

Camila de Ávila Dal'Bo, PhD – Abbreviated Curriculum Vitae

PERSONAL DETAILS

Position: Senior Postdoctoral Fellow – Mastroeni Lab
Address: ASU-Banner Neurodegenerative Disease Research Center
Biodesign Institute and School of Life Sciences
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EDUCATION

Senior Postdoctoral Fellow (**2022 – at present**)

ASU-Banner Neurodegenerative Disease Research Center, USA. Project title “Contributions of Hindbrain to Alzheimer's Disease”. Supervisors: Drs. Diego Mastroeni, Geidy Serrano, and Thomas Beach

Senior Postdoctoral Fellow (**2021-2022**)

- Postdoctoral Fellow (**2020-2021**)

Department of Neuroscience, Mayo Clinic Arizona, USA. Project title “Nucleus incertus of the brain: mapping its genomic expression and changes in Alzheimer's disease”. Supervisor: Dr. John D. Fryer

Ph.D. in Neuroscience (**2016-2019**)

Department of Psychiatry and Neuroscience, Laval University, Canada. Thesis title: “The role of the relaxin-3/RXFP3 system in hyperphagia”. Supervisors: Dr Elena Timofeeva (2016-2017), Dr. Vincent Joseph, Dr. Carlo Cifani (2017-2019)

M.Sc. in Neurobiology (**2014-2016**)

Department of Psychiatry and Neuroscience, Laval University, Canada. Thesis title: “The role of relaxin-3/RXFP3 system in hyperphagia”. Supervisor: Dr. Elena Timofeeva

B.Sc. in Biology (**2005-2008**)

Pontifical Catholic University of Campinas, Brazil. Thesis title: “Review: Captive breeding of the *Caiman yacare*”. Supervisor: Luiza Ferreira Ishikawa

PROFESSIONAL EXPERIENCE

Visiting PhD student (**January 2019 – April 2019**) Arizona State University. Department Psychology. Supervisor: Dr. Cheryl D. Conrad.

Visiting PhD student (**October 2018 – December 2018**) University of Copenhagen. Department of Molecular Pharmacology and Biomedical Sciences. Supervisors: Dr. Ronsenkilde Mette, Dr. Birgitte Holst. Funded by Mitacs Globalink Research Award

Visiting PhD student (**October 2017 – July 2018**) University of Bordeaux. Department of Psychiatry. Supervisors: Dr. Lucile Capuron, Dr. Muriel Darnaudery, Dr. Pierre Trifilieff Funded by Erasmus+ International Mobility Program and *Fondation Famille Choquette*

Visiting PhD student (**September 2016 – December 2016**) Florey Institute. Department of Neuroscience and Mental Health. Supervisor: Dr. Andrew Gundlach. Funded by Australian Commonwealth Government Endeavour Research Fellowship

Product Development Coordinator (R&D) (**2009-2012**) Unilever Brazil Ltda. Supervisor: Sueli C Cagliari

Product Development Trainee (R&D) (**2007-2008**) Unilever Brazil Ltda. Supervisors: Milagros Goyogana, Ana Paula F de Andrade

Product Development Technical Analyst (R&D) (**2005-2006**) Unilever Vinhedo, SP, Brazil. Supervisor: Rogerio Colistoche

Microbiological Quality Control Intern (**2003-2004**) Unilever Ltd, Vinhedo, SP, Brazil. Supervisor: Rachel Crisol

FUNDINGS AND AWARDS

- SEE-Diversity (Scholarships to Enhance and Empower Diversity) program. Funded by the Alzheimer's Association. Venue: University of Chicago, August 27-31 (**2023**)
- Travel Award. International Society for Molecular Neurodegeneration Diversity Fellowship with support of the BrightFocus Foundation. Greece (**2022**)
- Alzheimer's Association Research Fellowship (AARF/AARF-D) program (Start date: 09/**2022**, End date: 08/2024). \$140,000. Role: PI
- Center for Health Equity and Community Engaged Research Award - Mayo Clinic Arizona (06/**2022** - 12/2022). \$50,000 USD. Role: PI
- Mayo Clinic and Arizona State University Alliance for Health Collaborative Research Seed Grant Program (07/01/**2021** - 06/30/2022). \$80,000 USD. Role: Co-PI
- Public Engagement Grant – American Society for Cell Biology/ Science Sandbox Simons Foundation (06/01/**2021** - 05/31/2022). \$41,664 USD. Role: PI
- Postdoctoral Fellowship – BrightFocus Foundation Alzheimer's Disease Research Program Award (07/01/**2021** - 06/30/2023). \$169,856.00 USD
- Travel Award - Postdoc Academy. USA (**2020**)
- Travel Award - Cardiometabolic Health, Diabetes and Obesity Research Network, Canada (**2019**)
- Poster Award - Cardiometabolic, Diabetes and Obesity Research Network, Canada (**2019**)
- Poster and Travel Award - European College of Neuropsychopharmacology. Spain (**2018**)
- Award of Excellence - Gold category for poster presentation - Canadian Institutes of Health Research. Canada (**2018**)
- Best Poster Award - Bordeaux Neurocampus Day. France (**2018**)
- Travel Award - Canadian Institutes of Health Research. Canada (**2018**)
- Best Poster Award - Matariki Winter School, Germany (**2018**)
- Mitacs Globalink Research Award. \$6,000 CAD. Canada (**2018**)
- First Prize Poster Presentation - Quebec Heart and Lung Institute Research Center. Canada (**2018**)
- IBRO Travel Award. Canada (**2017**)
- Mobility Scholarship - *Fondation Famille Choquette*. \$10,000 CAD. Canada (**2017**)
- Scholarship – *Fonds de recherche du Québec – Santé*. \$60,000 CAD. Canada (**2017**)
- Erasmus+ International Mobility Program. Bordeaux University, France. \$12,230 CAD, Canada (**2017**)
- First Prize Poster Presentation - Quebec Heart and Lung Institute Research Center. Canada (**2016**)
- Travel Award - Australasian Neuroscience Society. Australia (**2016**)
- FENS - Young Investigator Training Program. Denmark (**2016**)
- Scholarship of Excellence - Thematic Centre of Research in Neuroscience. \$12,000 CAD Canada. Category: PhD student (**2016**)

- Scholarship *Pierre J. Durand* - Faculty of Medicine, Laval University. \$10,000 CAD Canada. Category: PhD student **(2016)**
- Scholarship - Desjardins/ Quebec Heart and Lung Institute Research Center. \$13,500 CAD Canada. Category: Master student **(2016)**
- Scholarship - Quebec Heart and Lung Institute Research Center Quebec. \$12,000 CAD Canada. Category: Masters student **(2016)**
- Australian Commonwealth Government Endeavour Research Fellowship. \$24,500 AUD Australia. Category: Masters student **(2015)**

INTERNATIONAL PRESENTATIONS

- AD/PD 2024 Hybrid Meeting. Oral presentation: “Unveiling a novel memory center in humans: Neurochemical identification of the nucleus incertus, a key pontine locus implicated in stress and neuropathology” **(2024)**
- International Society for Molecular Neurodegeneration (ISMND) NextGen Virtual Meeting. Poster presentation: “RLN3 immunoreactivity and in situ hybridization reveal the human nucleus incertus: A step towards understanding its function and pathological implications in dementia” **(2023)**
- Alzheimer’s Association International Conference, Professional Interest Area in Neuromodulatory Subcortical Systems, Oral presentation: “The human nucleus incertus: A new target in dementia?”, and Poster presentation “The human nucleus incertus: A new target in dementia?” **(2023)**
- 4th EuroTau (Lille, France). Oral presentation: “Phosphorylated tau is present in the human nucleus incertus of the brain” **(2023)**
- 52nd Society for Neuroscience (San Diego, United States). Virtual Poster presentation: “From rat to human - Role of relaxin-3 and its receptor, RXFP3, in the hippocampus and memory” **(2022)**
- International Society for Molecular Neurodegeneration (ISMND). Poster presentation: “The relaxin-3/RXFP3 signaling system in the hippocampus and memory – rat and human studies” **(2022)**
- Science Talk 2022 (Portland, OR). Poster presentation “Navajo Science: Cultivating Scientific Interest Through Advanced Training Opportunities for American Indian Students” **(2022)**
- Cell Bio Virtual – Oral presentation “Navajo Science” during the “Public Engagement Session: The Imperative for Inclusive Science Communication: A Paradigm Shift to Center Equity” **(2021)**
- 49th Society for Neuroscience (Chicago, United States). Poster presentation: “Effects of silencing relaxin-3 production in nucleus incertus neurons on food intake, body weight, anxiety-like behaviour and limbic brain activity in female rats” **(2019)**
- 6th Congress of Asian College of Neuropsychopharmacology (Fukuoka, Japan). Oral presentation at the relaxin-3 symposium. Title: “Sex-specific effects of relaxin-3 on food intake and body weight” **(2019)**
- 31st European College of Neuropsychopharmacology (Barcelona, Spain). Poster presentation “*The effects of relaxin-3 knock down neurons on body weight and food intake in female rats*” **(2018)**
- European Conference of Obesity (Vienna, Austria). Poster presentation “*The effects of relaxin-3 knock down neurons on body weight and food intake in female rats*” **(2018)**
- Matariki Winter School “Sex Hormones and the Brain” and Symposium (Tübingen, Germany). Poster presentation “*Sex-specific effect of RLN3 on food intake and effect of estradiol levels on brain RLN3/RXFP3 system in rats*” and “*Influence of the ovarian cycle and estradiol on binge eating evoked in female rats by food restriction followed by frustration stress*” **(2018)**
- Canadian Association for Neuroscience Annual Meeting (Montreal, Canada). Poster presentation “*The effects of Relaxin-3 and a specific RXFP3 agonist on food intake and circulating hormones in rats*” **(2017)**
- Organization for the study of sex differences (Montreal, Canada). Poster presentation: “*Sex-Specific Effects of Chronic Administration of Relaxin-3 on Food Intake, Body Weight and the Hypothalamic-Pituitary-Gonadal Axis in Rats*” **(2017)**
- Australasian Neuroscience Society 36th Annual Scientific Meeting (Hobart, Australia). Poster presentation “*Effects of central (icv) administration of Relaxin-3 or an RXFP3-selective agonist on food intake and circulating hormones in adult male rats*” **(2017)**
- 10th Meeting of Federation of European Neuroscience Societies (Copenhagen, Denmark) **(2016)**
 - “Three Minutes Thesis” Oral presentation

- Poster presentation “Sex-specific effect of RLN3 on food intake and effect of estradiol levels on brain RLN3/RXFP3 system in rats”
- o International Behavioral Neuroscience Society 24th Annual Meeting (Victoria, Canada). Poster presentation “Stress increases sucrose intake in binge eating prone female rats” (2015)
- o International Brain Research Organization 9th World Congress (Rio de Janeiro, Brazil). Poster presentation “Stress increases sucrose intake in binge eating prone female rats” (2015)
- o International Relaxin and Related Peptides (Kuching, Malaysia). Poster presentation “Sex-specific effect of RLN3 on food intake and effect of estradiol levels on brain RLN3/RXFP3 system in rats” (2015)

PUBLICATIONS

Citations	311
h-index	10
i10-index	10

Under review (4):

Mastroeni, D., Chan, C. K., Morshed, N., Diouf, D., **de Ávila, C.**, Suazo, C., Nolz, J., Lopatin, U., Wang, Q., Serrano, G., Beach, T., Dunkley, T., Jensen, K., Van Den Hove, D., White, F.M., Chiu, P-L., Singharoy, A., Reiman, E.M., Readhead, B. P. (2024). Upregulation of the Proto-Oncogene Src Kinase in Alzheimer's Disease: From Molecular Interactions to Therapeutic Potential. *bioRxiv*. doi: 10.1101/2024.02.07.579336. *Cell Reports* (submitted)

Mastroeni, D., Wang, Q., Sierra, M., **de Ávila, C.**, Jimoh, T., Haure-Mirande, J.V., Atanasoff, K., Nolz, J., Suazo, C., Barton, N., Orszulak, A., Chigas, S., Tran, K., Mirza, A., Ryon, K., Proszynski, J., Dudley, J., Liu, S., Gandy, S., Ehrlich, M., Alsop, E., Antone, J., Reiman, R., Funk, C., Best, R., Jhatro, M., Kamath, K., Shon, J., Kowalik, T., Liang, W., Serrano, G., Beach, T., Keuren-Jensen, K.V., Mason, C., Chan, Y., Lim, E., Tortorella, D., Reiman, E. (2023) Alzheimer's disease-associated CD83(+) microglia linked with increased immunoglobulin G4 and human cytomegalovirus in the gut, vagal nerve, and brain, *Nature Communications* (under review)

de Ávila, C., Gugula, A., Trenk, A., Intorcchia, A.J., Suazo, C., Nolz, J., Plamondon, J., Khatri, D., Tallant, L., Caron, A., Blasiak, A., Serrano, G.E., Beach, T.D., Gundlach, A.L., Mastroeni, D. (2023). Unveiling a Novel Memory Center in Humans: Neurochemical Identification of the Nucleus Incertus, a Key Pontine Locus Implicated in Stress and Neuropathology. *bioRxiv*. doi: 10.1101/2023.09.08.556922. *Biological Research* (under review)

de Ávila, C., Suazo, C., Nolz, J., Cochran, J.N., Wang, Q., Velazquez, R., Dammer, E., Readhead, B., Mastroeni, D. (2023). Reduced PIN1 gene expression in neocortical and limbic brain regions in female Alzheimer's patients correlates with cognitive and neuropathological phenotypes. *bioRxiv*. doi: 10.1101/2023.08.14.553279. *Neurobiology of Aging* (accepted)

Peer-reviewed papers (12):

Olney, K., **de Ávila, C.**, Todd, K., Tallant, L., Barnett, J., Gibson, K., Hota, P., Pandiane, A.S., Cay-Durgun, P., Serhan, M., Wang, R., Lind, M.L., Forzani, E., Gades, N., Thomas, L., Fryer, D. J. (2022). Commonly disrupted pathways in brain and kidney in a pig model of systemic endotoxemia. *J Neuroinflammation* 21:9.

- Inamdar, S., Sures, A.P., Ng, N.D., Schmitzer, E., Lintecum, K., **de Ávila, C.**, Fryer, J.D., Xu Y., Achary, A.P. (2022). Biomaterial mediated simultaneous delivery of spermine and alpha ketoglutarate modulate metabolism and innate immune cell phenotype in sepsis mouse models. *Biomaterials* 293.
- Olney, K., Todd, K., Pallegar, P., Jensen, T., Sens, J., Cadiz, M., Gibson K., Barnett, J., **de Ávila, C.**, Bouchal, S., Rabichow, B., Ding, Z., Wojtas, A., Wilson, M., Fryer D., J (2021). Widespread choroid plexus contamination in sampling and profiling of brain tissue. *Molecular Psychiatry* 27:1839–1847.
- de Ávila, C.**, Chometton S., Calvez C., Guèvremont G., Kania A., Torz L., Lenglos C., Blasiak A., Rosenkilde M., Holst B., Conrad D. C., Fryer D. J., Timofeeva, E., Gundlach, A. L., & Cifani, C (2020). Estrous Cycle Modulation of Feeding and Relaxin-3/Rxfp3 mRNA Expression - Implications for Estradiol Action. *Neuroendocrinology* 111(12):1201-1218.
- de Ávila, C.**, Chometton, S., Ma, S., Pedersen, L. T., Timofeeva, E., Cifani, C., Gundlach, A. L. (2020). Effects of chronic silencing of relaxin-3 production in nucleus incertus neurons on food intake, body weight, anxiety-like behaviour and limbic brain activity in female rats. *Psychopharmacology (Berl)* 237, 1091-1106.
- Gueye, A. B., Vendruscolo, L. F., **de Ávila, C.**, Le Moine, C., Darnaudéry, M., Cador, M. (2018). Unlimited sucrose consumption during adolescence generates a depressive-like phenotype in adulthood. *Neuropsychopharmacology* 43, 2627-2635.
- de Ávila, C.**, Chometton, S., Lenglos, C., Calvez, J., Gundlach, A. L., Timofeeva, E. (2017). Differential effects of relaxin-3 and a selective relaxin-3 receptor agonist on food and water intake and hypothalamic neuronal activity in rats. *Behavioural Brain Research* 336, 135-144.
- Kania, A., Gugula, A., Grabowiecka, A., **de Ávila, C.**, Blasiak, T., Rajfur, Z., Lewandowski, M. H., Hess, G., Timofeeva, E., Gundlach, A. L., Blasiak, A. (2017). Inhibition of oxytocin and vasopressin neuron activity in rat hypothalamic paraventricular nucleus by relaxin-3–RXFP3 signalling. *Journal of Physiology* 595, 3425-3447.
- Calvez, J., **de Ávila, C.**, Guèvremont, G., Timofeeva, E. (2016). Sex-specific effects of chronic administration of relaxin-3 on food intake, body weight and the hypothalamic-pituitary-gonadal axis in rats. *Journal of Neuroendocrinology* 28 doi: 10.1111/jne.12439.
- Calvez, J., **de Ávila, C.**, Timofeeva, E. (2016). Sex-specific effects of relaxin-3 on food intake and body weight gain. *British Journal of Pharmacology* 174, 1049-1060. Web of Science: 14
- Calvez, J., **de Ávila, C.**, Guèvremont, G., Timofeeva, E. (2016). Stress differentially regulates brain expression of corticotropin-releasing factor in binge-like eating prone and resistant female rats. *Appetite* 107, 585-595.
- Calvez, J., Lenglos, C., **de Ávila, C.**, Guèvremont, G., Timofeeva, E. (2015). Differential effects of central administration of relaxin-3 on food intake and hypothalamic neuropeptides in male and female rats. *Genes, Brain and Behavior* 14, 550-563.
- Calvez, J., **de Ávila, C.**, Matte, L. O., Guèvremont, G., Gundlach, A. L., Timofeeva, E. (2015). Role of relaxin-3/RXFP3 system in stress-induced binge-like eating in female rats. *Neuropharmacology* 102, 207-215. Web of Science: 19

These articles have been cited >200 times (Web of Science)

https://www.ncbi.nlm.nih.gov/myncbi/camila.de_avila_dalbo.1/bibliography/public/

INVITED REVIEWER FOR JOURNALS AND FOUNDATIONS

- Frontiers in Neuroscience
- Neuropharmacology
- BMC Medical Genetics
- Brain Research
- Alzheimer's Association (AARF/D)

PROFESSIONAL MEMBERSHIPS

2023 -	International Society for Molecular Neurodegeneration
2021 -	American Association for the Advancement of Science
2020 -	American Society for Cell Biology
2019 -	American Academy of Neurology
2019 -	Society for Neuroscience
2019 -	National Postdoctoral Association
2020 - 2022	Association for Women in Science
2017 - 2018	Canadian Association for Neuroscience
2016 - 2017	Australasian Neuroscience Society
2016 - 2017	International Society for Matrix Biology
2015 - 2016	International Behavioural Neuroscience Society

COMMITTEES

- Early Career Researcher of the ISTAART Neuromodulatory Subcortical Systems PIA Executive Committee of the Alzheimer's Association International Society to Advance Alzheimer's Research and Treatment (ISTAART) (08/2024 – 07/2026)
- Arizona Co-Representative, Mayo Research Fellow's Association (06/2021 – 11/2021)
- Keynote & Plenary Subcommittee Chair. National Postdoctoral Association, USA (10/2020 – 05/2021)
- Poster Committee, National Postdoctoral Association (09/2019 – 09/2020)
- Sustainability Committee, Quebec heart and lung Institute Research Center (10/2017 – 04/2019)
- My health balance committee, Laval University "Mon équilibre Santé - Université Laval", representing the Association of Laval students enrolled in higher education (Aélies) (04/2017 – 04/2018)

MENTORSHIP

06/2023 – at present	undergraduate mentor for Divyanshi Katri, rising junior Biology, Barrett the Honors College – Arizona State University. Project: Contributions of the Hindbrain human nucleus incertus
08/2022 – 10/2022	undergraduate mentor for Diné Scholars: Nikki Anderson, Vaneka Hoskie, Raynie Arviso, Chantanielle Clyde, Lanea Desiderio Jim, and Shoshenna Chee. Mayo Clinic Research Internship (Navajo Science Project – Phase 2)
06/2022 – 08/2022	undergraduate mentor for Shoshenna Chee, Diné College. Mayo Clinic <u>Summer Undergraduate Research Fellows' Program</u>
10/2021 – 06/2022	public outreach mentorship, Navajo Science project at Mayo Clinic, for Lauren Tallant (master's candidate), Kennedy Todd, M.Sc., and Kimberly Olney, Ph.D. Mayo Clinic Arizona
06/2021 – 05/2022	undergraduate mentor for Diné Scholars: Nikki Anderson, Angel Leslie, Vaneka Hoskie, Raynie Arviso, Chantanielle Clyde, and Shoshenna Chee. Mayo Clinic Research Internship (Navajo Science Project – Phase 1)

VOLUNTEERING

- Facilitator for the Postdoc Academy Learning Session – Biological and Life Science. Online course: Succeeding as a postdoc. edX platform (10/2020 – 04/2021)
- Poster judge at the virtual Red Mountain Science Fair - Mesa Public Schools, Arizona (02/2021)
- Mentor – Big Brothers Big Sisters – Phoenix, Arizona (12/2020 – 10/2021)
- Poster judge at the Science & Engineering Fair – Mesa Public Schools, Arizona (02/2020)
- Volunteer at The University of Arizona's 5th annual Connect2STEM at the Arizona State University stand for Neuroscience (01/2019)
- Volunteer at "The Canadian Medical Hall of Fame". Coordinator of the procession of the prizewinners – Quebec, Quebec (05/2017)
- Volunteer work at the International Conference FENS. Denmark. Assistance to participants attending the conference, Copenhagen (07/2016)
- Volunteer work with children fighting cancer at Thaqafat Association (Rabat, Morocco), 140 hours (04/2011)
- Co-leader of the first initiative of volunteering in R&D sector at Unilever Brazil in Valinhos. Supporting disadvantaged children in Campinas and Valinhos communities (01/2011– 12/2011)