

Professor Pablo M. Peixoto

Baruch College - CUNY
Natural Sciences
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Education

- Ph D, University of Extremadura, 2006.
Major: Cell Biophysics
Dissertation Title: Structure-Function Studies of TIM22: The Protein Translocase of the Mitochondrial Inner Membrane
- MSc, Federal University of Uberlandia, 2002.
Major: Biochemistry
Dissertation Title: Transcriptome library of the adult *Apis mellifera* brain
- BSc, Federal University of Uberlandia, 2000.
Major: Biological Sciences
Dissertation Title: Characterization of myosin-V in the brain regions of *Apis mellifera*

Professional Positions

Academic

- Assistant Professor, Baruch College. (September 2013 - Present).
- Post-doctoral Associate, Weill Cornell Medical School. (October 3, 2011 - July 1, 2013).
- Associate Research Scientist, New York University. (June 2, 2009 - September 30, 2011).
- Assistant Research Scientist, New York University. (February 4, 2007 - June 1, 2009).

Licensures and Certifications

- FDNYC C14 Certificate, Fire Department of New York City. (May 28, 2015 - December 6, 2017).

Development Activities Attended

- Workshop, "Writing Winning Grants Seminar," Brooklyn College Office of Research and Sponsored Programs, Brooklyn, New York, USA. (April 24, 2015).
- Workshop, "NSF Days," National Science Foundation, Baltimore, Maryland, USA. (December 8, 2014).
- Workshop, "CUR Beginning a Research Program Institute," Council for Undergraduate Research LLC, San Diego, California, USA. (November 22, 2013 - November 24, 2013).

TEACHING

Teaching Experience

Baruch College - CUNY

- BIO 1005, General Biology Structure and Function, 11 courses.
BIO 1011, Lectures in General Biology Structure and Function, 1 course.
BIO 2010, General Biology Structure and Function, 1 course.

BIO 4010, Human Physiology, 1 course.
BIO 5000, Independent Study of Aleksandr Kitaygorodskiy- Role of the Bak protein in mitochondrial respiration, 2 courses.
BIO 6001, Honors Thesis of Ma Su Su Aung - Study of Alternative Functions of the Mitochondrial Protein Bak, 2 courses.
IDC 3002, Honors Science and Technology in New York City, 2 courses.
Other, Graduate Thesis Work, Stephen Madamba, 2 courses.

Non-Credit Instruction

Guest Lecture, Lehman College - CUNY, 35 participants. (May 11, 2015).

Workshop, SPAR, 8 participants. (June 23, 2014 - June 27, 2014).

Directed Student Learning

Doctoral Advisory Committee Chair, "Oxidative stress in cells lacking the mitochondrial protein Bax," Other (Outside Baruch School - CUNY). (July 1, 2015 - Present).
Advised: Stephen Madamba

Undergraduate Honors Thesis, "Effect of protein import on mitochondrial function," Other (Within Baruch School - CUNY). (February 1, 2015 - Present).
Advised: Ruth Hartke

Directed Individual/Independent Study, "Study of mitochondrial interactions with the actin cytoskeleton," Other (Within Baruch School - CUNY). (January 28, 2015 - Present).
Advised: Aleksandr Kitaygorodskiy

Directed Individual/Independent Study, "Mitochondria in Cancer," Other (Within Baruch School - CUNY). (January 26, 2015 - Present).
Advised: Damri Kevin

Supervised Research, "Role of the protein Mgr2 in protein import," Other (Within Baruch School - CUNY). (September 1, 2014 - Present).
Advised: Oygul Mirzalieva

Undergraduate Honors Thesis, "Study of Alternative Functions of the Mitochondrial Protein Bak," Other (Outside Baruch School - CUNY). (July 1, 2014 - Present).
Advised: Ma Su Su Aung

Supervised Research, "Emission of reactive oxygen species during mitochondrial protein import," Other (Within Baruch School - CUNY). (June 1, 2014 - Present).
Advised: Nozima Gaipova

Supervised Research, "Oxidative stress in cells lacking the mitochondrial protein Bax," Other (Outside Baruch School - CUNY). (December 1, 2014 - February 28, 2015).
Advised: Stephen Madamba

RESEARCH

Published Intellectual Contributions

Book Chapters

Kinnally, K. W., & Peixoto, P. (2015). Electrophysiology of the Mitochondrial Apoptosis-Induced Channel, MAC. In Anne Delcour (Ed.), *Unconventional Ion Channels and Pores. Springer Series in Biophysics*. Springer.

Peixoto, P., Pavlov, E. E., & Kinnally, K. W. (in press). Mitochondrial Channels in Neurodegeneration *The Functions, Disease-Related Dysfunctions and Therapeutic Targeting of Neuronal Mitochondria*. Wiley.

Peixoto, P., Marinez-Caballero, S., Grigoriev, S., Kinnally, K. W., & Campo, M. L. (2004). The ins and outs of mitochondrial channels from an electrophysiological point of view *Recent Research Developments in Biophysics*. (vol. 3, pp. 413-474). Kerala: Transworld Research Signpost.

Refereed Journal Articles

Madamba, S., Damri, K., Dejean, L. M., & Peixoto, P. (2015). Mitochondrial Ion Channels in Cancer Transformation. *Frontiers in Oncology*, 8. <http://journal.frontiersin.org/article/10.3389/fonc.2015.00120/abstract>

Izidoro-Toledo, T. C., Borges, A. C., Araujo, D. D., Mazzi, D. P., Nascimento, Junior, F. O., Sousa, J. F., Alves, C. P., Paiva, A. P., Trindade, D. M., Patussi, E. V., Peixoto, P., Kinnally, K. W., & Espreafico, E. M. (2013). A myosin-Va tail fragment sequesters dynein light chains leading to apoptosis in melanoma cells. *Cell Death Dis*, 4, e547.

Karch, J., Kwong, J. Q., Burr, A. R., Sargent, M. A., Elrod, J. W., Peixoto, P., Martinez-Caballero, S., Osinska, H., Cheng, E. H., Robbins, J., Kinnally, K. W., & Molkenin, J. D. (2013). Bax and Bak function as the outer membrane component of the mitochondrial permeability pore in regulating necrotic cell death in mice. *Elife*, 2, e00772.

Peixoto, P., Kim, H.-J., Sider, B., Starkov, A., Horvath, T., & Manfredi, G. (2013). UCP2 overexpression worsens mitochondrial dysfunction and accelerates disease progression in a mouse model of amyotrophic lateral sclerosis. *Molecular and Cellular Neuroscience*, 57, 104-110. <http://www.sciencedirect.com/science/article/pii/S104474311300095X#>

Peixoto, P., Dejean, L. M., & Kinnally, K. W. (2012). The therapeutic potential of mitochondrial channels in cancer, ischemia-reperfusion injury, and neurodegeneration. *Mitochondrion*, 12(1), 14-23.

Kinnally, K. W., Peixoto, P., Ryu, S. Y., & Dejean, L. M. (2011). Is mPTP the gatekeeper for necrosis, apoptosis, or both? *Biochim Biophys Acta*, 1813(4), 616-22.

Peixoto, P., Lue, J. K., Ryu, S. Y., Wroble, B. N., Sible, J. C., & Kinnally, K. W. (2011). Mitochondrial apoptosis-induced channel (MAC) function triggers a Bax/Bak-dependent bystander effect. *Am J Pathol*, 178(1), 48-54.

Calabria, L. K., Peixoto, P., Passos Lima, A. B., Peixoto, L. G., de Moraes, V. R., Teixeira, R. R., Dos Santos, C. T., LO, E. S., da Silva Mde, F., dos Santos, A. A., Garcia-Cairasco, N., Martins, A. R., Espreafico, E. M., & Espindola, F. S. (2011). Myosins and DYNLL1/LC8 in the honey bee (*Apis mellifera* L.) brain. *J Insect Physiol*, 57(9), 1300-11.

Patricio, K., Calabria, L. K., Peixoto, P., Espindola, F. S., & Da Cruz-Landim, C. (2010). Characterization and localization of dynein and myosins V and VI in the ovaries of queen bees. *Cell Biol Int*, 34(10), 1041-7.

Ryu, S. Y., Peixoto, P., Won, J. H., Yule, D. I., & Kinnally, K. W. (2010). Extracellular ATP and P2Y2 receptors mediate intercellular Ca(2+) waves induced by mechanical stimulation in

- submandibular gland cells: Role of mitochondrial regulation of store operated Ca(2+) entry. *Cell Calcium*, 47(1), 65-76.
- Dejean, L. M., Ryu, S. Y., Martinez-Caballero, S., Tejjido, O., Peixoto, P., & Kinnally, K. W. (2010). MAC and Bcl-2 family proteins conspire in a deadly plot. *Biochim Biophys Acta*, 1797(6-7), 1231-8.
- Peixoto, P., Ryu, S. Y., & Kinnally, K. W. (2010). Mitochondrial ion channels as therapeutic targets. *FEBS Lett*, 584(10), 2142-52.
- Ryu, S. Y., Peixoto, P., Tejjido, O., Dejean, L. M., & Kinnally, K. W. (2010). Role of mitochondrial ion channels in cell death. *Biofactors*, 36(4), 255-63.
- Peixoto, P., Ryu, S. Y., Bombrun, A., Antonsson, B., & Kinnally, K. W. (2009). MAC inhibitors suppress mitochondrial apoptosis. *Biochem J*, 423(3), 381-7.
- Peixoto, P., Ryu, S. Y., Pruzansky, D. P., Kuriakose, M., Gilmore, A., & Kinnally, K. W. (2009). Mitochondrial apoptosis is amplified through gap junctions. *Biochem Biophys Res Commun*, 390(1), 38-43.
- Martinez-Caballero, S., Peixoto, P., Kinnally, K. W., & Campo, M. L. (2007). A fluorescence assay for peptide translocation into mitochondria. *Anal Biochem*, 362(1), 76-82.
- Peixoto, P., Grana, F., Roy, T. J., Dunn, C. D., Flores, M., Jensen, R. E., & Campo, M. L. (2007). Awakening TIM22, a dynamic ligand-gated channel for protein insertion in the mitochondrial inner membrane. *J Biol Chem*, 282(26), 18694-701.
- Iniesta, V., Carcelen, J., Molano, I., Peixoto, P., Redondo, E., Parra, P., Mangas, M., Monroy, I., Campo, M. L., Nieto, C. G., & Corraliza, I. (2005). Arginase I induction during Leishmania major infection mediates the development of disease. *Infect Immun*, 73(9), 6085-90.
- Nunes, F. M., Valente, V., Sousa, J. F., Cunha, M. A., Pinheiro, D. G., Maia, R. M., Araujo, D. D., Costa, M. C., Martins, W. K., Carvalho, A. F., Monesi, N., Nascimento, A. M., Peixoto, P., Silva, M. F., Ramos, R. G., Reis, L. F., Dias-Neto, E., Souza, S. J., Simpson, A. J., Zago, M. A., Soares, A. E., Bitondi, M. M., Espreafico, E. M., Espindola, F. S., Paco-Larson, M. L., Simoes, Z. L., Hartfelder, K., & Silva, Jr., W. A. (2004). The use of Open Reading frame ESTs (ORESTES) for analysis of the honey bee transcriptome. *BMC Genomics*, 5, 84.

Journal Articles

- Jackman, K., Zhou, P., Faraco, G., Peixoto, P., Coleman, C., Voss, H., Pickel, V., Manfredi, G., & Iadecola, C. (2014). Dichotomous effects of chronic intermittent hypoxia on focal cerebral ischemic injury. *Stroke*, 45(5), 1460-1467.

Presentations Given

- Peixoto, P. M. (Presenter & Author), Mirzaleva, O. (Author Only), Kinnally, K. (Author Only), Mitochondrial DNA and neurodegeneration, "MAC inhibitors neutralize the pro-apoptotic effects of tBid," European Molecular Biology Organization, Sitges, Spain. (September 25, 2015).
- Peixoto, P., Spring Biology Seminar, "To kill or not to kill. A mitochondrial dilemma.," Lehman College, Bronx, NY. (May 11, 2015).
- Peixoto, P., Biology Seminar Series, "The cross roads of mitochondrial apoptosis," Koc University, Istanbul, Turkey. (March 5, 2015).

- Peixoto, P. (Presenter & Author), Tejjido, O., Dejean, L., Pavlov, E., Kinnally, K., 59th Annual Meeting of the Biophysical Society, "MAC Inhibitors Neutralize the Pro-Apoptotic Effects of Tbid," Biophysical Society, Baltimore. (February 12, 2015).
- Peixoto, P. (Presenter & Author), Kim, H.-J., Manfredi, G., 58th Annual Meeting of the Biophysical Society, Biophysical Society, San Francisco. (February 13, 2014).
- Peixoto, P. (Presenter & Author), Kim, H.-J., Sider, B. S., Starkov, A., Manfredi, G., NHLBI Mitochondrial Biology Symposium, "UCP2 overexpression decreases mitochondrial function," National Institutes of Health, Bethesda, MD. (May 6, 2013).
- Peixoto, P. (Presenter & Author), Research Seminar Series, "MAC function propagates between cells," Columbia University College of Physicians and Surgeons, New York. (August 19, 2011).
- Peixoto, P. (Presenter & Author), Seminar Series on Mitochondrial Diseases, "MAC and the crossroads of cell death," Weill Cornell Medical College, New York. (August 5, 2011).
- Peixoto, P. (Presenter & Author), Emily Cheng Seminar Series, "MAC and tumor cell death," Memorial Sloan Kettering Cancer Center, New York. (June 21, 2011).
- Peixoto, P. (Presenter & Author), NYU FSDC Awards 2011, "MAC Function triggers bystander cell death," NYU College of Dentistry, New York. (May 4, 2011).
- Peixoto, P. (Presenter & Author), Lue, J. K., Ryu, S.-Y., Kinnally, K. W., 55th Annual Meeting of The Biophysical Society, "MAC Function Triggers a Bax/Bak Dependent Bystander Effect," Biophysical Society, Baltimore, MD. (February 2011).
- Peixoto, P. (Author Only), Kinnally, K. W. (Presenter & Author), 6th European Bioenergetics Conference, "MAC induces mitochondrial fragmentation," Polish Biochemical Society, Warsaw, Poland. (July 2010).
- Peixoto, P. (Author Only), Gonzales-Fernandez, L., Bermejo, P., Campo, M. L., 6th European Bioenergetics Conference, "Molecular dynamics of the mitochondrial protein translocase TIM22: Structure function correlations of the channel's partakers," Polish Biochemical Society, Warsaw, Poland. (July 2010).
- Peixoto, P. (Presenter & Author), 15th Meeting Braz. Soc. for Cell Biol., "MAC, apoptosis and mitochondrial dynamics," Brazilian Society for Cell Biology, Sao Paulo. (July 25, 2010).
- Peixoto, P. (Presenter & Author), NYU FSDC Awards 2010, "MAC and mitochondrial dynamics," NYU College of Dentistry, New York. (May 23, 2010).
- Peixoto, P. (Presenter & Author), Post Doctoral Research Workshop, "Effects of MAC on mitochondrial morphology," NYU Langone Medical Center, New York. (May 7, 2010).
- Peixoto, P. (Presenter & Author), Faculty Seminar Series, "Mitochondrial ion channels in cell death," University of Navarra Medical School, Pamplona, Spain. (March 29, 2010).
- Peixoto, P. (Presenter & Author), Ryu, S.-Y., Range, R., Kinnally, K. W., 54th Annual Meeting of The Biophysical Society, "Effects of MAC Formation on Mitochondrial Morphology," Biophysical Society, San Francisco, CA. (February 2010).

- Peixoto, P. (Presenter & Author), Renken, C., Haldar, S., Mannella, C., Kinnally, K. W., 54th Annual Meeting of The Biophysical Society, "In Search of the Structure of MAC in the Mitochondrial Outer Membrane," Biophysical Society, San Francisco, CA. (February 2010).
- Peixoto, P. (Presenter & Author), 54th Annual Meeting of the Biophysical Society, "To block apoptosis," Biophysical Society, San Francisco. (February 20, 2010).
- Campo, M. L. (Presenter & Author), Peixoto, P., Roy, T. J., Corraliza, I. M., 34th FEBS Congress, "The channel of the mitochondrial inner membrane protein translocase TIM22: structure-function correlations and insights into the biogenesis the complex.," FEBS, Prague, Czech Republic. (July 4, 2009).
- Peixoto, P. (Presenter & Author), Ryu, S.-Y., Antonsson, B., Kinnally, K. W., 53th Annual Meeting of The Biophysical Society, "Apoptosis in FL5.12 cells is suppressed by inhibitors of the Mitochondrial Apoptosis-induced Channel MAC," Biophysical Society, Boston, MA. (February 2009).
- Ryu, S.-Y. (Presenter & Author), Peixoto, P. (Author Only), Kinnally, K. W., 53th Annual Meeting of The Biophysical Society, "Extracellular ATP Mediates The Intercellular Ca²⁺ Wave Induced By Mechanical Stimulation In Human Salivary Gland Cells," Biophysical Society, Boston, MA. (February 2009).
- Peixoto, P. (Presenter & Author), 52th Annual Meeting of the Biophysical Society, "Pharmacology of the cytochrome c release channel, MAC," Biophysical Society, San Diego. (February 4, 2008).
- Lue, J. K. (Presenter & Author), Peixoto, P., Terracio, L., Sammuels, H. S., Wroble, B., Sible, J., Martinez-Caballero, S., Kinnally, K. W., Mitochondria and Oxidative Stress in Neurodegenerative Disorders, "Mitochondrial apoptosis induces two types of bystander effects," New York Academy of Sciences, New York. (September 29, 2007).
- Peixoto, P. (Presenter & Author), Tyhovich, N., Terracio, L., Antonsson, B., Kinnally, K. W., Mitochondria and Oxidative Stress in Neurodegenerative Disorders, "Blockade of the cytochrome c release channel, MAC.," New York Academy of Sciences, New York. (September 26, 2007).
- Peixoto, P. (Presenter & Author), Roy, T. J., Flores, M., Campo, M. L., 48th Annual Meeting of The Biophysical Society, "Dynamics of the ligand-gated channel of TIM22: The protein insertion complex in native mitochondrial inner membranes," Biophysical Society, Baltimore, MD. (February 2007).
- Peixoto, P. (Presenter & Author), 29th Meeting of the Spanish Society for Biochemistry and Molecular Biology, "Electrophysiological characterization of the mitochondrial protein import channels TIM23 and TIM22," The Spanish Society for Biochemistry and Molecular Biology, Elche, Spain. (September 8, 2006).
- Peixoto, P. (Presenter & Author), Grana, F. O., Flores, M., Roy, T. J., Campo, M. L., 8th European Biological Chemistry Conference, "The native channel activity behind the mitochondrial inner membrane insertase," Portuguese Society for Biological Chemistry, Aveiro, Portugal. (July 6, 2006).
- Peixoto, P. (Presenter & Author), Martinez-Caballero, S., Kinnally, K. W., Campo, M. L., 46th Annual Meeting of The Biophysical Society, "The channel activity of the protein translocase TIM22 detected in the inner membranes of mitochondria.," Biophysical Society, Baltimore, MD. (February 2004).

Media Contributions

Internet

Wikipedia. (December 29, 2007).

Magazine

Wazo Magazine. (June 1, 2015).

Wazo Magazine. (March 10, 2015).

Contracts, Grants and Sponsored Research

Grant

Peixoto, P. M. (Principal), "Mitochondrial interactions with the pre-synaptic architecture of ALS motor neurons," Sponsored by CUNY CIRG, Local, \$30,000.00. (September 30, 2015 - September 30, 2016).

Peixoto, P. (Principal), "Travel Award," Sponsored by Dean's Office, Baruch College - CUNY, \$2,000.00. (September 23, 2015 - September 25, 2015).

Peixoto, P. (Principal), "CRTG - Travel Award," Sponsored by Dean's Office, Baruch College - CUNY, \$2,500.00. (May 2, 2015 - May 7, 2015).

Peixoto, P. M. (Principal), "Mitochondrial Research in the classroom," Sponsored by Baruch College, Baruch College - CUNY, \$4,000.00. (October 1, 2014 - May 1, 2015).

Peixoto, P. (Principal), "CRTG - Travel Award," Sponsored by Dean's Office, Baruch College - CUNY, \$2,000.00. (July 15, 2014 - August 7, 2014).

Peixoto, P. (Principal), "Travel Award," Sponsored by Dean's Office, Baruch College - CUNY, \$2,000.00. (February 15, 2014 - February 19, 2014).

Awards and Honors

Best Postdoctoral Presentation, New York University CD. (April 2011).

Best Poster by a Postdoctoral Fellow, New York University CD Basic Sciences Retreat. (September 2010).

Outstanding Postdoctoral Presentation, New York University CD. (June 2010).

Dean's Research Award, New York University CD. (April 2010).

Outstanding Postdoctoral Presentation, New York University CD. (April 2010).

Young Bioenergeticist Award, The Biophysical Society. (February 2010).

Intellectual Contributions in Submission

Journal Articles

Peixoto, P. Small molecule inhibitors make mitochondria resistant to tBid.

Research in Progress

"Evaluation of the protective effects of spirulina extracts against oxidative stress in mammalian cells" (On-Going)
Mentored undergraduate research project.

"Production and validation of fluorescent probes to image mitochondria in live cells" (On-Going)
Mentored undergraduate research project.

"Study of alternative functions of the mitochondrial protein Bak." (On-Going)
Mentored undergraduate research project.

* Weissman School of Arts and Science Award in Natural Science

"Study of mitochondrial respiration during protein import in yeast." (On-Going)
Mentored undergraduate research project.

SERVICE

Department Service

Course Coordinator: BIO 1005 and BIO 1011/1012. (August 2015 - Present).

Committee Member, Departmental Recommendation. (February 25, 2015 - Present).

Committee Chair, Faculty Search Committee. (March 12, 2015 - May 1, 2015).

Professional Service

Committee Member, University of Extremadura, Caceres, CC. (September 28, 2015).

Workshop Organizer, New York University, New York, NY. (September 11, 2015).

Committee Member, University of Uberlandia, Uberlandia, MG. (June 29, 2013).

Committee Member, University of Uberlandia, Uberlandia, MG. (August 6, 2010).

Committee Member, University of Uberlandia, Uberlandia, MG. (July 6, 2009).

Public Service

Member, New York Academy of Sciences, New York, NY. (February 1, 2012 - Present).

Member, Biophysical Society, Rockville, MA. (February 2004 - Present).

Program Organizer, 2015 Symposium on Mitochondrial Ion Channels and Transporters, New York, New York. (January 5, 2015 - September 11, 2015).

Workshop Organizer, Weismann School Department of Natural Sciences, New York, NY. (June 23, 2014 - June 27, 2014).

Consulting

For Profit Organization, Inception Biosciences, Inc., San Diego. (February 2011 - August 2011).

