Marcelo de Oliveira Dietrich, M.D., Ph.D.

Associate Professor of Comparative Medicine and of Neuroscience Robert T. McCloskey Scholar Yale School of Medicine

ADDRESS AND CONTACT:

Department of Comparative Medicine Yale University School of Medicine Brady Memorial Laboratory 310 Cedar Street, Suite 330C New Haven, CT 06520 United States of America Phone: +1-203-785-6695 Email: marcelo.dietrich@yale.edu Website: http://www.dietrich-lab.org/ Twitter: @dietrich_mo @iniproxima

EDUCATION AND DEGREES:

2007	M.D., Universidade Federal do Rio Grande do Sul (2000-2007)
	Including research training at the Cajal Institute (Madrid, Spain; 2004-2005).

2012 **Ph.D.**, Universidade Federal do Rio Grande do Sul (2008-2012) Including research training and experimental work at Yale University (2008-2012).

POSITIONS AND EMPLOYMENT:

12/2007-04/2008 **Clinician**

Worked as a licensed clinician in multiple locations in the Brazilian health care system.

07/2014-06/2020 Assistant Professor

Department of Comparative Medicine, Yale University School of Medicine. Department of Neuroscience, Yale University School of Medicine (secondary).

07/2020-06/2021 Associate Professor

Department of Comparative Medicine, Yale University School of Medicine. Department of Neuroscience, Yale University School of Medicine (secondary).

10/2022-07/2023 Associate Visiting Professor (on Sabbatical)

Rockefeller University (Kavli NSI).

07/2023-present Associate Professor with Tenure

Department of Comparative Medicine, Yale University School of Medicine. Department of Neuroscience, Yale University School of Medicine (secondary).

2014-present	Faculty Member Center for Molecular and Systems Metabolism (former Program in Integrative Cell Signaling and Neurobiology of Metabolism), Yale University.
2015- present	Founder and Director Iniciativa Proxima (www.iniciativa-proxima.org).
2016-2021	Lecturer Yale University School of Drama. I taught a class on creativity in arts and sciences.
ACADEMIC TRAIN 03/2000-12/2007	IING: Medical Student School of Medicine, Universidade Federal do Rio Grande do Sul (Porto Alegre, Brazil). Includes a two-year break in medical school for scientific training (2004-2005).
07/2003	Summer Student NINDS-NIH (Bethesda, MD, USA). Lab: Thomas S. Reese.
01/2004-06/2005	Visiting Student Cajal Institute (Madrid, Spain). Lab: Ignacio Torres-Aleman.
09/2005-05/2006	Visiting Medical Student Yale NH Hospital and Yale School of Medicine (New Haven, CT, USA).
03/2008-01/2012	Ph.D. Candidate Biological Sciences-Biochemistry, Universidade Federal do Rio Grande do Sul (Porto Alegre, Brazil). Advisor: Diogo O. Souza.
08/2008	Student Course in Theoretical Neuroscience, Max-Plank Institute (Frankfurt, Germany).
2012-2014	Postdoctoral Fellow Received the Young Talent Award fellowship from the Science Without Borders program. Yale University School of Medicine (New Haven, CT, USA). Lab: Tamas L. Horvath.
2022-2023	Kavli Neural Systems Institute Visiting Scientist On sabbatical leave for the academic year at Rockefeller University supported by a grant from the Kavli Neural Systems Institute (New York, NY, USA).
HONORS AND AV	VARDS:

2006	Cristália Award for Research, Brazil.
2008	PENS Summer School Award, Max-Plank Institute, Frankfurt, Germany.
2009	OROBOROS Scholarship, Austria.
2009	Keystone Symposia Scholarship
2009	Latin American Young Talent Award in Life Sciences, GE Healthcare and SBBq.
2012	Junior Member, Brazilian Academy of Sciences.

2014	NARSAD Young Investigator Award, Brain & Behavior Research Foundation.
2014	Scholar Award, Yale Center for Clinical Investigation (YCCI).
2015	Young Talent Award, Science Without Borders, CNPq, Brazil.
2017	CSURM Fellowship, Gordon Research Conference.
2017	Early Career Investigator Award, Keystone Symposia.
2017	Freedman Prize (Honorable Mention), Brain & Behavior Research Foundation.
2019	Reginald and Michiko Spector Award in Neuroscience, Yale School of Medicine.
2020	CAPES Thesis Prize (advisor).
2021	Odyssey Award, Smith Family Foundation.
2024	Robert T. McCloskey Scholar, Yale School of Medicine

ACADEMIC AND RESEARCH SUPPORT:

Fellowships and awards:

2001-2003	Fellowship for undergraduate science studies, FAPERGS.
2006-2007	Fellowship for undergraduate science studies, CAPES.
2012-2014	Postdoctoral Fellowship, CNPq.
2014-2018	Young Talent Fellowship Award, CNPq.
2022-2023	Kavli Neural Systems Institute, Rockefeller University (Sabbatical fellowship).
2024-2027	Robert T. McCloskey Scholar, Yale School of Medicine

Active grants:

2024-2025(PI)	FASI/FARE/BROAD Institute Consortium
	Fasting-induced suppression of food allergy.
2022-2027 (PI)	National Institutes of Mental Health
	R01: Dysregulation of the opioid system in early life adversity.
2021-2024(PI)	Smith Family Foundation, Odyssey Award
	Opioid-Producing Neurons that Mediate the Attachment of Infants to their mothers.
2020-2025(PI)	National Institutes of Mental Health
	R01: Dissecting the modulatory function of hypothalamic neurons in the temporarily restricted emission of vocalizations by neonatal mice.
	FACI/FADE/DDOAD is stitute Concentions

2020-2024(Co-PI) **FASI/FARE/BROAD Institute Consortium** Untangling neuroimmune communications in food allergy.

Awarded but declined grants:

2021-2025(PI) European Research Council, Starting Grant

Completed grants:

2020-2023(Co-PI)	Chan Zuckerberg Initiative, Single-Cell Analysis of Inflammation
	Convergent and divergent features of meta-inflammatory processes; project in collaboration with Noah Palm and Andrew Wang.
2019-2022(Co-PI)	Gilliam Fellowship for Advanced Studies, HHMI
	Student-advisor award for graduate studies.
2019-2021(PI)	Foundation for Prader-Willi Research
	The functional development of hunger neurons in Prader-Willi syndrome
2018-2021 (Co-PI)	General Program for International Collaboration, CAPES
	Neuroendocrine mechanisms involved in metabolism and behavior control
2019-2020(PI)	Reginald and Michiko Spector Award in Neuroscience
	Endowed funds from Yale University School of Medicine
2015-2020(PI)	National Institute of Diabetes and Digestive and Kidney Diseases
	R01: The Intracellular Dynamics of AGRP Neurons under Different Metabolic Conditions
2015-2019(PI)	CAPES (88881.068059/2014-01)
	Interoceptive hypothalamic neurons as critical mediators of cognitive outputs
2015-2018(PI)	Research Grant, Whitehall Foundation
	Dissecting interoceptive circuits critical for cognitive outputs
2016-2018(PI)	Pilot Grant, Yale Diabetes Research Center (P30 DK045735)
	Role of Agrp neurons in exercise-induced physiological adaptations
2015-2017(PI)	NARSAD Young Investigator Award, BBRF
	Interplay between sustained activation of Agrp neurons and DA signaling in the etiology of anorexia nervosa
2015-2017(PI)	Child Health Research Award, Charles H. Hood Foundation
	Hypothalamic circuits underlying brain development during childhood
2014-2016(PI)	Yale Center for Clinical Investigation Scholar Award
	Hunger-promoting AGRP neurons and their cellular substrates in the etiology of anorexia nervosa
2013-2016(PI)	CNPQ (487096/2013-4)
	Hypothalamic regulation of cognitive functions and development of a new platform for analyzes of complex behaviors in animal models
2016-2017 (Co-PI)	Pilot Grant, Modern Diet, and Physiology Research Center
	Uncovering a novel circuit linking neurons encoding homeostatic needs to motor output areas in the brainstem
2012-2016(Co-I)	CNPQ (401476/2012-0; PI: Souza)
	Hypothalamic regulation of schizophrenia-like phenotypes in mice

UNIVERSITY SERV	/ICE:
2014-current	Organizer . Organization Psychology Workshop for Junior Faculty Development.
2015	Co-organizer . Yale Junior Faculty Retreat. October 20, 2015.
2015	Junior Faculty Representative for the Yale School of Medicine accreditation by the Liaison Committee for Medical Education (LCME) team. October 27, 2015.
2017-2018	Program developer , actively participated in bringing the Course in Laboratory Management for Group Leader to Yale University School of Medicine.
2014-2018	Program developer, conceived and created the CAPES-Yale Scholars Program in Biomedical Sciences.
	A program for a full Ph.D. in Biomedical Sciences at Yale University targeted to Brazilian students. The investment of CAPES in 10 years is estimated at about \$ 10 million dollars.
2018-	Admissions Committee, CAPES-Yale Scholars Program in Biomedical Sciences.
2019-2020	Faculty Advisory Committee, Center for Collaborative Arts and Media.
2020-	Admissions Committee, Yale University Interdepartmental Neuroscience Program.
2020	Organizer . Rock the Room Workshop with Victoria Labalme. I brought to Yale the workshop of Victoria Labalme on presentation skills and how to communicate with the public, with a group of 12 faculty across different departments.
2021	Committee Member, Yale School of Medicine Science Fellows program working group.
2021	Committee Member, Neuroscience Chair Search, Yale School of Medicine.
2021-2022	Member, Working Group for Self and Society Initiative, Wu Tsai Institute, Yale University.
2023	Committee Member, Genetics Chair Search, Yale School of Medicine.
2024	Committee Member, Neurology Chair Search, Yale School of Medicine.

EDITORIAL BOARD:

2012-2018	Associate Editor, Molecular Metabolism.
2015-2019	Review Editor, Molecular and Structural Endocrinology (Frontiers Editorial Board).
2018-2020	Review Editor, Frontiers in Integrative Neuroscience.
2022-	Editorial Board, American Journal of Physiology-Endocrinology and Metabolism

REVIEWER:

Peer Review Groups, Panels, and Grant Study Sections:

2012-2013 Auckland Medical Research Foundation, New Zealand.
2012, 2017 French National Research Agency, France.
2014 National Science Foundation, United States.
2015 BBSRC, United Kingdom.
2016 Institute for Advanced Study, Germany.
2016 Alzheimer's Association.

2016, 2018, 2019	Millennium Science Initiative, Chile.
2016	Marsden Fund, Royal Society of New Zealand.
2016, 2019	Medical Research Council, United Kingdom.
2018	ETH Zurich Research Commission.
2019	Foundation for Prader-Willi Research.
2019	Austrian Science Fund.
2020, 2021	Israel Science Foundation.
2020	Molecular, Cellular, and Behavior Neuroscience Fellowship Study Section (NIH)
	[ZRG1 F02C-A(20)] The F2C-A(20) Study Section reviews fellowship applications (F30,
	F31, F32) for NINDS, NIMH, NIDA, NIA, and three other institutes.
2020	Learning and Memory (LAM) Study Section (NIH)
2021	HHMI, Gilliam Fellowships.
2021	Special Panel ZRG1 IFCN-U (02) Study Section (NIH)
2024	International OCD Foundation
2024	Learning, Memory and Decision Neuroscience (LMDN) Study Section (NIH)

BIBLIOGRAPHY AND CITATIONS (from the most recent to the oldest):

Google Scholar: goo.gl/W7deTY PubMed: goo.gl/eUG4nW My Bibliography: goo.gl/AzuXQM

‡ Indicates the corresponding author. <u>Underline</u>, lab members.

PREPRINT MANUSCRIPTS:

- 1. <u>Santana, GM</u>, **Dietrich, MO**. SqueakOut: Autoencoder-based segmentation of mouse ultrasonic vocalizations. *bioRxiv* 2024.04.19.590368; doi: https://doi.org/10.1101/2024.04.19.590368
- Florsheim EB, Bachtel ND, Cullen J, <u>Lima BGC</u>, <u>Godazgar M</u>, Zhang C, Carvalho F, Gautier G, Launay P, Wang A, **Dietrich MO**, Medzhitov R. Immune sensing of food allergens promotes aversive behaviour. *bioRxiv*. 2023 Jan 20:2023.01.19.524823. doi: 10.1101/2023.01.19.524823. PMID: 36712030. (published in *Nature*).
- 3. <u>Bosque Ortiz GM</u>, **Dietrich MO**[‡]. POMC neurons modulate infant vocalizations through opioid signaling. *bioRxiv* 2022.08.15.504046; doi: https://doi.org/10.1101/2022.08.15.504046
- Bosque Ortiz GM, Santana GM, Dietrich MO[‡]. Deficiency of the paternally inherited gene Magel2 alters the development of separation-induced vocalization in mice. *bioRxiv* 2021; doi: https://doi.org/10.1101/2021.04.01.438102 (published in *Genes, Brain, and Behavior*).
- 5. Ryu S, Shchukina I, Youm Y-H, Qing H, Hilliard BK, Dlugos T, Zhang X, Yasumoto Y, Booth CJ, Fernández-Hernando C, Suárez Y, Khanna KM, Tamas L. Horvath, **Dietrich MO**, Artyomov MN,

Wang A, Dixit VD. Ketogenesis restrains aging-induced exacerbation of COVID in a mouse model. *bioRxiv* 2020.09.11.294363; doi: https://doi.org/10.1101/2020.09.11.294363. PMID: 33236006 (published in *eLife*).

 <u>Fonseca AHO</u>, <u>Santana GM</u>, Bampi S, **Dietrich MO**[‡]. Analysis of ultrasonic vocalizations from mice using machine learning. *bioRxiv*. 2020; doi: https://doi.org/10.1101/2020.05.20.105023. (published in *eLife*).

> Code: https://github.com/ahof1704/VocalMat.git Dataset: https://osf.io/bk2uj/

 <u>Albuquerque JP</u>, <u>Zimmer MR</u>, <u>Bober J</u>, **Dietrich MO**[‡]. Rapid shift in substrate utilization driven by hypothalamic Agrp neurons. *bioRxiv*. 2016 Nov 086348; doi: http://dx.doi.org/10.1101/086348. (published in *Nature Communications*)

PEER-REVIEWED ARTICLES:

- 1. <u>Li Y</u>, <u>Liu ZW</u>, <u>Santana GM</u>, Capaz AM, Doumazane E, Gao XB, Renier N, **Dietrich MO**. Neurons for infant social behaviors in the mouse zona incerta. *Science*. 2024 (in press).
- Florsheim EB, Bachtel ND, Cullen J, Lima BGC, Godazgar M, Carvalho F, Chatain CP, Zimmer MR, Zhang C, Gautier G, Launay P, Wang A, Dietrich MO, Medzhitov R. Immune sensing of food allergens promotes avoidance behaviour. *Nature*. 2023 Jul 12. doi: 10.1038/s41586-023-06362-4.
- Stutz B, Waterson MJ, Šestan-Peša M, Dietrich MO, Škarica M, Sestan N, Racz B, Magyar A, Sotonyi P, Liu ZW, Gao XB, Matyas F, Stoiljkovic M, Horvath TL. AgRP neurons control structure and function of the medial prefrontal cortex. *Mol Psychiatry*. 2022 Jul 29. doi: 10.1038/s41380-022-01691-8. PMID: 35906488
- 4. <u>Bosque Ortiz GM</u>, <u>Santana GM</u>, **Dietrich MO**. Deficiency of the paternally inherited gene Magel2 alters the development of separation-induced vocalization and maternal behavior in mice. *Genes, Brain, and Behavior*. 2022 Jan;21(1):e12776. doi: 10.1111/gbb.12776. PMID: 34812568
- Ryu S, Shchukina I, Youm YH, Qing H, Hilliard B, Dlugos T, Zhang X, Yasumoto Y, Booth CJ, Fernández-Hernando C, Suárez Y, Khanna K, Horvath TL, **Dietrich MO**, Artyomov M, Wang A, Dixit VD. Ketogenic diet restrains aging-induced exacerbation of coronavirus infection in mice. *elife*. 2021 Jun 21;10:e66522. doi: 10.7554/eLife.66522. PMID: 34151773
- Han Y, Xia G, Srisai D, Meng F, He Y, Ran Y, He Y, Farias M, Hoang G, <u>Tóth I</u>, <u>Dietrich MO</u>, Chen MH, Xu Y, Wu Q. Deciphering an AgRP-serotoninergic neural circuit in distinct control of energy metabolism from feeding. *Nature Communications*. 2021 Jun 10;12(1):3525. doi: 10.1038/s41467-021-23846-x. PMID: 34112797
- Fonseca AHO, Santana GM, Bosque Ortiz GM, Bampi S, Dietrich MO[‡]. Analysis of ultrasonic vocalizations from mice using computer vision and machine learning. *eLife* 2021 Mar 31;10:e59161. doi: 10.7554/eLife.59161. PMID: 33787490

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- 9. <u>Zimmer MR</u>, <u>Fonseca AF</u>, <u>İyilikci O</u>, <u>Dai Pra R</u>, **Dietrich MO**[‡]. Functional ontogeny of hypothalamic Agrp neurons in neonatal mouse behaviors. *Cell*. 2019 June 27. doi: 10.1016/j.cell.2019.04.026
- <u>Albuquerque JP</u>, <u>Zimmer MR</u>, <u>Bober J</u>, **Dietrich MO**[‡]. Regulation of substrate utilization and adiposity by Agrp neurons. *Nature Communications*. 2019 Jan 18;10(1):311. doi: 10.1038/s41467-018-08239-x. PMID: 30659173.
- <u>Zimmer MR</u>, <u>Schmitz AE</u>, **Dietrich MO**[‡]. Activation of Agrp neurons modulates memory-related cognitive processes in mice. *Pharmacological Research*. 2019 Jan 2;141:303-309. doi: 10.1016/j.phrs.2018.12.024. PMID: 30610962.
- Suyama S, Ralevski A, Liu ZW, Dietrich MO, Yada T, Simmonds SE, Cowley MA, Gao XB, Diano S, Horvath TL. Plasticity of calcium-permeable AMPA receptors in POMC neurons. *Elife*. 2017 Aug 1;6. PMID: 28762946.
- Pereira MMA, Mahú I, Seixas E, Martinéz-Sánchez N, Kubasova N, Pirzgalska RM, Cohen P, Dietrich MO, López M, Bernardes GJL, Domingos AI. A brain-sparing diphtheria toxin for chemical genetic ablation of peripheral cell lineages. *Nature Communications*. 2017 May 17;8:15673. PMID: 28367972.
- Kim JG, Sun BH, Dietrich MO, Koch M, Yao GQ, Diano S, Insogna K, Horvath TL. AgRP Neurons Regulate Bone Mass. Cell Rep. 2015 Oct 6;13(1):8-14. PMID: 26411686.
- Dietrich MO[‡], <u>Zimmer MR</u>, <u>Bober J</u>, Horvath TL. Hypothalamic Agrp neurons drive stereotypic behaviors beyond feeding. *Cell*. 2015 March 12; 160(6):1222-1232. Featured article. PMID: 25748653.
- Koch M, Varela L, Kim JG, Kim JD, Hernandez F, Simonds SE, Castorena CM, Vianna CR, Elmquist JK, Morozov YM, Rakic P, Bechmann I, Cowley MA, Szigeti-Buck K, **Dietrich MO**, Gao X-B, Diano S, Horvath TL. Hypothalamic POMC neurons promote cannabinoid-induced feeding. *Nature*. 2015 Mar 5;519(7541):45-50. PMID: 25707796.
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- Kim JG, Suyama S, Koch M, Jin S, Argente-Arizon P, Argente J, Liu ZW, Zimmer MR, Jeong JK, Szigeti-Buck K, Gao Y, Garcia-Caceres C, Yi CX, Salmaso N, Vaccarino FM, Chowen J, Diano S, Dietrich MO, Tschöp MH, Horvath TL‡. Leptin signaling in astrocytes regulates hypothalamic neuronal circuits and feeding. *Nature Neuroscience*. 2014 Jul;17(7):908-10. PMID: 24880214.

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- Dietrich MO[‡], Liu Z-W, Horvath TL[‡] (2013) Mitochondrial dynamics controlled by mitofusins regulate Agrp neuronal activity and diet-induced obesity. *Cell*. 2013 Sep 26;155(1):188-99. Journal Cover. PMID: 24074868.
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- Hess ME, Hess S, Meyer KD, Verhagen LA, Koch L, Brönneke HS, Dietrich MO, Jordan SD, Saletore Y, Elemento O, Belgardt BF, Franz T, Horvath TL, Rüther U, Jaffrey SR, Kloppenburg P, Brüning JC. The fat mass and obesity associated gene (Fto) regulates activity of the dopaminergic midbrain circuitry. *Nature Neuroscience*. 2013 Aug;16(8):1042-8. PMID: 23817550.
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- Fuente-Martín E, García-Cáceres C, Granado M, de Ceballos ML, Sánchez-Garrido MÁ, Sarman B, Liu ZW, **Dietrich MO**, Tena-Sempere M, Argente-Arizón P, Díaz F, Argente J, Horvath TL, Chowen JA. Leptin regulates glutamate and glucose transporters in hypothalamic astrocytes. *J Clin Invest*. 2012 Nov 1;122(11):3900-13.
- Horvath TL, Abizaid A, Dietrich MO, Li Y, Takahashi JS, Bass J. Ghrelin-labeled hypothalamic neurons tie the circadian clock and visual system to the lateral hypothalamic arousal center. *Molecular Metabolism*. 2012. Aug 18;1(1-2):79-85.
- 27. Simon-Areces J, **Dietrich MO**, Hermes G, Garcia-Segura LM, Arevalo MA, Horvath TL. UCP2 induced by natural birth regulates neuronal differentiation of the hippocampus and related adult behavior. *PLoS One*. 2012;7(8):e42911.
- 28. **Dietrich MO**, Bober J, Ferreira JG, Tellez LA, Mineur Y, Souza DO, Gao XB, Picciotto M, Liu ZW, Horvath TL. AgRP neurons regulate development of dopamine neuronal plasticity and non foodassociated behaviors. *Nature Neuroscience*. 2012 Jun 24;15(8):1108-10.
- 29. Coupé B, Ishii Y, **Dietrich MO**, Komatsu M, Horvath TL, Bouret SG. Loss of Autophagy in Proopiomelanocortin Neurons Perturbs Axon Growth and Causes Metabolic Dysregulation. *Cell Metabolism*. 2012 Feb 8;15(2):247-55.

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- Muller AP, Cammarota M, Dietrich MO, Rotta LN, Portela LV, Souza DO, Izquierdo I, Bevilaqua LR, Perry ML. Different effect of high fat diet and physical exercise in the hippocampal signaling. *Neurochem Res.* 2008 May;33(5):880-5.
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- **39.** Lopez-Lopez C, **Dietrich MO**, Metzger F, Loetscher H, Torres-Aleman I. Disturbed cross talk between insulin-like growth factor I and AMP-activated protein kinase as a possible cause of vascular dysfunction in the amyloid precursor protein/presenilin 2 mouse model of Alzheimer's disease. *J Neurosci.* 2007 Jan 24;27(4):824-31.
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- 41. **Dietrich MO**, Mantese CE, Porciuncula LO, Ghisleni G, Vinade L, Souza DO, Portela LV. Exercise affects glutamate receptors in postsynaptic densities from cortical mice brain. *Brain Res.* 2005 Dec 14;1065(1-2):20-5.
- 42. **Dietrich MO**, Mantese CE, Anjos G, Souza DO, Farina M. Motor impairment induced by oral exposure to methylmercury in adult mice. *Environmental Toxicology and Pharmacology*. 2005 Jan; 19(1):169-175.
- 43. **Dietrich MO**, Mantese CE, Dos Anjos GM, Rotta LN, Perry ML, Souza DO, Lara DR. Increased locomotor response to amphetamine, but not other psychostimulants, in adult mice submitted to a low-protein diet. *Physiol Behav*. 2004 Oct 30;83(1):129-33.
- 44. Tort AB, Mantese CE, dos Anjos GM, Dietrich MO, Dall'Igna OP, Souza DO, Lara DR. Guanosine selectively inhibits locomotor stimulation induced by the NMDA antagonist dizocilpine. *Behav Brain Res.* 2004 Oct 5;154(2):417-22.
- 45. **Dietrich MO**, Tort AB, Schaf DV, Farina M, Gonçalves CA, Souza DO, Portela LV. Increase in serum S100B protein level after a swimming race. *Can J Appl Physiol*. 2003 Oct;28(5):710-6.
- 46. Tort AB, **Dietrich MO**, Gonçalves CA, Souza DO, Portela LV. Influence of anticoagulants on the measurement of S100B protein in blood. *Clin Biochem*. 2003 Oct;36(7):519-22.
- **47.** Farina M, Frizzo ME, Soares FA, Schwalm FD, **Dietrich MO**, Zeni G, Rocha JB, Souza DO. Ebselen protects against methylmercury-induced inhibition of glutamate uptake by cortical slices from adult mice. *Toxicol Lett.* 2003 Oct 15;144(3):351-7.
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- Dall'Igna OP, Da Silva AL, Dietrich MO, Hoffmann A, de Oliveira RV, Souza DO, Lara DR. Chronic treatment with caffeine blunts the hyperlocomotor but not cognitive effects of the N-methyl-D-aspartate receptor antagonist MK-801 in mice. *Psychopharmacology* (Berl). 2003 Mar;166(3):258-63.
- 50. Coitinho AS, Dietrich MO, Hoffmann A, Dall'Igna OP, Souza DO, Martins VR, Brentani RR, Izquierdo I, Lara DR. Decreased hyperlocomotion induced by MK-801, but not amphetamine and caffeine in mice lacking cellular prion protein (PrP(C)). Brain Res Mol Brain Res. 2002 Nov 15;107(2):190-4.
- Dall'Igna OP, Dietrich MO, Hoffmann A, Neto W, Vendite D, Souza DO, Lara DR. Catalepsy and hypolocomotion induced by a nitric oxide donor: attenuation by theophylline. *Eur J Pharmacol.* 2001 Nov 30;432(1):29-33.

REVIEW ARTICLES:

<u>İyilikci O</u>, <u>Zimmer MR</u>, **Dietrich MO**[‡]. Development of "hunger neurons" and the unanticipated relationship between energy metabolism and mother-infant interactions. *Biological Psychiatry*. 2022. doi.org/10.1016/j.biopsych.2022.02.962. PMID: 35397878

- 53. **Dietrich MO**, Horvath TL‡. Hypothalamic control of energy balance: insights into the role of synaptic plasticity. *Trends Neurosci*. 2013 Feb;36(2):65-73.
- 54. Dietrich MO, Horvath TL‡. Neuroendocrine Regulation of Energy Metabolism. *Endocrinol Metab*. 2012 Dec;27(4):268-273.
- Dietrich MO[‡], Horvath TL[‡]. Limitations in anti-obesity drug development: a critical role of hungerpromoting neurons in integrative physiology. *Nat Rev Drug Discov*. 2012 Sep;11(9):675-91. Journal Cover.
- Nogueiras R, Habegger KM, Chaudhary N, Finan B, Banks AS, Dietrich MO, Horvath TL, Sinclair DA, Pfluger PT, Tschöp MH. Sirtuin 1 and sirtuin 3: physiological modulators of metabolism. *Physiol Rev.* 2012 Jul;92(3):1479-514.
- 57. **Dietrich MO**, Horvath TL‡. The role of mitochondrial uncoupling proteins in lifespan. *Pflugers Arch*. 2010 Jan;459(2):269-75.
- 58. **Dietrich MO**, Horvath TL‡. Feeding signals and brain circuitry. *Eur J Neurosci*. 2009 Nov;30(9):1688-96.

EDITORIALS:

- Iyilikci O, Dietrich MO[‡]. Preparatory neurons for building a nest. Neuron. 2022 Apr 20;110(8):1283-1285. doi: 10.1016/j.neuron.2022.03.023. PMID: 35447098
- Dietrich MO[‡]. Visualizing browning in vivo. *Molecular Metabolism*. 2013. 10.1016/j.molmet.2013.07.004.
- 61. **Dietrich MO**, Horvath TL. A marriage made to last in drug design. *Nature Medicine*. 2012 Dec 6; 18(12):1737-1738.
- 62. **Dietrich MO**, Horvath TL. Phosphoribosomes for fingerprinting neurons. *Cell*. 2012 Nov 21;151(5):934-6.
- 63. **Dietrich MO**, Horvath TL. Fat incites tanycytes to neurogenesis. *Nature Neuroscience*. 2012 Apr 25;15(5):651-3.
- 64. **Dietrich MO**, Horvath TL. AgRP neurons: The foes of reproduction in leptin-deficient obese subjects. *Proc Natl Acad Sci U S A*. 2012 Feb 21;109(8):2699-700.
- 65. **Dietrich MO**, Horvath TL. Synaptic plasticity of feeding circuits: hormones and hysteresis. *Cell*. 2011 Sep 16;146(6):863-5.
- 66. Dietrich MO, Horvath TL. GABA keeps up an appetite for life. Cell. 2009 Jun 26;137(7):1177-9.
- Dietrich MO, Souza DO, Portela LV. Serum S100B protein: what does it mean during exercise? *Clin J Sport Med.* 2004 Nov;14(6):368; author reply 368-9. Comment on: Clin J Sport Med. 2003 Sep;13(5):292-302.

BOOKS:

- 68. Dietrich MO, Horvath TL. Chapter 16: Neuroendocrine Regulation of Energy Balance. In: Food and Addiction: A Comprehensive Handbook, edited by Kelly Brownell and Mark Gold. Oxford University Press. 2012.
- 69. Dietrich MO, Horvath TL. Wired for Hunger: The Brain and Obesity and Anorexia Nervosa: A Mortal Clash between Reward and Hunger. Cerebrum 2010. Dana Foundation.

OTHER PUBLICATIONS:

70. Dietrich MO[‡], Horvath TL[‡]. Neural regulation of food intake and energy balance. *Nature Reviews Neuroscience*. August 2010. http://www.nature.com/nrn/posters/feeding/nrn_feeding_poster.pdf

SOFTWARE, PATENTS, AND INVENTIONS:

- 1. **VocalMat:** an open-source software tool based on machine learning algorithms to detect and analyze ultrasonic vocalizations emitted by mice in an automated and high-throughput manner. <u>www.dietrich-lab.org/vocalmat</u>
- 2. **SqueakOut:** an open-source tool to segment mouse vocalizations from audio files.

DIVERSITY AND INCLUSION ACTIVITIES

When I finished my Ph.D., I aspired to increase opportunities for young students from my native country, Brazil, to become world-class scientists. In pursuit of this goal, I created some very successful initiates that are shaping the scientific community.

I have founded and launched the *Iniciativa Proxima* (www.iniciativa-proxima.org), an organization that seeks to inspire and advance the career of talented young Brazilian scientists with an interest in the field of biological and biomedical sciences to contribute to a stronger scientific education in Brazil and build a generation of competitive scientific leaders committed to improving society and their local communities. As part of this initiative, we have launched the Yale-Proxima Mentorship Program to support students in developing the necessary skills to pursue a career in biological and biomedical sciences. In the first class (Class 2021), 95 students were selected to join the mentorship program. In the second and third classes (2022, 2023), 50 students were selected to participate in the program in each year. As an example of the impact of this initiative, several students have been admitted to some of the world's most renowned Ph.D. programs with an admission rate of more than 90%.

As part of Iniciativa Proxima, we also organize the Proxima Symposium (<u>https://proximasymposium.org/</u>), a scientific meeting in which world-renowned scientists visit Brazil for a multi-day event to interact with and train local students. Dozens of students from this program have already received opportunities to further their training at the world's best academic institutions. Some of these students are now building their own scientific groups in Brazil, which contributes to a more competitive scientific workforce nationally.

I also spearheaded a cooperative agreement between Yale University and the Brazilian government to create a Ph.D. training program in biomedical sciences at Yale exclusively for Brazilians totaling about \$10M projected investment. There are already two classes of students at Yale (5 in the first class, 6 in the second class).

With the success of these programs, my long-term goal and hope is to expand similar initiatives to the whole of Latin America and beyond. These initiatives capture one of the things that I value most, which is inspire and create a more inclusive and diverse scientific workforce. By supporting and training young talented scientists, I

seek to reduce opportunity and achievement gaps in Brazil and beyond and foster the next generation of science leaders for the betterment of our societies and local communities.

ORGANIZATION OF SCIENTIFIC MEETINGS:

2014	I Advanced School in Neuroscience, Brazil.
2015	II Advanced School in Neuroscience, Brazil.
2016	Seminars in Neuroscience I, Brazil.
2017	Seminars in Neuroscience II, Brazil.
2017	Seminars in Neuroscience III, Brazil.
2018	Seminars in Biomedical Sciences, Brazil.
2019	YALE-CAPES Seminars in Biomedical Sciences, Brazil
2023	Proxima Symposium.

Grants and financial support for scientific meetings: 2014 CNPQ-ARC (466467/2014-1) Meeting: School for Advanced Studies in Neurosciences 2015 **CAPES-PAEP (333674)** Meeting: School for Advanced Studies in Neurosciences 2015 CAPES-EAE (EAE-2015) Meeting: School for Advanced Studies in Neurosciences 2016 FAPERGS (AOE 06/2016 - 24006.395.24734.25112016) Meeting: Seminars in Neuroscience CAPES-PAEP (88887.192803) 2018 Meeting: Seminars in Biomedical Sciences **Yale Office of International Affairs** 2018 Meeting: Seminars in Biomedical Sciences CAPES-PAEP (88887.360246) 2019 Meeting: YALE-CAPES Seminars in Biomedical Sciences Yale Office of International Affairs 2019 Meeting: YALE-CAPES Seminars in Biomedical Sciences **IBRO Diversity Grant** 2023 Meeting: Proxima Symposium 2023 Fundraising (\$25,000) Meeting: Proxima Symposium

SEMINARS, SYMPOSIA, AND OTHER LECTURES:

2011

- Nanjing University, China. May 2011. Host: Qian Gao.
- Xijing Hospital, Fourth Military Medical University, China. May 2011. Host: Hai-long Dong.
- Dipartimento di Farmacologia Sperimentale, Universitá degli Studi di Napoli Federico II, Italy. July 2011. Host: Antonio Calignano.

2012

- Seminar Speaker, Yale Biology of Aging Interest Group.
- Speaker, Experimental Biology 2012. San Diego, EUA.
- Keynote Speaker, DiabeteSul, Porto Alegre, RS, Brazil. May 2012.
- Carleton University, Ottawa, Canada. November 2012. Host: Alfonso Abizaid.

2013

- Nutrition, Metabolism and the Brain, Amsterdam, Netherlands. April 2013.
- Universidade Federal do Rio de Janeiro, Brazil. May 2013. Host: Antonio Galina.
- 73rd American Diabetes Association Scientific Sessions. Chicago, US. June 2013.
- XXXVII Reunião Anual da Sociedade Brasileira de Neurociências e Comportamento (SBNec). Belo Horizonte, Brazil. September 2013.
- Universidade Federal do ABC. Santo André, SP, Brazil. September 18. Host: Marcelo Caetano.
- Weizmann Institute, Israel. October 1. Host: Tali Kimchi.
- Cajal at Yale Symposium. Yale University. November 5-6, 2013.

2014

- Special Seminar, John B Pierce Laboratory. New Haven, CT, US. February 26, 2014.
- 43rd Annual Meeting of the SBBq, Iguaçu Falls, Brazil.
- The 2nd Annual Helmholtz-Nature Medicine Diabetes Conference.

2015

- Neurology Research Happy Hour. Yale University. February 12, 2015.
- Wellcome Trust-MRC Institute of Metabolic Science, Cambridge, UK. March 4, 2015.
- 2nd Advanced Studies in Neurosciences. April 19-23, 2015. Porto Alegre, RS, Brazil.
- IBRO 2015. Symposium 2. Chair: Diogo Souza. July 7, 2015. Rio de Janeiro, Brazil.
- New INP Faculty Talks. NeuroDay, Yale University. August 31, 2015.
- CNP Colloquia. Champalimaud Foundation. September 21, 2015. Lisbon, Portugal.
- State-of-the-art Methods in Neuroscience Research (Argentinian Society for Neurosciences). September 27-29, 2015. Mar del Plata, Argentina.
- XXX Annual Meeting of the Argentinian Society for Neurosciences. September 29, 2015.
- III Joint Yale-Cajal Meeting. Cajal Institute. October 7, 2015. Madrid, Spain.
- Obesity Society Annual Scientific Meeting, Obesity Week. November 5, 2015. Los Angeles, CA.

2016

- Research in Progress. Yale Center for Clinical Investigation (YCCI). May 23, 2016.
- The Fourth NeuroSur Symposium. March 21-22, 2016. Santiago, Chile.
- EMBO Workshop on Metabolism and Eating Behavior. May 5-7, 2015. Lisbon, Portugal.
- Current Works in Neurosciences. October 20-22, 2016. Porto Alegre, RS, Brazil.
- Rockefeller University Seminars. Nov 9, 2016. Rockefeller University.

2017

• Yale Biological Science Training Program. March 12, 2017.

- University of Ozarks, Ozarks AR. April 25, 2017.
- Keystone Symposia: Neuronal Control of Appetite, Metabolism and Weight. Copenhagen, Denmark. May 9-13, 2017.
- Aberdeen University, Scotland (UK). May 18, 2017.
- UT Southwestern, School of Medicine. July 11, 2017.

2018

- UCSF, San Francisco, CA. March 21, 2018.
- Brain-Periphery Communications in Metabolic Control. April 16-21, 2018. Fondation des Treilles, France.
- Cornell University, Ithaca, NY. September 19, 2018.
- Yale Biological Science Training Program. October 1, 2018.
- Neuro-Immunometabolism. October 26-27, 2018. Florianopolis, Brazil.

2019

- IDIBAPS, Barcelona, Spain. March 27-28, 2019.
- Cell and Molecular Physiology, Loyola University, Chicago. April 25, 2019.
- Rockefeller University, Kavli Symposium. May 15, 2019.
- NPY-PYY-PP Meeting, Edmonton, Alberta, Canada. July 27-31, 2019.
- Association for the Study of the Arts of the Present, Ecologies of the Present. University of Maryland. October 10-12, 2019.
- Advances in Metabolic Communication, Nature Press and Instituto Serrapilheira Conference. Rio de Janeiro, Brazil. October 15-18, 2019.
- University of Oxford, UK. October 25, 2019.
- School of Life Sciences, Peking University, China. October 29, 2019.
- Xijing Hospital, Fourth Military Medical University, China. October 30, 2019.
- Third International Neural Control of Metabolism Symposium, Chongqing, China. November 1-3, 2019.
- Think Tank on Brain Body Interactions, Janelia Farms. November 4-5, 2019.

2020

- Duke University. February 4, 2020.
- Universidade Federal de Minas Gerais, Belo Horizonte, Brazil. February 14, 2020.
- Section of Endocrinology, Grand Rounds, Yale School of Medicine. February 29, 2020.
- Keynote, International Symposium for Networking in Neuroscience. Sep 11-12, 2020.
- Symposium Covian, Graduate Program in Physiology. Oct 2-3, 2020.
- Annual Meeting of Brazilian Physiological Society SBFis. Oct 4-7, 2020.
- III Simpósio Brasileiro de Neurociências, Dec 12, 2020.

2021

- Gastronauts Global, Virtual. May 11-13, 2021.
- CNS Virtual Seminar Series, Queen's University, Canada. May 26, 2021.
- ECRO 50th Anniversary, Cascais, Portugal. September 13-16, 2021.
- Body-Brain Interactions Virtual Seminar Series. October 18, 2021.
- KAVLI NSI Symposium, Rockefeller University. November 29, 2021.
- University of Ozarks, Ozarks AR. December 3, 2021.

2022

- Neuronal Control of Appetite/Gut-Brain Axis, Keystone Meeting. March 20-24, 2022.
- Gastronauts Mini-symposium, University of Zamorano, Honduras. March 27-29, 2022.
- Mahoney Institute of Neurosciences, University of Pennsylvania. April 13, 2022.
- Inaugural Hypothalamus Gordon Research Conference, Ventura, California, July 24-29, 2022.

- Seoul National University College of Medicine Seminar, Korea. September 1, 2022.
- International Congress on Obesity and Metabolic Syndrome, Seoul, Korea. September 1-3, 2022.
- Precision Medicine and Functional Genomics Conference, Doha (Qatar), September 23-26, 2022.
- Breakthrough Discoveries in Diabetes and Obesity. Melbourne, Australia. October 23-25, 2022.
- Monash-Yale Symposium. Melbourne, Australia. October 26, 2022.
- Department of Physiology and Neurobiology, University of Connecticut. November 30, 2022.

2023

- 36th Annual Winter Conference in Developmental Psychobiology, Punta Cana, Dominican Republic. January 5-7, 2023.
- Leon Levy Neuroscience Seminar, Rockefeller University, NY. April 27, 2023.
- Brain and Body Seminar Series, Icahn School of Medicine at Mount Sinai, June 27, 2023.

2024

• Monell Science Apprenticeship Program (MSAP) Seminar Series, Monell Chemical Senses Center, Philadelphia, PA, July 16, 2024.

• NeuroFood: Brain-Nutrition interactions: From metabolic to psychiatric and neurodegenerative diseases, Bordeaux, France, October 16-18, 2024.

TEACHING

- Medical Biochemistry. Universidade Federal do Rio Grande do Sul (Brazil). Guest lectures as Visiting Lecturer (2008-2017).
- Organizer of a Course in Organizational Psychology for Junior Faculty Development at Yale School of Medicine by Professor David Berg. From 2014-current.
- Lecturer at Yale School of Drama. Workshop on creativity in arts and sciences. From 2016-2021.
- Principles of Neuroscience Course. Special lectures (2017, 2020).
- Bioethics. Special Lectures. Interdepartmental Neuroscience Program (2019, 2020)
- Panelist. Yale Ciencia Academy virtual meetings. An NIH-funded career development program for students from underrepresented backgrounds who are pursuing PhDs in biomedical and behavioral sciences (2020).
- Panelist. Yale PATHS. Program for undergraduate students from underrepresented groups to prepare them for a career in sciences (2020).
- C&MP 580b: Mitochondrial Bioenergetics and Intermediary Metabolism. Lecture on Neurobiology of Metabolism (Spring 2022).

UNDERGRADUATE AND GRADUATE PROGRAMS

2014-	PhD Advisor, Molecular Cell Biology, Genetics, and Development, Yale University
2014-	PhD Advisor, Interdepartmental Neuroscience Program, Yale University
2014-	MD/PhD Advisor, Office of Student Research, Yale School of Medicine
2015-	MSc and PhD Advisor, Graduate Program in Biological Sciences, Biochemistry,
	Universidade Federal do Rio Grande do Sul, Brazil.
2010	Fourther Advisory Major in Neuropein and Mala Callera

2018- Faculty Advisor, Major in Neuroscience, Yale College.

UNDERGRADUATE FACULTY ADVISOR

2016	Annie Jin, Univ. of Connecticut (summer student).
2016	Sarah Ornellas, Yale University (summer student).
2016-2017	Le'Vena Tan, King's College (Final Project)
2018-2019	Jamachi Eliche, Yale College (Final Project)
2018-2019	Gabriel Baldissera, Universidade Federal do Rio Grande do Sul (Final Project)
2018-2019	Gustavo Santana, Comp. Sciences, Univ. Fed. do Rio Grande do Sul.
2018-2021	Lucas Kim, Yale College.
2018-2020	Heidi Dong, Yale College
2019	Shivangi Goswami, UCLA (summer student).
2020-2021	Luis Augusto Weber Mercado, Comp. Sciences, Univ. Fed. do Rio Grande do Sul.

M.D. ADVISOR

2015	Julia Fabião, Universidade Federal de Pelotas (visiting student).
2018-2020	Arthur Albuquerque, Univ. Fed. do Rio de Janeiro (visiting student).
2019-2021	Marcelo Teixeira Garroni, Univ. Fed. do Rio Grande do Sul (visiting student).

MASTER ADVISOR

2017-2019	André Borba, Universidade Federal do Rio Grande do Sul (Biological Sciences)
2017-2019	Antonio Fonseca, Universidade Federal do Rio Grande do Sul (Microelectronics)
2017-2019	Rafael Dai Pra, Universidade Federal do Rio Grande do Sul (Biological Sciences)
2019-2021	Gustavo Santana, Universidade Federal do Rio Grande do Sul (Biological Sciences)

Ph.D. ADVISOR

2014-2019	Marcelo R. Zimmer, Universidade Federal do Rio Grande do Sul				
	Awarded the CAPES Thesis Prize for the best PhD Thesis in Biological Sciences.				
2017-2022	Gabriela Bosque Ortiz, Yale University (INP; Gilliam Fellow, HHMI)				
2018-	Delva Leão , Universidade Federal do Rio Grande do Sul				
2019-2024	Yuexuan Li, Yale University (INP; CSC Scholar)				
	Awarded the 2024 INP Thesis Prize.				

Ph.D. QUALIFYING COMMITTEE

2018	Joon Lee, Interdepartmental Neuroscience Program (INP), Yale University
2018	Megan Kelley, Interdepartmental Neuroscience Program (INP), Yale University
2019	Alex Wang, Interdepartmental Neuroscience Program (INP), Yale University
2020	Nathaniel Bachtel, Department of Immunobiology, Yale University

Ph.D. THESIS COMMITTEE

2019 Paul Muller, Rockefeller University (Mucida Lab)
2020 Gabriela de Paula, UFSC

2020-24	Alex Wang, Interdepartmental Neuroscience Program, Yale University
2020	Caner Caglar, Rockefeller University (Friedman Lab)
2021-	Alexa Soares, Interdepartmental Neuroscience Program, Yale University (Picciotto lab)
2021-	Nathaniel Bachtel, Department of Immunobiology, Yale University (Medzhitov Lab)
2021-	Anna Gruzdeva, Cornell University (Yapici Lab).
2022-	Julia Deere, Rockefeller University (Mucida Lab).

Ph.D. THESIS EVALUATOR

2020	Jae Eun Song, Yale University.
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CURRENT LABORATORY MEMBERS

1.	Jeremy Bober	Research Associate	2014-	
2.	Onur Iyilikci	Postdoc	2016-	
3.	Mahdieh Godazgar	Postdoc	2020-	
4.	Marcelo Zimmer	Postdoc	2021-	
5.	Delva Leão	PhD Student	2017-	CAPES Fellow
6.	Yuexuan Li	PhD Student	2019-	Yale INP Student/CSC Scholar
7.	Nathalia Ferreira	Postgraduate	2023-	

LABORATORY ALUMNI

Name	Position in the lab	Years in lab	Next Position	Current position
Samantha Hall	Postgraduate associate	2022	Postgraduate associate (Horvath)	
Gabriela Bosque Gilliam Fellow HHMI	PhD student	2017-2022	Clinical and Scientific Writer, University of Puerto Rico	
Bruna Costa Lima	Postgraduate associate	2020-2022	Graduate Student, Arizona State University	
Luis Mercado	Undergraduate student	2020-2021	Private sector / data analyst	
Gustavo Santana PGCI Fellow	M.Sc. student	2019-2021	Yale Graduate Student	
Lucas Kim	Undergrad and postbach	2017-2021	Medical Student (Yale)	
Marcelo Garroni PGCI Fellow	Visiting Medical Student	2020-2021	MD/PhD student (UFRGS)	

Esther Florsheim	Postdoc in the Medzhitov lab (co- mentorship)	2017-2020	Assistant Professor, School of Life Sciences, Arizona State University	
Juliana Fan	student (Yale)	2017-2020	John Hopkins School of Medicine	
Heidi Dong	Undergraduate student (Yale)	2018-2020	Postgrad, Yale School of Medicine	Medical Student (NYU)
Arthur Albuquerque PGCI Fellow	Visiting Medical Student	2018-2020	Medical Student at UFRJ.	
Shivangi Goswami BioMed Amgen Scholar	Summer student (undergrad from UCLA)	2019	Undergrad (UCLA)	
Rafael Dai Prá PGCI Fellow	M.Sc. student (Biochemistry)	2016-2019	Yale Graduate Student (Elena Gracheva Lab)	Yale Graduate student
Antonio Fonseca PGCI Fellow	M.Sc. student (microelectronics)	2016-2019	Yale Graduate Student (David van Dijk lab)	Yale Graduate student
Jamachi Eluchie	Undergraduate student (Yale)	2018-2019	Postgrad, University of Maryland.	Private sector.
André Borba	M.Sc. student (Biochemistry)	2016-2020		
Marcelo R. Zimmer Science Without Borders Fellow	PhD Student	2014-2019	Postdoc Fellow, UFRGS.	Returned to my lab at Yale in 2021 as a postdoc.
Julie Nguyen	Research Assistant	2017-2018		
Fernando Carvalho	Postdoc	2016-2017	Postdoc in Ruslan Medzhitov lab	
Le'Vena Tan	Undergrad (King's College)	2016-2017	Undergrad (King's College, London)	M.P.H. student, UNC Chapel Hill
Sarah Ornellas STARS Fellow	Undergraduate (Yale College)	2016		Private sector.
Bernardo Arús	Undergraduate (UFRGS)	2016-2017	M.Sc. (Ana Domingos)	PhD Candidate, Helmholtz Pioneer Campus, Munich
Ariana Schmitz Science Without Borders Fellow	Visiting PhD Student	2015	PhD Student (UFSC, Brazil)	Clinical nutrition specialist

Marcelo O. Dietrich, M.D., Ph.D.

Julia Fabião	Summer M.D.	2015	Graduated in	Clinical training
	student		Medicine	
João Albuquerque	Visiting PhD	2015-2016	Senior postdoc at	
Science Without Borders	Student		UFRJ	
Fellow				
Istvan Toth	Visiting PhD	2014	Postdoc, Szent Istvan	
	Student		University	