Personal Information
Scott M. Sternson, Ph.D.
DOB: 23 May, 1974

Education/Training
1992-1996 Bowdoin College, B.A.- Chemistry, *summa cum laude*
1994-1995 University of St. Andrews
1996-2001 Harvard University, PhD- Chemistry
2001-2006 Postdoctoral Associate- Rockefeller University
2002 Neural Systems and Behavior Course- Woods Hole, MA
2004 Computational Neuroscience Course- Woods Hole, MA

Positions
2007- Group Leader- Janelia Research Campus, HHMI

Honors
2018 Philip A. Sharp Lecture in Neural Circuits- McGovern Institute, MIT
2017 J Denis McGarry Lecture, Montreal Diabetes Research Center
2014 Linda and Jack Gill Transformative Investigator Award
2013 Helmholtz Foundation Young Investigator in Diabetes Award
2002-5 Helen Hay Whitney Foundation Postdoctoral Fellowship
2001 1st prize Harvard Business School Business Plan Contest
2001 1st prize Harvard Biotech Club Business Plan Contest
2001 Semifinalist MIT Business Plan Contest
1997 National Science Foundation predoctoral fellowship
1997 Derek Bok Award for Excellence in Teaching, Harvard University
1996 Phi Beta Kappa, Bowdoin College
1996 American Institute of Chemists Prize, Bowdoin College
1996 Guy Charles Howard Award for academic excellence, Bowdoin College
1992-6 James Bowdoin Scholar
1992-6 National Merit Scholarship from Dow Chemical

Conference Organization
2017 Keystone Conference: Neural Control of Appetite
2015 Hypothalamic Circuits for Control of Survival Behaviors
2015 Motivational Circuits
2013 Hormonal Control of Circuits for Complex Behaviors
2010 Genetic Manipulation of Neuronal Activity
2009 Can New Tools Revolutionize Understanding of Hypothalamic Circuits?
2007 Chemistry in Neuroscience

Service
2018 Scientific Advisory Board- Helmholtz Pioneer Campus
2017-19 Chan-Zuckerberg Cell Atlas Grant Review
2017-19 Scientific Review Committee, Klarman Family Foundation
2014 BRAIN Initiative Study Section- Cell type specification
2014-15 Integrated Physiology, Obesity, Diabetes study section, *ad hoc*
2012-13 Scientific Review Committee, Klarman Family Foundation
2011 Finals Judge, Siemens Foundation National Science Competition

Teaching

2019 Cajal Course- Biosensors and actuators- Bordeaux
2019 Winter school on Neural control of instinctive and innate behaviour
2017 Champalimaud summer neuroscience course- Lisbon
2015 Grass Fellowship lecture- CSHL, NY
2014 CSHL Course in Addiction- Barcelona
2011,13 FENS Course in Neural Circuits- Bertinoro, Italy
2001-2 Teacher for Graduate Equivalency Degree- Columbia University, New York
1996-7 Teaching Fellow- Chemistry- Harvard University

Editorial Board: Cell Metabolism

Advisory Board: SAB Helmholtz Research Campus (Munich), SAB Inscopix (Palo Alto)

Company: Founder- Redpin Therapeutics (2017)

Papers

40. Eiselt, A.-K., Chen, J., Arnold, J., Kim, T. & Sternson, S. M. Medial Prefrontal Cortex Guides Goal-Directed Decision-Making About Hunger and Thirst. *bioRxiv*, 620690 (2019); 10.1101/620690
39. J. Winnubst, E. Bas, T.A. Ferreira, Z. Wu, M.N. Economo, P. Edson, B.J. Arthur, C. Bruns, K. Rokicki, D. Schauder, D.J. Olbris, S.D. Murphy, D.J. Ackerman, C. Arshadi, P. Baldwin, R. Blake, A. Elsayed, M. Hasan, D. Ramirez, B.D. Santos, M. Weldon, A. Zafar, J.T. Dudman, C.R. Gerfen, A.W. Hantman, W. Korff, S.M. Sternson, N. Spruston, K. Svoboda, J. Chandrashekar. Reconstruction of 1,000 projection neurons reveals new cell types and organization of long-range connectivity in the mouse brain. *Cell* (2019), in press.
38. C.M. Magnus, P. Lee, J. Bonaventura, R. Zemla, J. L. Gomez, M. Ramirez, X. Hu, A. Galvan, J. Basu, M. Michaelides, S. M. Sternson. Ultrapotent chemogenetics for research and potential clinical applications. *Science* (2019) 10.1126/science.aav5282.
37. D. Atasoy & S.M. Sternson. Chemogenetic tools for causal cellular and neuronal biology. *Physiol. Rev.* 98 (2018) 391-418.
36. H. Yang and S.M. Sternson. Raphe circuits on the menu. *Cell* 170 (2017) 409-410.
35. S.M. Sternson & A.K. Eiselt. Three pillars for the neural control of appetite. *Annu Rev Physiol* 79 (2017) 401-23.
34. T. Branco, A. Tozer, C.J. Magnus, K. Sugino, S. Tanaka, A.K. Lee, J.N. Wood, S.M. Sternson. Near-perfect synaptic integration by $Na_v1.7$ in hypothalamic neurons regulates body weight. *Cell* 165 (2016) 1749-61.
33. S.M. Sternson, D. Atasoy, J.N. Betley, F.E. Henry, S. Xu. An emerging technology framework for the neurobiology of appetite. *Cell Metabolism* 23 (2016) 234-53.
32. S.M. Sternson. Hunger: the carrot and the stick. *Molecular Metabolism* 5 (2016) 1-2.
31. J.N. Betley and S.M. Sternson. Applying the brakes: When to stop eating. *Neuron* 88 (2015) 440-1.
30. Y. Yang, P. Lee, S.M. Sternson. Cell type-specific pharmacology of NMDA receptors using masked MK801. *eLife* (2015) 4:e10206.
29. F.E. Henry, K. Sugino, A. Tozer, T. Branco, S.M. Sternson. Cell type-specific transcriptomics of hypothalamic energy-sensing neuron responses to weight-loss. *eLife* (2015) 4:e09800.
28. J.N. Betley, S. Xu, Z.F. Huang Cao, R. Gong, C. Magnus, Y. Yang, S.M. Sternson. Neurons for hunger and thirst transmit a negative valence teaching signal. *Nature* 521 (2015), 180-185.

27. S.E. Simonds, J.T. Pryor, E. Ravussin, F.L. Greenway, R. Dileone, A.M. Allen, J. Bassi, J.K. Elmquist, J.M. Keogh, E. Henning, M.G. Myers Jr, J. Licinio, R.D. Brown, P.J. Enriori, S. O'Rahilly, S.M. Sternson, D.C. Spanswick, K.L. Grove, I.S. Farooqi, M.A. Cowley. Leptin mediates the increase in blood pressure associated with obesity. *Cell* **159** (2014) 1404-16.
26. S.M. Sternson & D. Atasoy. AGRP neuron circuits that regulate appetite. *Neuroendocrinology* **100** (2014) 95-102.
25. D. Atasoy, J.N. Betley, W-P. Li, H.H. Su, S.M. Sirtel, L.K. Scheffer, J.H. Simpson, R.D. Fetter, S.M. Sternson. A genetically specified connectomics approach applied to long-range feeding regulatory circuits. *Nature Neurosci.* **17**, (2014) 1830-9.
24. S.M. Sternson & B.L. Roth. Chemogenetic tools to interrogate brain functions. *Annu. Rev. Neurosci.* **37** (2014) 387-407.
23. T.J. Stachniak, A. Ghosh, S.M. Sternson. Chemogenetic synaptic silencing of neural circuits localizes a hypothalamus→midbrain pathway for feeding behavior. *Neuron* **82** (2014) 797-808.
22. J.N. Betley, Z.F. Huang Cao, K.D. Ritola, S.M. Sternson. Parallel, redundant circuit organization for homeostatic control of feeding behavior. *Cell* **155** (2013) 137-50.
21. S.M. Sternson, J.N. Betley, Z.F. Huang Cao. Neural circuits and motivational processes for hunger. *Current Opinion in Neurobiology* **23** (2013) 353-60.
20. S.M. Sternson. Hypothalamic survival circuits: blueprints for purposive behaviors. *Neuron* **77** (2013) 810-824.
19. D. Atasoy, J.N. Betley, H.H. Su, S.M. Sternson. Deconstruction of a neural circuit for hunger. *Nature* **488** (2012) 172-7.
18. L. Tian, Y. Yang, L.M. Wysocki, A.C. Arnold, A. Hu, B. Ravichandran, S.M. Sternson, L.L. Looger, L.D. Lavis. A Selective Esterase–Ester Pair for Targeting Small Molecules with Cellular Specificity. *PNAS* **109** (2012) 4756-61.
17. S.M. Sternson. Neuron transplantation partially reverses an obesity disorder in mice. *Cell Metabolism* **15** (2012) 133-4.
16. M. Lovett-Barron, G.F. Turi, P. Kaifosh, P.H. Lee, F. Bolze, X.H. Sun, J.F. Nicoud, B.V. Zemelman, S.M. Sternson, A. Losonczy. Regulation of neuronal input transformations by tunable dendritic inhibition. *Nature Neurosci.* **15** (2012) 423-30.
15. S.M. Sternson. Let them eat fat. *Nature* **477** (2011) 166-7.
14. Y. Yang, D. Atasoy, H.H. Su, S.M. Sternson. Hunger states switch a flip-flop memory circuit via a synaptic AMPK-dependent positive feedback loop. *Cell* **146** (2011) 992-1003.
13. C.J. Magnus, P.H. Lee, D. Atasoy, H.H. Su, L.L. Looger, S.M. Sternson. Chemical and genetic engineering of selective ion channel-ligand interactions. *Science* **333** (2011) 1292-6.
12. J.N. Betley & S.M. Sternson. Adeno-associated viral vectors for mapping, monitoring, and manipulating neural circuits. *Hum. Gene Ther.* **22** (2011) 669-77.
11. Y. Aponte, D. Atasoy, S.M. Sternson. AGRP neurons are sufficient to orchestrate feeding behavior rapidly and without training. *Nature Neurosci.* **13** (2011) 351-5.
10. H. Peng, Z. Ruan, D. Atasoy, S. Sternson. Automatic reconstruction of 3D neuron structures using a graph-augmented deformable model. *Bioinformatics* **26** (2010) i38-46.
9. M.M. Scott, J.L. Lachey, S.M. Sternson, C.E. Lee, C.F. Elias, J.M. Friedman, J.K. Elmquist. Leptin targets in the mouse brain. *J. Comp. Neurol.* **514** (2009) 518-32.
8. L. Petreanu, T Mao, S.M. Sternson, K. Svoboda. The subcellular organization of neocortical excitatory connections. *Nature* **26** (2009) 1142-5.

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6. S.M. Sternson, G.M.G. Shepherd, J.M. Friedman. Topographic mapping of VMH→arcuate nucleus microcircuits and their reorganization by fasting. *Nature Neurosci.* **10** (2005) 1356-63.
5. J.C. Wong, S.M. Sternson, J.B. Louca, R. Hong, S.L. Schreiber. Modular synthesis and preliminary biological evaluation of stereochemically diverse 1,3-dioxanes, *Chem. Biol.* **11** (2004) 1279-91.
4. F.G. Kuruvilla, A.F. Shamji, S.M. Sternson, P.J. Hergenrother, S.L. Schreiber. Dissection of a glucose-sensitive signaling pathway using diversity-oriented synthesis and small molecule microarrays. *Nature* **416** (2002) 653-7.
3. S.M. Sternson, J.C. Wong, C.M. Grozinger, S.L. Schreiber. Synthesis of 7200 small molecules based on a substructural analysis of the histone deacetylase inhibitors trichostatin and trapoxin, *Org. Lett.* **3** (2001) 4239-42.
2. S.M. Sternson, J.B. Louca, J.C. Wong, S.L. Schreiber. Split-pool synthesis of 1,3-dioxanes leading to arrayed stock solutions of single compounds sufficient for multiple cell-based and protein assays. *J. Am. Chem. Soc.* **123** (2001) 1740-47.
1. S.M. Sternson and S.L. Schreiber. An acid- and base-stable *o*-nitrobenzyl photolabile linker for solid phase organic synthesis. *Tetrahedron Lett.* **39** (1998) 7451-4.

Book

Sternson, S.M. (2018) “Man Can Do What He Wants But He Cannot Will What He Wants.” In *Think Tank: Forty Neuroscientists Explore the Biological Roots of Human Experience.* David Linden, Ed. New Haven, CT: Yale University Press.

Patents

1. Scott Sternson, Peter Lee, Christopher Magnus. Modified ligand gated ion channels and uses thereof. PCT/US2017/62584428, provisional. -Licensed by Redpin Therapeutics
2. Scott Sternson, Hui Yang, Fredrick Henry, Shengjin Xu. Materials and methods for serial multiplexed detection of nucleic acids in cells and tissues. PCT62/403,904, pending.
3. Scott Sternson, Christopher Magnus, Peter Lee. Modified ligand gated ion channels and uses thereof. PCT/US2017/041147, pending. -Licensed by Redpin Therapeutics
4. Scott Sternson, Loren Looger, Peter Lee. Novel chimeric ligand-gated ion channels and uses thereof. (2013) U.S. Pat. 8435762 -Licensed by Redpin Therapeutics
5. S.L. Schreiber, S.M. Sternson, J.C. Wong, C.M. Grozinger, S.J. Haggarty, K.M. Koeller. Dioxanes and uses thereof. (2007) U.S. Pat. 7244853. -Licensed by Enzo Life Sciences, Sigma-Aldrich, Acetylon (acquired by Celgene).