL

Leclerc, J., Dang, A., **Santiago-Moreno, J.**, Doré, S. (2015, May) *Overexpression of Soluble Hemopexin as a Therapeutic Tool against Intracerebral Hemorrhage*. Poster presentation at UF College of Medicine Celebration of Research, Gainesville, FL

Leclerc, J., Dang, A., **Santiago-Moreno, J.**, Doré, S. (2015, February) *Overexpression of Soluble Hemopexin as a Therapeutic Tool against Intracerebral Hemorrhage*. Poster presentation at UF College of Medicine Celebration of Research, Gainesville, FL

**Abstracts**

Marciante, A.B., Kelly, M.N., Ciesla, M.C., **Santiago-Moreno, J.**, Allen, L.L., Gonzalez-Rothi, E.J., Lewis, J. and Mitchell, G.S. (2020), Intermittent Hypoxia Differentially Modulates Endogenous Tau Phosphorylation in Rats. The FASEB Journal, 34: 1-1. doi:[10.1096/fasebj.2020.34.s1.03572](https://doi.org/10.1096/fasebj.2020.34.s1.03572)

Leclerc, J., Lampert, A.S., Phillips, H., Esfandiary, T., Dang, A., **Santiago-Moreno, J.**, Dore, S. (2019). Abstract WMP106: Haptoglobin is Present as Zonulin in the Brain and Overexpression Improves Intracerebral Hemorrhage Outcomes. *STROKE*

Shin, D. H., Murad, G., **Santiago, J.**, Gul, S., & Kubilis, P. (2018). Early VTE chemoprophylaxis in TBI patients is safe and effective. *JOURNAL OF NEUROSURGERY*, *128*(4), 43-44.

Gonzalez-Rothi, E.J., Allen, L.A., **Santiago-Moreno, J.**, Ciesla, M.C., Asa, Z.A., Smith, K.N., Tadjalli, A., Perim, R., Santiago, J.V., Holland, A.E. and Stefan, K.A. (2018).Long-term Delivery of “Low Dose” Repetitive Intermittent Hypoxia is Not Associated with Detectable Pathology. *The FASEB Journal*

**Santiago-Moreno, J.G.**, Satriotomo, I., Dougherty, B.J., Springborn, S., Kopp, E., Sullivan, L. and Mitchell, G.S. (2017) Repetitive Acute Intermittent Hypoxia Affects Lesion Volume After Cervical Spinal Injury. *The FASEB Journal*

Tadjalli, A., Perim, R., Satriotomo, I., **Santiago-Moreno, J.**, Seven, Mitchell, Y., G.S. (2017). LPS-induced systemic inflammation impairs phrenic long-term facilitation via okadaic acid-sensitive protein phosphatase activity. *The FASEB Journal*

Leclerc, J., Dang, A., **Santiago-Moreno, J.**, & Dore, S. (2016). Abstract TP102: Modulation of Neuroinflammation by Haptoglobin Reduces Oxidative Stress and Improves ICH Outcomes.

Leclerc, J., **Santiago-Moreno, J.**, Dang, A., & Dore, S. (2016). Abstract WP99: Specific and Local Overexpression of Hemopexin Improves Anatomical and Functional Outcomes in the Autologous Blood Intracerebral Hemorrhage Model. *STROKE*

Leclerc, J. L., Dang, A., **Santiago-Moreno, J.**, & Dore, S. (2015, February). Overexpression of Soluble Hemopexin as a Therapeutic Tool against Intracerebral Hemorrhage. *STROKE*

Leclerc, J. L., Dang, A., **Santiago-Moreno, J.**, & Doré, S. (2015). Abstract W P237: Overexpression of Soluble Hemopexin as a Therapeutic Tool against Intracerebral Hemorrhage. *STROKE*

1. **Scholastic Performance**

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| --- | --- | --- |
| YEAR | COURSE TITLE | GRADE |
| UNIVERSITY OF FLORIDA, GRADUATE COURSES | | |
| 2016 | Eukaryotic Molecular Biology and Genetics | B |
| 2016 | Respiratory Journal Club | A |
| 2016 | Professional Development in Research | Pass |
| 2016 | Principles in Neuroscience 1 | B+ |
| 2016 | Independent Studies | A |
| 2016 | Biotechnology Seminar | A- |
| 2017 | Principles of Neuroscience 3 | A |
| 2017 | Biotechnology Seminar | A |
| 2017 | Principles of Neuroscience 2 | A |
| 2017 | Physiology and Functional Genomics 1 | A |
| 2017 | Physiology and Functional Genomics 2 | A |
| 2017 | Independent Studies | A |
| 2018 | Independent Studies | A |
| 2018 | Supervised Research | A |
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| UNIVERSITY OF COLORADO, MEDICAL SCHOOL COURSES | | |
| 2018 – 2019 | Foundations of Doctoring I | Pass |
| 2018 | Human Body | Pass |
| 2018 – 2019 | Problem Based Learning – Phase I | Pass |
| 2019 | Foundations of Doctoring I | Pass |
| 2019 | Interprofessional Education – Phase I | Pass |
| 2019 | SABES Spanish Immersion | Pass |
| 2019 | Digestive, Endocrine, Metabolic Systems | Pass |
| 2019 | Blood and Lymph | Pass |
| 2019 | Disease and Defense | Pass |
| 2019 | Cardiovascular Pulmonary Renal | Pass |
| 2019 – 2020 | Problem-based Learning – Phase II | Pass |
| 2019 – 2020 | Foundations of Doctoring II | Pass |
| 2020 | Interprofessional Education – Phase II | Pass |
| 2020 | Nervous System | Pass |
| 2020 | Infectious Disease | Pass |
| 2020 | Life Cycle | Pass |
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| UNIVERSITY OF COLORADO, GRADUATE SCHOOL COURSES | | |
| 2018 | MSTP Seminar | A |
| 2018 | Core I: Foundations in Biomedical Science | A- |
| 2018 | Molecules to Medicine Seminar | Pass |
| 2018 | Evolutionary Genetics and Genomics | A- |
| 2018 | Practical Data Analysis in R | A |
| 2019 | Blood and Lymph | B+ |
| 2019 | Disease and Defense | A- |
| 2019 | MSTP Seminar | A |
| 2019 | MSTP Advanced Topics | Pass |
| 2019 | MSTP Seminar | A |
| 2020 | MSTP Seminar | A |

**Candidate Statement:**

In August, 2020, I will begin working towards my PhD from the Department of Neuroscience at the University of Colorado. Earning the NIMHD Diversity Supplement Award would support my graduate training, including tuition and fees, support, provide travel opportunities, and cover laboratory expenses related to my research project

Although I have just recently joined Dr. Denman’s lab, my undergraduate and previous graduate research career have taught me the basics of being a good scientist. I spent time learning basic techniques such as survival surgeries and post-operative care, perfusions, live and fixed tissue harvesting, tissue sectioning, immunohistochemistry, and epifluorescence microscopy. In addition to wet lab techniques, I have learned the importance of communication,

teamwork, and effective study design. The skills I have learned have formed a solid base for me

to expand my research questions and implement more advanced techniques.

During my master’s program, I wrote my thesis on a project evaluating how acute intermittent hypoxia might affect structural plasticity following spinal cord injury and it’s implications towards neural regeneration.

During my PhD, I will be transitioning from my previous work that focused on molecular mechanisms that underlie neurophysiology, to large population electrophysiology in the visual system. While there is a fair amount of overlap with many of the lab techniques I’ve already learned, I will also be learning a wide array of new techniques and approaches.

This supplement will open research opportunities that I will use, not only to enrich my thesis

project, but also allow me to contribute to the study of neuroscience and facilitate my goal of becoming a physician-scientist.

Juan G Santiago Moreno