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## POSITIONS AND EMPLOYMENT

**ASSISTANT MEMBER** — **January 2021 – Current**
CELL BIOLOGY PROGRAM - SLOAN KETTERING INSTITUTE, MEMORIAL SLOAN KETTERING CANCER CENTER — New York, U.S.A

**ASSISTANT PROFESSOR** — **January 2021 – Current**
CELL AND DEVELOPMENTAL BIOLOGY PROGRAM - WEILL CORNELL MEDICAL COLLEGE, CORNELL UNIVERSITY — New York, U.S.A

**ASSISTANT PROFESSOR** — **January 2021 – Current**
GERSTNER SLOAN KETTERING (GSK) GRADUATE SCHOOL OF BIOMEDICAL SCIENCES, MEMORIAL SLOAN KETTERING CANCER CENTER — New York, U.S.A

## TRAINING

**POST-DOCTORAL RESEARCH SCIENTIST** — **November 2012 – December 2020**
DEPARTMENT OF CELL BIOLOGY – HARVARD MEDICAL SCHOOL — Boston, U.S.A
Supervisor: Professor J. Wade Harper

**POST-DOCTORAL RESEARCH SCIENTIST** — **October 2011 – October 2012**
MEDICAL RESEARCH COUNCIL PROTEIN PHOSPHORYLATION UNIT - UNIVERSITY OF DUNDEE — Dundee, U.K.
Supervisor: Professor Sir Philip Cohen, FRS, FRSE, FMedSci, FAA

**PH.D. STUDENT** — **January 2007 – September 2011**
MEDICAL RESEARCH COUNCIL PROTEIN PHOSPHORYLATION UNIT - UNIVERSITY OF DUNDEE — Dundee, U.K.
Supervisor: Professor Sir Philip Cohen, FRS, FRSE, FMedSci, FAA

## EDUCATION

**Ph.D., Biochemistry and Biomedical Sciences** — **January 2007 – October 2011**
UNIVERSITY OF DUNDEE – MRC-PPU — Dundee, United Kingdom
*Thesis:* An investigation of the role of E3 ubiquitin ligases in regulating innate immunity.

**Master (M.S.) of Biology Biotechnology and Therapeutic Research** — **September 2004 – May 2006**
FACULTY OF SCIENCES AND TECHNOLOGIES – UNIVERSITY OF NANTES — Nantes, France

**Licence (B.S.) of Pharmacology and Physiology** — **September 2002 – May 2004**
FACULTY OF SCIENCES AND TECHNOLOGIES – UNIVERSITY OF NANTES — Nantes, France

## FELLOWSHIPS AND AWARDS

**Fellowship:** - Medical Research Council Four-Year Ph.D. Studentship (2007 - 2010)
- Edward R. and Anne G. Lefler Center Postdoctoral Fellowship (2015 - 2017)

**Honors**: - Pew Biomedical Scholars, The Pew Charitable Trusts (2022)
- Kathryn W. Davis Aging Brain Scholars (2022).

# COMPLETE PUBLICATION LIST (53)

- Yi, S.A., Sepic, S., Schulman, B.A., **Ordureau, A.**, An, H. (2024) mTORC1-CTLH E3 Ligase Regulates the Degradation of HMG-CoA Synthase 1 through the Pro/N-Degron Pathway. *Mol Cell, In-Press*
- Nam, K.H., **Ordureau, A.** (2024) How does the neuronal proteome respond to nutrient stress? *Biochemical Society Transactions*. BST20230316.
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- DaRosa, P.A., Penchev, I., Gumbin, S.C., Scavone, F., Wąchalska, M., Paulo, J.A., **Ordureau, A.**, Peter, J.J., Kulathu, Y., Harper, J.W., Becker, T., Beckmann, R., Kopito, R.R. (2024) UFM1 E3 ligase promotes recycling of 60S ribosomal subunits from the ER. *Nature* 627(8003):445-452.
- Watts, M.E., Giadone, R.M., **Ordureau, A.**, Holton, K.M., Harper, J.W., Rubin, L.L. (2024) Analyzing the ER stress response in ALS patient-derived motor neurons identifies druggable neuroprotective targets. *Front. Cell. Neurosci*. 17, 1327361
- Morrone Parfitt, G., Coccia, E., Goldman, C., Whitney, K., Reyes, R., Sarrafha, L., Nam, K.H., Sohail, S., Jones, D.R., Crary, J.F., **Ordureau, A.**, Blanchard, J., Ahfeldt, T. (2024) Disruption of lysosomal proteolysis in astrocytes facilitates midbrain organoid proteostasis failure in an early-onset Parkinson's disease model. *Nat Communication*. 15(1):447
- Park, H.M., Le, L., Nguyen, T.T., Nam, K.H., **Ordureau, A.**, Lee, J.E., Nguyen, T.V. (2023) The $CRL3^{gigaxonin}$ ubiquitin ligase-USP15 pathway governs the destruction of neurofilament proteins. *Proc Natl Acad Sci USA*. 120(45):e2306395120.
- Yang, N., Wang, Y., Dai, P., Li, T., Zierhut, C., Tan, A., Zhang, T., Xiang, J.Z., **Ordureau, A.**, Funabiki, H., Chen, Z., Deng, L., (2023) Vaccinia E5 is a major inhibitor of the DNA sensor cGAS. *Nature Communication*. 14 (1), 2898
- Jordan, V.N., **Ordureau, A.**, An H. (2023) Identifying E3 Ligase Substrates with Quantitative Degradation Proteomics. *ChemBioChem*. e202300108
- Fiesel, F.C., Fričová, D., Hayes, C.S., Coban, M.A., Hudec, R., Bredenberg, J.M., Broadway, B.J., Markham, B.N., Yan, T., Boneski, P.K., Fiorino, G., Watzlawik, J.O., Hou, X., McCarty, A.M., Lewis-Tuffin, L.J., Zhong, J., Madden, B.J., **Ordureau, A.**, An, H., Puschmann, A., Wszolek, Z.K., Ross, O.A., Harper, J.W., Caulfield, T.R., Springer, W. (2023) Substitution of PINK1 Gly411 modulates substrate receptivity and turnover. *Autophagy*. 19 (6), 1711-1732.
- Nam, K.H, **Ordureau, A.** (2022) Quantitative proteome remodeling characterization of two human reference pluripotent stem cell lines during neurogenesis and cardiomyogenesis. *Proteomics*. 22 (19-20), 2100246
- Goldsmith, J., **Ordureau, A.**, Harper, J.W., Holzbaur, E.L.F. (2022) Brain-derived autophagosome profiling reveals the engulfment of nucleoid-enriched mitochondrial fragments by basal autophagy in neurons. *Neuron.* 110(6):967-976.e8.
- Welsh, K.A., Bolhuis, D.L., Nederstigt, A.E., Boyer, J., Temple, B.R.S., Bonacci, T., Gu, L., **Ordureau, A.**, Harper, J.W., Steimel, J.P., Zhang, Q., Emanuele, M.J., Harrison, J.S., Brown, N.G. (2021) Functional conservation and divergence of the helix-turn-helix motif of E2 ubiquitin-conjugating enzymes. *EMBO Journal*. 41(3):e108823.
- **Ordureau, A†**, Kraus, F., Zhang, J., An, H., Park, S., Ahfeldt, T., Paulo, J.A., Harper, J.W. † (2021) Temporal Proteomics During Neurogenesis Reveals Large-scale Proteome and Organelle Remodeling via Selective Autophagy. *Molecular Cell.* 81(24):5082-5098.
    - *Commentary:* Lazarou, M. (2021). Programmed autophagy prevents excess organelle baggage during neurogenesis. *Mol. Cell*, 81(24):4960-4961.
- Antico, O.*, **Ordureau, A.***, Stevens, M., Singh, F., Nirujogi, R.S., Gierlinski, M., Barini, E., Rickwood, M.L., Prescott, A., Toth, R., Ganley, I.G., Harper, J.W., Muqit, M.M.K. (2021) Global ubiquitylation analysis of mitochondria in primary neurons identifies endogenous Parkin targets following activation of PINK1. *Science Advances.* 7(46):eabj0722.
- **Ordureau, A.,** Yu, Q., Bomgarden, R.D., Rogers, J.C., Harper, J.W., Gygi, S.P., Paulo, J.A. (2021) Super Heavy TMTpro Labeling Reagent: An Alternative and Higher-Charge-State-Amenable Stable-Isotope-Labeled TMTpro Variant. *J Proteome Research*. 20(5): 009-3013.
- Najafov, A., Luu, H.S., Mookhtiar, A.K., Mifflin, L., Xia, H.G., Amin, P.P., **Ordureau, A.**, Wang, H., Yuan, J. (2021) RIPK1 Promotes Energy Sensing by the mTORC1 Pathway. *Molecular Cell*. 2021 81(2):370-385
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- An, H.*, **Ordureau, A.***, Korner, M., Paulo, J.A., Harper, J.W. (2020) Systematic Quantitative Analysis of Ribosome Inventory During Nutrient Stress. *Nature,* 583(7815), 303-309

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- **Ordureau, A.**, Paulo, J.A., Zhang, J., An, H., Swatek, K.N., Cannon, J.R., Wan, Q., Komander, D., Harper J.W. (2020) Global landscape and dynamics of Parkin and USP30-dependent ubiquitylomes in iNeurons during mitophagic signaling. *Molecular Cell.* 77(5):1124-1142.
- Ahfeldt, T., **Ordureau, A.**, Bell, C., Sarrafha, L., Sun, C., Piccinotti, S., Grass, T., Parfitt, G.M., Paulo, J.A., Yanagawa, F., Uozumi, T., Kiyota, Y., Harper, J.W., Rubin, L.L. (2020) Pathogenic pathways in early onset autosomal recessive Parkinson's disease discovered using isogenic human dopaminergic neurons. *Stem Cell Reports.* 14 (1), 75-90.
- Jacoupy, M., Hamon-Keromen, E., **Ordureau, A.**, Erpapazoglou, Z., Coge, F., Corvol, J-C., Nosjean, O., Mannoury La Cour, C., Millan, M. J., Boutin, J. A., Harper, J. W., Brice, A., Guedin, D., Gautier, C. A., Corti, O. (2019) The PINK1 kinase-driven ubiquitin ligase Parkin promotes mitochondrial protein import through the presequence pathway in living cells. *Scientific Reports*. 9(1):11829
- Gottlieb, C.D.*, Thompson, A.C.S.*, **Ordureau, A.**, Harper, J.W., Kopito, R.R. (2019) Acute unfolding of a single protein immediately stimulates recruitment of ubiquitin protein ligase E3C (UBE3C) to 26S proteasomes. *J Biol Chem.* 294 (45), 16511-16524
- Najafov, A., Mookhtiar, A.K., Luu, H.S., **Ordureau, A.**, Pan, H., Amin, P.P., Li, Y., Lu, Q., Yuan, J. (2019) TAM Kinases Promote Necroptosis by Regulating Oligomerization of MLKL. *Molecular Cell.* 75(3):457-468
- An, H., **Ordureau, A.**, Paulo, J.A., Shoemaker, C.J., Denic, V., Harper, J.W. (2019) TEX264 is an ER-resident ATG8-interacting protein critical for endoplasmic reticulum remodeling during nutrient stress. *Molecular Cell.* 74(5):891-908.
    - Featured in a Spotlight of Trends in Biochemical Science as well as Editor's Corner of Autophagy
- Heo, J.M., **Ordureau, A.**, Swarup, S., Paulo, J.A., Shen, K., Sabatini, D.M., Harper, J.W. (2018) RAB7A phosphorylation by TBK1 promotes mitophagy via the PINK-PARKIN pathway. *Science Advances*. Nov 21;4(11)
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- Harper, J.W., **Ordureau, A.**, Heo, J.M. (2018) Building and decoding ubiquitin chains for mitophagy. *Nat Rev Mol Cell Biol*. 19(2):93-108
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- Wang, B., Jie, Z., Joo, D., **Ordureau, A.**, Liu, P., Gan, W., Guo, J., Zhang, J., North, B.J., Dai, X., Cheng, X., Bian, X., Zhang, L., Harper, J.W., Sun, S.C., Wei, W. (2017) TRAF2 and OTUD7B govern a ubiquitin-dependent switch that regulates mTORC2 signalling. *Nature*, 545(7654):365-369.
- Liu L, Michowski W, Inuzuka H, Shimizu K, Nihira NT, Chick JM, Li N, Geng Y, Meng AY, **Ordureau A**, Kołodziejczyk A, Ligon KL, Bronson RT, Polyak K, Harper JW, Gygi SP, Wei W, Sicinski P. (2017) G1 cyclins link proliferation, pluripotency and differentiation of embryonic stem cells. *Nat Cell Biol.* 19(3):177-188.
- Rose C.M.*, Isasa M.*, **Ordureau A.**, Prado M.A., Beausoleil S.A., Jedrychowski M.P., Finley D.J., Harper J.W., Gygi S.P. (2016). Highly Multiplexed Quantitative Mass Spectrometry Analysis of Ubiquitylomes. *Cell Systems* 3(4):395-403
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- Heo, J.H., **Ordureau, A.**, Paulo, J.A., Rinehart, J., and Harper, J.W. (2015) The PINK1-PARKIN Mitochondrial Ubiquitylation Pathway Drives a Program of OPTN/NDP52 Recruitment and TBK1 Activation to Promote Mitophagy. *Molecular Cell* 60, 7–20.
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- **Ordureau, A.**, Munch, C., and Harper, J.W. (2015). Quantifying ubiquitin signaling. *Molecular Cell* 58, 660-676.
- **Ordureau, A.**, Heo, J.M., Duda, D.M., Paulo, J.A., Olszewski, J.L., Yanishevski, D., Rinehart, J., Schulman, B.A., and Harper, J.W. (2015). Defining roles of PARKIN and ubiquitin phosphorylation by PINK1 in mitochondrial quality control using a ubiquitin replacement strategy. *Proc Natl Acad Sci* USA 112, 6637-6642.
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    - *Commentary:* Stolz, A., & Dikic, I. (2014). PINK1-PARKIN interplay: down to ubiquitin phosphorylation. *Mol. Cell*, 56(3), 341–342.
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* denotes equal contribution, † denotes co-corresponding authors
Full bibliography with article citations: Alban Ordureau

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