BIOGRAPHICAL SKETCH

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NAME: Miguel A. Perez-Pinzon, PhD, FAHA

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

POSITION TITLE: Peritz Scheinberg Endowed Professor in 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)*	Completion Date MM/YYYY	FIELD OF STUDY
University of Panama	B.Sc.	1983	Biology
University of Miami (RSMAS)	M.Sc.	1987	Marine Biology
University of Miami (RSMAS/Neurology)	PhD	1991	Neuroscience
New York University	Postdoc	1992	Neurophysiology
Stanford University	Postdoc	1993	Neuroscience

A. Personal Statement

Since establishing my independent team at the University of Miami in 1995, my significant contributions to cerebral ischemia pathophysiology have been instrumental. As the current Director of the Peritz Scheinberg's Cerebral Vascular Disease Research Laboratories at the University of Miami since 2005, I maintain the legacy of the institution founded approximately 50 years ago by Dr. Peritz Scheinberg, the first Chair of Neurology at the University of Miami. Esteemed professionals like Kyuya Kogure, Mordecai Globus, Dalton Dietrich, and Myron Ginsberg have been associated with this renowned center, enhancing its stature in the neuroscience community.

In my capacity as the Peritz Scheinberg Endowed Professor in Neurology and the Vice-Chairman of Basic Sciences in the Department of Neurology, I have devoted 29 years to exploring the synaptic, cognitive, vascular, and mitochondrial dysfunctions that follow cerebral ischemia. My laboratory's rigorous study of neuroprotective signaling pathways and the effects of physical exercise on cognitive function post-cerebral ischemia aims to develop novel therapeutic strategies for stroke and cardiac arrest and VCID patients.

My application of diverse techniques, including imaging, electrophysiology, behavior, stereotaxic surgeries, and molecular biology, further exemplifies my dedication to this research. My global leadership roles, including my tenure as Chair of the program committee for the International Stroke Conference, the largest stroke conference worldwide, and my involvement in the field of Ischemic Conditioning, further testify to my commitment to the field.

I have additionally championed academic discourse through my editorial roles, including serving as the inaugural Editor-in-Chief for the journal Conditioning Medicine and co-editing the book Innate Tolerance in the CNS: Translational Neuroprotection by Pre- and Post-Conditioning. These contributions have shaped the direction of scientific understanding in the field of neuroscience.

Beyond my research endeavors, my exceptional mentorship has shaped the careers of many PhD, MD/PhD students, postdoctoral fellows, and junior faculty members. My Mentor of the Year award in 2020 from the Neuroscience Program at the University of Miami highlights my success in fostering the next generation of neuroscience researchers.

My unwavering service to the neuroscience research community, through significant contributions to the International Society for Cerebral Blood Flow and Metabolism, the International Stroke Conference, NIH study sections, and AHA committees, accentuates my dedication to advancing neurological research and clinical education.
At the University of Miami, my leadership initiatives have consistently driven research and supported junior faculty, placing the department among the top-ranking neurology departments in NIH funding. My commitment to promoting effective and progressive training of future researchers is further underscored by my service to the Neuroscience Program Steering Committee.
In summary, my long track record of high impact publications in the field and my enduring dedication to mentorship, service, and leadership within the neuroscience research community demonstrate my worthiness for the grant. I firmly believe that my commitment to advancing the field, promoting diversity, and nurturing the next generation of neuroscience researchers will ensure the grant's significant and beneficial impact on the neuroscience community at large.

Projects relevant to this application include:

2RF1NS034773-20 (former R01 NS34773) Perez-Pinzon (PI) 1/1/97-8/31/25
NIH/NINDS
Ischemic Preconditioning: Mechanisms of Neuroprotection
The major goal of this project is to study the signaling pathways that lead to ischemic preconditioning neuroprotection.

R01 NS45676-11 Perez-Pinzon (PI) 6/1/07-5/31/25
NIH/NINDS
Mechanisms of Neuroprotection against Cardiac Arrest
The major goal of this project is to study the mechanisms of synaptic and vascular dysfunction and putative neuroprotective agents following cardiac arrest.

5R01NS122808-03 Dave, K (PI) 9/1/21-6/30/26
NIH/NINDS
Cerebral ischemia and exposure to recurrent hypoglycemia in diabetes
Role: Co-Investigator

Past funding:

R01NS097658-03 Perez-Pinzon (PI) 6/1/17-11/30/23
NIH/NINDS
Metabolic master regulators for ischemic neuroprotection
The main goals were the elucidation of signaling pathways involved in the fate of brain mitochondria following cerebral ischemia.

20K11 Perez-Pinzon (PI) 5/1/20-4/30/23
Florida Dept of Health/James & Esther King Discovery Research Grant
Strategies to ameliorate cognitive decline following cerebral ischemia in nicotine-exposed rats.

5R21AT010388-02 Young, J (PI) 6/1/19-5/30/21
NIH/NCCIH
This study seeks to study the effect of resveratrol administration on posttranslational modifications of MeCP2, the binding of MeCP2 to chromatin and to its cognate partners
Role: Co-Investigator

9JK08 Dave, K (PI) 10/1/19-3/31/22
Florida Dept of Health/ James & Esther King Discovery Research Grant
Improving post-intracerebral hemorrhage outcomes in nicotine-exposed rats using red blood cell microparticles
Role: Co-Investigator

20K09 Raval, A (PI) 5/1/20-4/30/23
Florida Dept of Health / James & Esther King Discovery Research Grant
Nicotine alters brain metabolism and exacerbates ischemic brain damage
Role: Co-Investigator

B. Positions, Scientific Appointments, and Honors

PROFESSIONAL APPOINTMENTS

1995 – 1997 Research-track Assistant Professor, Department of Neurology, University of Miami School of Medicine.
1997 – 2001 Tenure-track Assistant Professor, Department of Neurology, University of Miami School of Medicine.1999 – 2006 Co-Director of Cerebral Vascular Disease Center, University of Miami School of Medicine, Miami, Fl (Dr. Ginsberg, Director)
2001 – 2004 Tenure-track Associate Professor, Department of Neurology, University of Miami School of Medicine.
2004-2006 Tenured Associate Professor, Department of Neurology, University of Miami School of Medicine.2005 – present Director of Cerebral Vascular Disease Center, University of Miami, Miller School of Medicine, Miami, Fl
2006 – present Professor, Department of Neurology, University of Miami Miller School of Medicine, Miami, Fl
2007 – 2010 Associate Chair for Basic Science, Department of Neurology, University of Miami Miller School of Medicine, Miami, FL
2010 – present Vice-Chair for Basic Science, Department of Neurology, University of Miami Miller School of Medicine, Miami, Fl
2019 – present Peritz Scheinberg Endowed Professor in Neurology, University of Miami Miller School of Medicine, Miami, Fl

AWARDS AND OTHER PROFESSIONAL ACTIVITIES:

1982, 1983 Fellowships (2), Smithsonian Tropical Research Institute (STRI). Panama 1986 Fellowship, Fishing and Conservation Trust. Miami, Fl
1989–present Member of Society for Neuroscience (1989), International Society on Oxygen Transport to Tissues (1996), International Society of Cerebral Blood Flow and Metabolism (1995), American Association for the Advancement of Science (1996) and American Heart Association (2000)
1991 Koczy Fellowship, (Graduate student of the year) for excellence in graduate research and education, Rosenstiel School of Marine and Atmospheric Science, Univ of Miami, Miami, Fl
1991 Invited speaker at the Society for Experimental Biology in Birmingham, U.K.
2000 – 03 NIH-NINDS BDCN-3 Study Section reviewer
2000 Invited speaker at the Pharmacology of Cerebral Ischemia Symposium. Marburg, Germany.
2002 Grass Traveling Scientist for the Alaska Chapter of the Society for Neuroscience. Society for Neuroscience
2004 – 08 Brain 2 American Heart Association Grant Reviewer
2006 – 10 NIH-NINDS BINP Study Section
2014 NIH-NINDS BINP Study Section Ad-hoc member
2007 – 08 International Stroke Conference Program Committee: Co-Chair–Experimental Mechanisms and Models.
2008 – 10 International Stroke Conference Program Committee: Chair–Experimental Mechanisms and Models.
2009 Associate Editor for the journal: Translational Stroke Research
2010 Assistant Editor for the journal: Stroke
2010 Elected as Fellow of the American Heart Association/American Stroke Association (FAHA)
2012-13 Co-Chair of the Program Committee for the International Society of Cerebral Blood Flow and Metabolism (Brain 13), Shanghai, China
2014 Member of the Program Committee for the International Society of Cerebral Blood Flow and Metabolism (Brain 15), Vancouver, Canada
2016-18 Vice-Chair of the Program Committee for the International Stroke Conference.
2018-20 Chair of the Program Committee for the International Stroke Conference.
2020–23 NIH-NINDS BINP Study Section
2020–Now Associate Editor for Basic Science in the journal Stroke

C. Contribution to Science:

1. My group has also been a leader in the field of ischemic preconditioning. We have been studying compounds such as resveratrol and certain PKC isoforms to pharmacologically precondition *in vivo* and *in vitro* to lessen ischemia-induced neuronal damage. We sought to identify novel preconditioning pathways to alleviate ischemia, so therapies can be developed based on this mechanistic approach.
   - Koronowski, K. B., Dave, K. R., Saul, I., Camarena, V., Thompson, J. W., Neumann, J. T., Young, J. I. & Perez-Pinzon, M. A. Resveratrol Preconditioning Induces a Novel Extended Window of Ischemic Tolerance in the Mouse Brain. *Stroke* **46**, 2293-2298, (2015). PMID:26159789
   - Lopez-Morales, M. A., Escobar, I., Saul, I., Jackson, C. W., Ferrier, F. J., Fagerli, E. A., Raval, A. P., Dave, K. R. & Perez-Pinzon, M. A. Resveratrol Preconditioning Mitigates Ischemia-Induced Septal Cholinergic Cell Loss and Memory Impairments. *Stroke* 54, 1099-1109, (2023). PMID:36912143
   - Escobar, I., Xu, J., Jackson, C. W., Stegelmann, S. D., Fagerli, E. A., Dave, K. R. & Perez-Pinzon, M. A. Resveratrol Preconditioning Protects Against Ischemia-Induced Synaptic Dysfunction and Cofilin Hyperactivation in the Mouse Hippocampal Slice. *Neurotherapeutics*, (2023). PMID:37208551
   - Raval, A. P., Dave, K. R., Mochly-Rosen, D., Sick, T. J. & Perez-Pinzon, M. A. Epsilon PKC is required for the induction of tolerance by ischemic and NMDA-mediated preconditioning in the organotypic hippocampal slice. J Neurosci 23, 384-391, (2003). PMID:12533598
2. A major area of research in my group is to define the pathological mechanisms in the brain that ensue following cardiac arrest. We have targeted multiple aspects of the pathology that include synaptic dysfunction, cognitive impairments and cerebral blood flow derangements. We have shown that PKCε activation provides neuroprotection while activation of PKCδ is detrimental to the ischemic brain. Overall, my studies provide a potential pathway of ischemia-mediated neuroprotection by the regulation of cerebral blood flow from evaluating blood flow dynamics, neuroprotection, and functional neuronal outcomes/firing properties based on electrophysiological studies.
   - Ferrier, F. J., Saul, I., Khoury, N., Ruiz, A. J., Lao, E. J. P., Escobar, I., Dave, K. R., Young, J. I. & Perez-Pinzon, M. A. Post cardiac arrest physical exercise mitigates cell death in the septal and thalamic nuclei and ameliorates contextual fear conditioning deficits in rats. *J Cereb Blood Flow Metab* 43, 446-459, (2023). PMID:36369732
   - Stradecki-Cohan, H. M., Youbi, M., Cohan, C. H., Saul, I., Garvin, A. A., Perez, E., Dave, K. R., Wright, C. B., Sacco, R. L. & Perez-Pinzon, M. A. Physical Exercise Improves Cognitive Outcomes in 2 Models of Transient Cerebral Ischemia. *Stroke* 48, 2306-2309, (2017). PMID:28663509
   - Cohan, C. H., Neumann, J. T., Dave, K. R., Alekseyenko, A., Binkert, M., Stransky, K., Lin, H. W., Barnes, C. A., Wright, C. B. & Perez-Pinzon, M. A. Effect of cardiac arrest on cognitive impairment and hippocampal plasticity in middle-aged rats. PLoS One 10, e0124918, (2015). PMID:25933411
   - Lin, H. W., Gresia, V. L., Stradecki, H. M., Alekseyenko, A., Dezfulian, C., Neumann, J. T., Dave, K. R. & Perez-Pinzon, M. A. Protein kinase C delta modulates endothelial nitric oxide synthase after cardiac arrest. J Cereb Blood Flow Metab 34, 613-620, (2014). PMID:24447953
3. My group has been studying mitochondrial dysfunction for approximately 20 years. In the late 1990's we carried out several studies that defined the effect of anoxia/ischemia and reperfusion on mitochondrial electron carrier hyperoxidation, including NADH. We also published simultaneously with the Pak Chan's group in 1999, the first study demonstrating cytochrome c release from mitochondria following cerebral anoxia/ischemia. For the last 15 years, my group has done seminal work on the signaling pathways that lead to mitochondrial dysfunction and apoptosis and on signaling pathways that lead to ischemic neuroprotection.
   - Jackson, C. W., Xu, J., Escobar, I., Saul, I., Fagerli, E., Dave, K. R. & Perez-Pinzon, M. A. Resveratrol Preconditioning Downregulates PARP1 Protein to Alleviate PARP1-Mediated Cell Death Following Cerebral Ischemia. *Transl Stroke Res*, (2023). PMID:36633794
   - Xu, J., Khoury, N., Jackson, C. W., Escobar, I., Stegelmann, S. D., Dave, K. R. & Perez-Pinzon, M. A. Ischemic Neuroprotectant PKCepsilon Restores Mitochondrial Glutamate Oxaloacetate Transaminase in the Neuronal NADH Shuttle after Ischemic Injury. *Transl Stroke Res* 11, 418-432, (2020). PMID:31473978
   - Morris-Blanco, K. C., Cohan, C. H., Neumann, J. T., Sick, T. J. & Perez-Pinzon, M. A. Protein kinase C epsilon regulates mitochondrial pools of Nampt and NAD following resveratrol and ischemic preconditioning in the rat cortex. *J Cereb Blood Flow Metab* **34**, 1024-1032, (2014). PMID:24667915

- Dave, K. R., DeFazio, R. A., Raval, A. P., Torraco, A., Saul, I., Barrientos, A. & Perez-Pinzon, M. A. Ischemic preconditioning targets the respiration of synaptic mitochondria via protein kinase C epsilon. J Neurosci 28, 4172-4182, (2008). PMID:18417696

4. Dr. Perez-Pinzon has been participant in many leadership scientific statements in the field.
   - Iadecola, C., Smith, E. E., Anrather, J., Gu, C., Mishra, A., Misra, S., Perez-Pinzon, M. A., Shih, A. Y., Sorond, F. A., van Veluw, S. J., Wellington, C. L., American Heart Association Stroke Council Council on Arteriosclerosis, T., Vascular Biology Council on Cardiovascular, R., Intervention Council on Hypertension Council on, L. & Cardiometabolic, H. The Neurovasculome: Key Roles in Brain Health and Cognitive Impairment: A Scientific Statement From the American Heart Association/American Stroke Association. *Stroke* 54, e251-e271, (2023). PMID:37009740
   - Rose, J. J., Krishnan-Sarin, S., Exil, V. J., Hamburg, N. M., Fetterman, J. L., Ichinose, F., Perez-Pinzon, M. A., Rezk-Hanna, M., Williamson, E., American Heart Association Council on Cardiopulmonary, C. C. P., Resuscitation, Council on, E., Prevention, Council on Cardiovascular, R., Intervention, Council on, L., Cardiometabolic, H., Council on Peripheral Vascular, D., Stroke, C., Council on Arteriosclerosis, T. & Vascular, B. Cardiopulmonary Impact of Electronic Cigarettes and Vaping Products: A Scientific Statement From the American Heart Association. *Circulation*, (2023). PMID:37458106
   - Bosetti, F., Koenig, J. I., Ayata, C., Back, S. A., Becker, K., Broderick, J. P., Carmichael, S. T., Cho, S., Cipolla, M. J., Corbett, D., Corriveau, R. A., Cramer, S. C., Ferguson, A. R., Finklestein, S. P., Ford, B. D., Furie, K. L., Hemmen, T. M., Iadecola, C., Jakeman, L. B., Janis, S., Jauch, E. C., Johnston, K. C., Kochanek, P. M., Kohn, H., Lo, E. H., Lyden, P. D., Mallard, C., McCullough, L. D., McGavern, L. M., Meschia, J. F., Moy, C. S., Perez-Pinzon, M. A., Ramadan, I., Savitz, S. I., Schwamm, L. H., Steinberg, G. K., Stenzel-Poore, M. P., Tymianski, M., Warach, S., Wechsler, L. R., Zhang, J. H. & Koroshetz, W. Translational Stroke Research: Vision and Opportunities. *Stroke* **48**, 2632-2637, (2017). PMID:28751554

Complete List of Published Work in MyBibliography:
https://www.ncbi.nlm.nih.gov/pubmed/?term=perez-pinzon