



## Jonathan Z. Long

Associate Professor of Pathology

### Bio

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#### BIO

Dr. Jonathan Long is an Associate Professor of Pathology and an Institute Scholar of Stanford ChEM-H (Chemistry, Engineering & Medicine for Human Health). His laboratory studies the molecular mechanisms of mammalian energy homeostasis. Dr. Long is the recipient of the Alfred P. Sloan Research Fellowship in Chemistry, the Breakthrough Sciences Award from the Ono Pharma Foundation, and the NIDDK Catalyst Award. Prior to arriving to Stanford, Dr. Long completed his Ph.D. in Chemistry at Scripps Research and his postdoctoral work at Harvard Medical School.

#### ACADEMIC APPOINTMENTS

- Associate Professor, Pathology
- Member, Bio-X
- Member, Cardiovascular Institute
- Member, Wu Tsai Human Performance Alliance
- Member, Maternal & Child Health Research Institute (MCHRI)
- Institute Scholar, Sarafan ChEM-H
- Member, Stanford Cancer Institute
- Member, Wu Tsai Neurosciences Institute

#### ADMINISTRATIVE APPOINTMENTS

- Member, Stanford Diabetes Research Center, (2018- present)

#### HONORS AND AWARDS

- Research Fellowship in Chemistry, Alfred P. Sloan Foundation (2024)
- Ono Pharma Breakthrough Science Initiative Award, Ono Pharma Foundation (2020)
- NIH Pathways to Independence Award, National Institutes of Health (2015)

#### PROFESSIONAL EDUCATION

- Postdoc, Dana-Farber Cancer Institute and Harvard Medical School (2017)
- PhD, The Scripps Research Institute , Chemistry (2011)
- BA, Columbia University , Biochemistry (2007)

#### PATENTS

- Long JZ, Li VL, Banik SM. "United States Lactoyl amino acids for the treatment of metabolic disease", Leland Stanford Junior University, May 4, 2021

- Spiegelman BM, Long JZ, Lin H, Kamenecka T, Griffin P.. "United States Patent WO/2019/108739 Chemical uncouplers of respiration and methods of use thereof", Dana-Farber Cancer Institute Inc, Jun 6, 2019
- Spiegelman BM, Long JZ. "United States Patent WO2017075329A2 Methods for identification, assessment, prevention, and treatment of metabolic disorders using PM20D1 and N-lipidated amino acids", Dana-Farber Cancer Institute Inc, Oct 28, 2016
- Spiegelman BM, Rao RR, Long JZ. "United States Patent 14762375 Compositions and methods for regulating thermogenesis and muscle inflammation using METRNL and METRN", Dana-Farber Cancer Institute Inc, Jan 21, 2014
- Cravatt BF, Long JZ, Li W, Nomura DK. "United States Patent 12998642 Methods and compositions related to targeting monoacylglycerol lipase", The Scripps Research Institute, Jul 1, 2010

## LINKS

- Long Lab Homepage: <http://longlabstanford.org>

## Teaching

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### STANFORD ADVISEES

#### Doctoral Dissertation Reader (AC)

Sam Bollinger, Connor Call, Nicole Haseley, Weaverly Colleen Lee, Jeeyoon Na, Michelle Tang, Miles Tyner

#### Postdoctoral Faculty Sponsor

Truong Ly, Chanan Sessler, Jan Spaas, Shuke Xiao

#### Doctoral Dissertation Advisor (AC)

Hannah Cessna, Sipei Fu, Hye Won Kim

#### Doctoral Dissertation Co-Advisor (AC)

Kyle Trinh

### GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Biophysics (Phd Program)
- Cancer Biology (Phd Program)

## Publications

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### PUBLICATIONS

- **Mouse lemur cell atlas informs primate genes, physiology and disease.** *Nature*  
Ezran, C., Liu, S., Chang, S., Ming, J., Guethlein, L. A., Wang, M. F., Dehghannasiri, R., Olivieri, J., Frank, H. K., Tarashansky, A., Koh, W., Jing, Q., Botvinnik, et al  
2025
- **A molecular cell atlas of mouse lemur, an emerging model primate.** *Nature*  
Ezran, C., Liu, S., Chang, S., Ming, J., Botvinnik, O., Penland, L., Tarashansky, A., de Morree, A., Travaglini, K. J., Zhao, J., Wang, G., Hasegawa, K., Sin, et al  
2025
- **Altered immunometabolic response to fasting in humans living with obesity.** *iScience*  
Neudorf, H., Sandilands, R. E., Ursel, S., Shaba, H., Barg, D., Tsusaka, T., Moya-Garzón, M. D., Vaz, E., Schimweg, P., Goldberg, E. L., Long, J. Z., Krüger, K., Islam, et al  
2025; 28 (7): 112872
- **Glucose modulates IRF6 transcription factor dimerization to enable epidermal differentiation.** *Cell stem cell*  
Lopez-Pajares, V., Bhaduri, A., Zhao, Y., Gowrishankar, G., Donohue, L. K., Guo, M. G., Sibrashvili, Z., Miao, W., Nguyen, D. T., Yang, X., Li, A. M., Tung, A. S., Shanderson, et al  
2025

- **A key role of PIEZO2 mechanosensitive ion channel in adipose sensory innervation.** *Cell metabolism*  
Wang, Y., Zhang, Y., Leung, V. H., Seradj, S. H., Sonmez, U., Servin-Vences, M. R., Xiao, S., Ren, X., Wang, L., Mishkanian, S. A., Kini, S. A., Long, J. Z., Lipomi, et al  
2025
- **Applications of Metabolomics and Lipidomics in the Neonatal Intensive Care Unit.** *NeoReviews*  
Reiss, J. D., Mataraso, S. J., Holzapfel, L. F., Marić, I., Kasowski, M. M., Martin, C. R., Long, J. Z., Stevenson, D. K., Shaw, G. M.  
2025; 26 (2): e100-e114
- **Transgenerational associations between newborn metabolic profiles and bronchopulmonary dysplasia in neonates born to mothers with an obese phenotype.** *Scientific reports*  
Reiss, J. D., Yang, W., Chang, A. L., Long, J. Z., Marić, I., Profit, J., Sylvester, K. G., Stevenson, D. K., Aghaeepour, N., Shaw, G. M.  
2025; 15 (1): 1144
- **A  $\beta$ -hydroxybutyrate shunt pathway generates anti-obesity ketone metabolites.** *Cell*  
Moya-Garzon, M. D., Wang, M., Li, V. L., Lyu, X., Wei, W., Tung, A. S., Raun, S. H., Zhao, M., Coassolo, L., Islam, H., Oliveira, B., Dai, Y., Spaas, et al  
2024
- **SLC17A1/3 transporters mediate renal excretion of Lac-Phe in mice and humans.** *Nature communications*  
Li, V. L., Xiao, S., Schlosser, P., Scherer, N., Wigggenhorn, A. L., Spaas, J., Tung, A. S., Karoly, E. D., Köttgen, A., Long, J. Z.  
2024; 15 (1): 6895
- **PTER is a N-acetyltaurine hydrolase that regulates feeding and obesity.** *Nature*  
Wei, W., Lyu, X., Markhard, A. L., Fu, S., Mardjuki, R. E., Cavanagh, P. E., Zeng, X., Rajniak, J., Lu, N., Xiao, S., Zhao, M., Moya-Garzon, M. D., Truong, et al  
2024
- **Lac-Phe (N-lactoyl-phenylalanine).** *Trends in endocrinology and metabolism: TEM*  
Xiao, S., Li, V. L., Long, J. Z.  
2024; 35 (8): 758-759
- **A secondary analysis of indices of hepatic and beta cell function following 12 weeks of carbohydrate and energy restriction vs. free-living control in adults with type 2 diabetes.** *Nutrition & metabolism*  
Durrer, C., Islam, H., Cen, H. H., Garzon, M. D., Lyu, X., McKelvey, S., Singer, J., Batterham, A. M., Long, J. Z., Johnson, J. D., Little, J. P.  
2024; 21 (1): 29
- **Lac-Phe mediates the effects of metformin on food intake and body weight.** *Nature metabolism*  
Xiao, S., Li, V. L., Lyu, X., Chen, X., Wei, W., Abbasi, F., Knowles, J. W., Tung, A. S., Deng, S., Tiwari, G., Shi, X., Zheng, S., Farrell, et al  
2024
- **An organism-wide atlas of hormonal signaling based on the mouse lemur single-cell transcriptome.** *Nature communications*  
Liu, S., Ezran, C., Wang, M. F., Li, Z., Awayan, K., Long, J. Z., De Vlamincq, I., Wang, S., Epelbaum, J., Kuo, C. S., Terrien, J., Krasnow, M. A., Ferrell, et al  
2024; 15 (1): 2188
- **Size matters: the biochemical logic of ligand type in endocrine crosstalk.** *Life metabolism*  
Lone, J. B., Long, J. Z., Svensson, K. J.  
2024; 3 (1)
- **Molecular Insights From Multiomics Studies of Physical Activity.** *Diabetes*  
Wei, W., Raun, S. H., Long, J. Z.  
2024; 73 (2): 162-168
- **Binding and sequestration of poison frog alkaloids by a plasma globulin.** *eLife*  
Alvarez-Buylla, A., Fischer, M. T., Moya Garzon, M. D., Rangel, A. E., Tapia, E. E., Tanzo, J. T., Soh, H. T., Coloma, L. A., Long, J. Z., O'Connell, L. A.  
2023; 12
- **A class of secreted mammalian peptides with potential to expand cell-cell communication.** *Nature communications*  
Wigggenhorn, A. L., Abuzaid, H. Z., Coassolo, L., Li, V. L., Tanzo, J. T., Wei, W., Lyu, X., Svensson, K. J., Long, J. Z.

2023; 14 (1): 8125

- **Sensitization of cancer cells to ferroptosis coincident with cell cycle arrest.** *Cell chemical biology*  
Rodencal, J., Kim, N., He, A., Li, V. L., Lange, M., He, J., Tarangelo, A., Schafer, Z. T., Olzmann, J. A., Long, J. Z., Sage, J., Dixon, S. J.  
2023
- **The Rho guanine dissociation inhibitor  $\alpha$  inhibits skeletal muscle Rac1 activity and insulin action.** *Proceedings of the National Academy of Sciences of the United States of America*  
Møller, L. L., Ali, M. S., Davey, J., Raun, S. H., Andersen, N. R., Long, J. Z., Qian, H., Jeppesen, J. F., Henriquez-Olguin, C., Frank, E., Jensen, T. E., Højlund, K., Wojtaszewski, et al  
2023; 120 (27): e2211041120
- **CYP4F2 is a human-specific determinant of circulating N-acyl amino acid levels.** *The Journal of biological chemistry*  
Tanzo, J. T., Li, V. L., Wiggenhorn, A. L., Moya-Garzon, M. D., Wei, W., Lyu, X., Dong, W., Tahir, U. A., Chen, Z. Z., Cruz, D. E., Deng, S., Shi, X., Zheng, et al  
2023: 104764
- **Organism-wide, cell-type-specific secretome mapping of exercise training in mice.** *Cell metabolism*  
Wei, W., Riley, N. M., Lyu, X., Shen, X., Guo, J., Raun, S. H., Zhao, M., Moya-Garzon, M. D., Basu, H., Sheng-Hwa Tung, A., Li, V. L., Huang, W., Wiggenhorn, et al  
2023
- **Structural insights into the mechanism of leptin receptor activation.** *Nature communications*  
Saxton, R. A., Caveney, N. A., Moya-Garzon, M. D., Householder, K. D., Rodriguez, G. E., Burdsall, K. A., Long, J. Z., Garcia, K. C.  
2023; 14 (1): 1797
- **The role of somatosensory innervation of adipose tissues.** *Nature*  
Wang, Y., Leung, V. H., Zhang, Y., Nudell, V. S., Loud, M., Servin-Vences, M. R., Yang, D., Wang, K., Moya-Garzon, M. D., Li, V. L., Long, J. Z., Patapoutian, A., Ye, et al  
2022
- **An exercise-inducible metabolite that suppresses feeding and obesity.** *Nature*  
Li, V. L., He, Y., Contrepolis, K., Liu, H., Kim, J. T., Wiggenhorn, A. L., Tanzo, J. T., Tung, A. S., Lyu, X., Zushin, P. H., Jansen, R. S., Michael, B., Loh, et al  
2022
- **Nucleotide biosynthesis links glutathione metabolism to ferroptosis sensitivity.** *Life science alliance*  
Tarangelo, A., Rodencal, J., Kim, J. T., Magtanong, L., Long, J. Z., Dixon, S. J.  
1800; 5 (4)
- **Protocol for cell type-specific labeling, enrichment, and proteomic profiling of plasma proteins in mice.** *STAR protocols*  
Wei, W., Riley, N. M., Lyu, X., Bertozzi, C. R., Long, J. Z.  
1800; 2 (4): 101014
- **Molecular transducers and the cardiometabolic benefits of exercise.** *Nature reviews. Endocrinology*  
Long, J. Z.  
2021
- **Proteomic profiling reveals novel biomarkers and pathways in type 2 diabetes risk.** *JCI insight*  
Ngo, D. n., Benson, M. D., Long, J. Z., Chen, Z. Z., Wang, R. n., Nath, A. K., Keyes, M. J., Shen, D. n., Sinha, S. n., Kuhn, E. n., Morningstar, J. E., Shi, X. n., Peterson, et al  
2021
- **Identification of covalent inhibitors that disrupt M. tuberculosis growth by targeting multiple serine hydrolases involved in lipid metabolism.** *Cell chemical biology*  
Babin, B. M., Keller, L. J., Pinto, Y., Li, V. L., Eneim, A. S., Vance, S. E., Terrell, S. M., Bhatt, A. S., Long, J. Z., Bogyo, M.  
2021
- **Toxoplasma gondii serine hydrolases regulate parasite lipid mobilization during growth and replication within the host.** *Cell chemical biology*  
Onguka, O., Babin, B. M., Lakemeyer, M., Foe, I. T., Amara, N., Terrell, S. M., Lum, K. M., Cieplak, P., Niphakis, M. J., Long, J. Z., Bogyo, M.

2021

- **Adipose Tissue Lipokines: Recent Progress and Future Directions.** *Diabetes*  
Li, V. L., Kim, J. T., Long, J. Z.  
2020; 69 (12): 2541–48
- **Cell type-selective secretome profiling in vivo.** *Nature chemical biology*  
Wei, W., Riley, N. M., Yang, A. C., Kim, J. T., Terrell, S. M., Li, V. L., Garcia-Contreras, M., Bertozzi, C. R., Long, J. Z.  
2020
- **Proteomics illuminates fat as key tissue in aging** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Long, J. Z.  
2020; 117 (19): 10111–12
- **A Plasma Protein Network Regulates PM20D1 and N-Acyl Amino Acid Bioactivity.** *Cell chemical biology*  
Kim, J. T., Jedrychowski, M. P., Wei, W., Fernandez, D., Fischer, C. R., Banik, S. M., Spiegelman, B. M., Long, J. Z.  
2020
- **Cooperative enzymatic control of N-acyl amino acids by PM20D1 and FAAH.** *eLife*  
Kim, J. T., Terrell, S. M., Li, V. L., Wei, W. n., Fischer, C. R., Long, J. Z.  
2020; 9
- **Predicting 10-year mortality in adults with congenital heart disease** *International Journal of Cardiology Congenital Heart Disease*  
Fernandes, S. M., Lui, G. K., Long, J., Lin, A., Rogers, I. S., Sillman, C., Romfh, A., Dade, T., Dong, E., Haeffele, C., Scribner, C., Major, M., McElhinney, et al  
2020
- **Family-wide Annotation of Enzymatic Pathways by Parallel InVivo Metabolomics.** *Cell chemical biology*  
Kim, J. T., Li, V. L., Terrell, S. M., Fischer, C. R., Long, J. Z.  
2019
- **H<sup>+</sup> transport is an integral function of the mitochondrial ADP/ATP carrier** *NATURE*  
Bertholet, A. M., Chouchani, E. T., Kazak, L., Angelin, A., Fedorenko, A., Long, J. Z., Vidoni, S., Garrity, R., Cho, J., Terada, N., Wallace, D. C., Spiegelman, B. M., Kirichok, et al  
2019; 571 (7766): 515–+
- **Discovery of Hydrolysis-resistant Isoindoline N-Acyl Amino Acid Analogs that Stimulate Mitochondrial Respiration.** *Journal of medicinal chemistry*  
Lin, H. n., Long, J. Z., Roche, A. M., Svensson, K. J., Dou, F. n., Chang, M. R., Strutzenberg, T. n., Ruiz, C. n., Cameron, M. D., Novick, S. J., Berdan, C. M., Louie, S. n., Nomura, et al  
2018
- **Ablation of PM20D1 reveals N-acyl amino acid control of metabolism and nociception.** *Proceedings of the National Academy of Sciences of the United States of America*  
Long, J. Z., Roche, A. M., Berdan, C. A., Louie, S. M., Roberts, A. J., Svensson, K. J., Dou, F. Y., Bateman, L. A., Mina, A. I., Deng, Z. n., Jedrychowski, M. P., Lin, H. n., Kamenecka, et al  
2018
- **Cdkal1, a type 2 diabetes susceptibility gene, regulates mitochondrial function in adipose tissue.** *Molecular metabolism*  
Palmer, C. J., Bruckner, R. J., Paulo, J. A., Kazak, L., Long, J. Z., Mina, A. I., Deng, Z., LeClair, K. B., Hall, J. A., Hong, S., Zushin, P. H., Smith, K. L., Gygi, et al  
2017; 6 (10): 1212-1225
- **Do Adipocytes Emerge from Mural Progenitors?** *CELL STEM CELL*  
Vishvanath, L., Long, J. Z., Spiegelman, B. M., Gupta, R. K.  
2017; 20 (5): 585-586
- **The Secreted Enzyme PM20D1 Regulates Lipidated Amino Acid Uncouplers of Mitochondria** *CELL*  
Long, J. Z., Svensson, K. J., Bateman, L. A., Lin, H., Kamenecka, T., Lokurkar, I. A., Lou, J., Rao, R. R., Chang, M. R., Jedrychowski, M. P., Paulo, J. A., Gygi, S. P., Griffin, et al

2016; 166 (2): 424-435

- **A Secreted Slit2 Fragment Regulates Adipose Tissue Thermogenesis and Metabolic Function** *CELL METABOLISM*  
Svensson, K. J., Long, J. Z., Jedrychowski, M. P., Cohen, P., Lo, J. C., Serag, S., Kir, S., Shinoda, K., Tartaglia, J. A., Rao, R. R., Chedotal, A., Kajimura, S., Gygi, et al  
2016; 23 (3): 454-466
- **Endocannabinoid Catabolic Enzymes Play Differential Roles in Thermal Homeostasis in Response to Environmental or Immune Challenge** *JOURNAL OF NEUROIMMUNE PHARMACOLOGY*  
Nass, S. R., Long, J. Z., Schlosburg, J. E., Cravatt, B. F., Lichtman, A. H., Kinsey, S. G.  
2015; 10 (2): 364-370
- **Blockade of 2-Arachidonoylglycerol Hydrolysis Produces Antidepressant-Like Effects and Enhances Adult Hippocampal Neurogenesis and Synaptic Plasticity** *HIPPOCAMPUS*  
Zhang, Z., Wang, W., Zhong, P., Liu, S. J., Long, J. Z., Zhao, L., Gao, H., Cravatt, B. F., Liu, Q.  
2015; 25 (1): 16-26
- **Prolonged Monoacylglycerol Lipase Blockade Causes Equivalent Cannabinoid Receptor Type 1 Receptor-Mediated Adaptations in Fatty Acid Amide Hydrolase Wild-Type and Knockout Mice** *JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS*  
Schlosburg, J. E., Kinsey, S. G., Ignatowska-Jankowska, B., Ramesh, D., Abdullah, R. A., Tao, Q., Booker, L., Long, J. Z., Selley, D. E., Cravatt, B. F., Lichtman, A. H.  
2014; 350 (2): 196-204
- **Meteorin-like Is a Hormone that Regulates Immune-Adipose Interactions to Increase Beige Fat Thermogenesis** *CELL*  
Rao, R. R., Long, J. Z., White, J. P., Svensson, K. J., Lou, J., Lokurkar, I., Jedrychowski, M. P., Ruas, J. L., Wrann, C. D., Lo, J. C., Camera, D. M., Lachey, J., Gygi, et al  
2014; 157 (6): 1279-1291
- **Monoacylglycerol Lipase Inhibition Blocks Chronic Stress-Induced Depressive-Like Behaviors via Activation of mTOR Signaling** *NEUROPSYCHOPHARMACOLOGY*  
Zhong, P., Wang, W., Pan, B., Liu, X., Zhang, Z., Long, J. Z., Zhang, H., Cravatt, B. F., Liu, Q.  
2014; 39 (7): 1763-1776
- **A Smooth Muscle-Like Origin for Beige Adipocytes** *CELL METABOLISM*  
Long, J. Z., Svensson, K. J., Tsai, L., Zeng, X., Roh, H. C., Kong, X., Rao, R. R., Lou, J., Lokurkar, I., Baur, W., Castellot, J. J., Rosen, E. D., Spiegelman, et al  
2014; 19 (5): 810-820
- **Control of experimental spasticity by targeting the degradation of endocannabinoids using selective fatty acid amide hydrolase inhibitors** *MULTIPLE SCLEROSIS JOURNAL*  
Pryce, G., Cabranes, A., Fernandez-Ruiz, J., Bisogno, T., Di Marzo, V., Long, J. Z., Cravatt, B. F., Giovannoni, G., Baker, D.  
2013; 19 (14): 1896-1904
- **ABHD12 controls brain lysophosphatidylserine pathways that are deregulated in a murine model of the neurodegenerative disease PHARC** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Blankman, J. L., Long, J. Z., Trauger, S. A., Siuzdak, G., Cravatt, B. F.  
2013; 110 (4): 1500-1505
- **Dual Fatty Acid Amide Hydrolase and Monoacylglycerol Lipase Blockade Produces THC-Like Morris Water Maze Deficits in Mice** *ACS CHEMICAL NEUROSCIENCE*  
Wise, L. E., Long, K. A., Abdullah, R. A., Long, J. Z., Cravatt, B. F., Lichtman, A. H.  
2012; 3 (5): 369-378
- **The fatty acid amide hydrolase (FAAH) inhibitor PF-3845 acts in the nervous system to reverse LPS-induced tactile allodynia in mice** *BRITISH JOURNAL OF PHARMACOLOGY*  
Booker, L., Kinsey, S. G., Abdullah, R. A., Blankman, J. L., Long, J. Z., Ezzili, C., Boger, D. L., Cravatt, B. F., Lichtman, A. H.  
2012; 165 (8): 2485-2496
- **Inhibition of monoacylglycerol lipase attenuates vomiting in *Suncus murinus* and 2-arachidonoyl glycerol attenuates nausea in rats** *BRITISH JOURNAL OF PHARMACOLOGY*  
Sticht, M. A., Long, J. Z., Rock, E. M., Limebeer, C. L., Mechoulam, R., Cravatt, B. F., Parker, L. A.  
2012; 165 (8): 2425-2435

- **A PGC1-alpha-dependent myokine that drives brown-fat-like development of white fat and thermogenesis** *NATURE*  
Bostroem, P., Wu, J., Jedrychowski, M. P., Korde, A., Ye, L., Lo, J. C., Rasbach, K. A., Bostroem, E. A., Choi, J. H., Long, J. Z., Kajimura, S., Zingaretti, M. C., Vind, et al  
2012; 481 (7382): 463-U72
- **Endocannabinoid Hydrolysis Generates Brain Prostaglandins That Promote Neuroinflammation** *SCIENCE*  
Nomura, D. K., Morrison, B. E., Blankman, J. L., Long, J. Z., Kinsey, S. G., Marcondes, M. C., Ward, A. M., Hahn, Y. K., Lichtman, A. H., Conti, B., Cravatt, B. F.  
2011; 334 (6057): 809-813
- **Metabolomics annotates ABHD3 as a physiologic regulator of medium-chain phospholipids** *NATURE CHEMICAL BIOLOGY*  
Long, J. Z., Cisar, J. S., Milliken, D., Niessen, S., Wang, C., Trauger, S. A., Siuzdak, G., Cravatt, B. F.  
2011; 7 (11): 763-765
- **The Metabolic Serine Hydrolases and Their Functions in Mammalian Physiology and Disease** *CHEMICAL REVIEWS*  
Long, J. Z., Cravatt, B. F.  
2011; 111 (10): 6022-6063
- **Blockade of Endocannabinoid Hydrolytic Enzymes Attenuates Precipitated Opioid Withdrawal Symptoms in Mice** *JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS*  
Ramesh, D., Ross, G. R., Schlosburg, J. E., Owens, R. A., Abdullah, R. A., Kinsey, S. G., Long, J. Z., Nomura, D. K., Sim-Selley, L. J., Cravatt, B. F., Akbarali, H. I., Lichtman, A. H.  
2011; 339 (1): 173-185
- **Inhibition of Monoacylglycerol Lipase Attenuates Nonsteroidal Anti-Inflammatory Drug-Induced Gastric Hemorrhages in Mice** *JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS*  
Kinsey, S. G., Nomura, D. K., O'Neal, S. T., Long, J. Z., Mahadevan, A., Cravatt, B. F., Grider, J. R., Lichtman, A. H.  
2011; 338 (3): 795-802
- **Monoacylglycerol Lipase Exerts Dual Control over Endocannabinoid and Fatty Acid Pathways to Support Prostate Cancer** *CHEMISTRY & BIOLOGY*  
Nomura, D. K., Lombardi, D. P., Chang, J. W., Niessen, S., Ward, A. M., Long, J. Z., Hoover, H. H., Cravatt, B. F.  
2011; 18 (7): 846-856
- **Reversible Competitive alpha-Ketoheterocycle Inhibitors of Fatty Acid Amide Hydrolase Containing Additional Conformational Constraints in the Acyl Side Chain: Orally Active, Long-Acting Analgesics** *JOURNAL OF MEDICINAL CHEMISTRY*  
Ezzili, C., Mileni, M., McGlinchey, N., Long, J. Z., Kinsey, S. G., Hochstatter, D. G., Stevens, R. C., Lichtman, A. H., Cravatt, B. F., Bilsky, E. J., Boger, D. L.  
2011; 54 (8): 2805-2822
- **Inhibition of endocannabinoid catabolic enzymes elicits anxiolytic-like effects in the marble burying assay** *PHARMACOLOGY BIOCHEMISTRY AND BEHAVIOR*  
Kinsey, S. G., O'Neal, S. T., Long, J. Z., Cravatt, B. F., Lichtman, A. H.  
2011; 98 (1): 21-27
- **An anatomical and temporal portrait of physiological substrates for fatty acid amide hydrolase** *JOURNAL OF LIPID RESEARCH*  
Long, J. Z., LaCava, M., Jin, X., Cravatt, B. F.  
2011; 52 (2): 337-344
- **Fatty Acid Amide Hydrolase and Monoacylglycerol Lipase Inhibitors Produce Anti-Allodynic Effects in Mice Through Distinct Cannabinoid Receptor Mechanisms** *JOURNAL OF PAIN*  
Kinsey, S. G., Long, J. Z., Cravatt, B. F., Lichtman, A. H.  
2010; 11 (12): 1420-1428
- **Chronic monoacylglycerol lipase blockade causes functional antagonism of the endocannabinoid system** *NATURE NEUROSCIENCE*  
Schlosburg, J. E., Blankman, J. L., Long, J. Z., Nomura, D. K., Pan, B., Kinsey, S. G., Nguyen, P. T., Ramesh, D., Booker, L., Burston, J. J., Thomas, E. A., Selley, D. E., Sim-Selley, et al  
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