Thomas J. Park
Curriculum Vitae

May 2019

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Education:

Ph.D.	1988	University of Maryland, Psychology.
M.S.	1984	University of Maryland, Psychology.
B.A.	1982	Johns Hopkins University, Psychology.

Positions Held:

2013-Present	Associate Department Head
2017-Present	UIC Senate Member
2018	LAS Executive Committee Member
2013	Visiting Scientist, Max-Delbrück Center for Molecular Medicine, Berlin, Germany (sabbatical leave).
2010-2013	Co-Director, Laboratory of Integrative Neuroscience, Univ of Illinois at Chicago.
2010-2013	Neurobiology Coordinator, Dept of Biological Sciences, Univ of Illinois at Chicago.
2009-Present	Full Professor, Dept of Biological Sciences, Univ of Illinois at Chicago.
2000-2009	Associate Professor, Dept of Biological Sciences, Univ of Illinois at Chicago.
2001-2002	Visiting Scientist and Alexander von Humboldt Research Fellow, Max Planck Institute for Neurobiology, Munich, Germany (sabbatical leave).
1994-2000	Assistant Professor, Dept of Biological Sciences, Univ of Illinois at Chicago.
1994-1995	Alexander von Humboldt Research Fellow, Zoologisches Institut der Universitat Munchen.
1989-1994	Postdoctoral Research Associate, Department of Zoology, University of Texas.
1989	Postdoctoral Fellow, Institut d'Embryologie Cellulaire et Moleculaire, Paris, France.

Publications

1) 1985 Park TJ, Okanoya K, and Dooling RJ. Operant conditioning of small birds for acoustic discrimination. Journal of Ethology, 3: 5-9.
2) 1985 Park TJ and Dooling RJ. Perception of species specific contact calls by the budgerigar (Melopsittacus undulatus). Journal of Comparative Psychology, 99: 391-402.
3) 1986 Park TJ and Dooling RJ. Perception of degraded calls by the budgerigar (Melopsittacus undulatus). Animal Learning and Behavior, 14: 359-364.
4) 1987 Dooling RJ, Brown S, Park TJ, Okanoya K, and Soli S. Perceptual organization of acoustic stimuli by budgerigars (Melopsittacus undulatus): I. Pure tones. Journal of Comparative Psychology, 101: 139-149.
5) 1987 Dooling, RJ., Park TJ, Brown S, Okanoya K, and Soli S. Perceptual organization of acoustic stimuli by budgerigars (Melopsittacus undulatus: II. Vocal signals. Journal of Comparative Psychology, 101: 367-381.

6) 1987 Dooling, RJ., S. Soli S, R. Kline, Park TJ, C. Hue, and T. Bunnell Perception of synthetic speech sounds by the budgerigar (Melopsittacus undulatus). Psychonomic Society, 25: 139-142.
7) 1989 Park TJ, Dooling RJ, Rock S, and Okanoya K. Discrimination of natural contact calls by two strains of canary and the budgerigar. J of Ethology, 7: 167-169.
8) 1990 Dooling RJ, Park TJ, Brown SB, and Okanoya K. Perception of species specific vocalizations by isolate reared budgerigars (Melopsittacus undulatus). The Internat J of Comp Psychol, 4: 57 78.
9) 1990 Dooling, RJ., Brown S, Park TJ, Okanoya K. Natural Perceptual Categories for Vocal Signals in Budgerigars (Melopsittacus Undulatus) Comparative perception: Complex signals, volume two. Edited by W.C. Stebbins and M.A. Berkley. New York: John Wiley & Sons, 345-374.
10) 1991 Park TJ and R. Dooling RJ. Sound localization in small birds: Absolute localization in azimuth. Journal of Comparative Psychology, 105: 125 133.
11) 1991 Park TJ and Balaban E Relative salience of species maternal calls in neonatal gallinaceous birds: A direct comparison of Japanese quail (Coturnix coturnix japonica) and domestic chickens (Gallus gallus domesticus). Journal of Comparative Psychology, 105: 45 54.
12) 1992 Park TJ, Pollak GD, Winer JA, and Larue D. The circuitry and functional role of inhibitory projections to neurons sensitive to interaural intensity differences in the inferior colliculus. Journal De Physique IV (France), 2: C1 185-C1 188.
13) 1992 Park LC, Imboden J, Park TJ, Hulse S, and Unger T. Giftedness and psychological abuse in borderline personality disorder: Their relevance to genesis and treatment. J Personality Disorders, 6, 226-240.
14) 1993 Pollak, GD and Park TJ. The effects of GABAergic inhibition on monaural response properties of neurons in the mustache bat's inferior colliculus. Hearing Research, 65: 99-117.
15) 1993 Park TJ and Pollak GD. GABA shapes sensitivity to interaural intensity disparities in the mustache bat's inferior colliculus: Implications for encoding sound location. Journal of Neuroscience, 13: 2050 2067.
16) 1993 Park TJ and Pollak GD. GABA shapes a topographic organization of latencies in the mustache bat's inferior colliculus. Journal of Neuroscience, 13: 5172 5187.
17) 1994 Weisleder P and Park TJ. Belgian Waterslager canaries are afflicted by Scheibe's-like dysplasia. Hearing Research, 80: 64 70.
18) 1994 Park TJ and Pollak GD. Receptive fields in the inferior colliculus of the mustache bat are shaped by GABAergic inhibition. J. Neurophysiology, 72: 1080 1102.
19) 1995 Klug A, Park TJ, and Pollak GD. Glycine and GABA influence binaural processing in the inferior colliculus of the mustache bat. J. Neurophysiology, 74: 1701-1713.
20) 1995 Grothe B and Park TJ. Time can be traded for intensity in the lower auditory system. Naturwissenschaften, 82: 521-523.
21) 1996 Park TJ, and Grothe B. From pattern recognition to sound localization: A byproduct of growing larger during evolution. Naturwissenschaften, 83: 30-32.
22) 1996 Weisleder P, Lu Y, and Park TJ. Anatomical basis of a congenital hearing impairment: Basilar papilla dysplasia in the Belgian Waterslager canary. J. Comparative Neurology, 396: 292 301.
23) 1996 Park TJ, Grothe B, Pollak GD, Schuller G, and Koch U. Neural delays shape selectivity to interaural intensity differences in the lateral superior olive. J. Neuroscience 16: 6554-6566.
24) 1997 Park TJ, Monsivais P, and Pollak G. Processing of interaural intensity differences in the LSO: The role of interaural threshold differences. J Neurophysiology 77:2863-78.
25) 1997 Grothe B, Park TJ, and Schuller G. The medial superior olive in the free-tailed bat: Response to pure tones and amplitude modulated tones. J. Neurophysiology 77: 1553-1565.
26) 1998 Park TJ. IID Sensitivity Differs Between Two Principal Centers in the Interaural Intensity Difference Pathway: The LSO and the IC. J. Neurophysiology, 79, 2416-2431.
27) 1998 Park TJ, Klug A, Oswald J, and Grothe, B. A novel circuit in the bat's midbrain recruits neurons into sound localization processing. Naturwissenschaften, 85, 176-9.

28) 1998 Wiesleder, P, Lu Y, and Park TJ, Hair cells of a congenitally hearing impaired canary have abnormal distributions of filimentos protiens. Primary Sensory Neuron,2:297-3.

29) 1998 Grothe, B. and Park TJ, Sensitivity to interaural time differences in the medial superior olive of a small mammal, the Mexican free-tailed bat. J. Neuroscience, 18, 6608-6622.

30) 1999 Oswald, JP, Klug A, and Park TJ, Interaural Intensity Difference Processing in Auditory Midbrain Neurons: Effects of a Transient Early Inhibitory Input. J. Neuroscience, 19, 1149-1163.

31) 2000 Klug A., Khan A, Burger RM, Bauer EE, Hurley LM, Yang L, Grothe B, Halvorsen MB, Park TJ. Latency as a function of intensity in auditory neurons: Influences of central processing. Hearing Research, 148, 107-23.

32) 2000 Grothe B and Park TJ. Structure and function of the bat superior olivary complex. Microscopy Research Techniques, 51, 382-402.

33) 2002 Endo H, Okanoya K, Park TJ, Sasaki M, Tanemura K, Kimura J, and Hayashi Y. Localization of the cytochrome p450 side-chain cleavage enzyme in the inactive testis of the naked mole-rat. Zoolog Sci., 19, 673-678.

34) 2002 Pollak GD, Burger RM, Park TJ, Klug A, Bauer EE.. Roles of inhibition for transforming binaural properties in the brainstem auditory system. Hearing Research, 168, 60-78.

35) 2002 Artwohl J, Hill T, Comer CM, and Park TJ. Naked Mole-Rats: Unique Opportunities and Husbandry Challenges. Laboratory Animal, 31, 32-36.

36) 2003 Crish S, Rice FL, Park TJ, and Comer CM. Somatosensory organization and behavior in Naked Mole-Rats I: Vibrissa-like body hairs comprise a sensory array that mediates orientation to tactile stimuli, Brain, Behavior, & Evolution, 62: 141-61.

37) 2003 Park TJ, Comer CM, Carol A, Lu Y, Hong H-S, and Rice FL. Somatosensory organization and behavior in Naked Mole-Rats II: Peripheral Structures, Innervation, and Selective Lack of Neuropeptides Associated with Thermoregulation and Pain, J Comp Neurol, 465, 104-120.

38) 2003 Lu, Y., Park TJ, Rice FL, Laurito CE. The absence of Substance P and CGRP in the dorsal root ganglia of naked mole-rats selectively alters the animal's response to noxious stimuli. International Association for the Study of Pain Proceedings, 235-243.

39) 2004 Park TJ, Klug A, Holinstat MA, and Grothe B. Interaural Level Difference Processing in the Lateral Superior Olive and Inferior Colliculus. Journal of Neurophysiology, Vol 92: 289-301.

40) 2004 Lewin GR, Lu Y, Park TJ. A plethora of painful molecules. Curr Opin Neurobiol. 14(4):443-9.

41) 2005 Hetling JR, Baig-Silva MS, Comer CM, Pardue MT, Samaan DY, Qtaishat NM, Pepperberg DR, Park TJ. Features of visual function in the naked mole-rat (Heterocephalus glaber). J Comp Physiol A. 2005 Apr;191(4):317-30.

42) 2006 Lu Y, Wilson SP, Laurito CE, Rice FL, and Park TJ. Substance P enables C-Fiber-mediated nociceptive responses in naked mole-rats. International Association for the Study of Pain Proceedings, 169-177 (Invited).

43) 2007 Smith TD, Bhatnagar KP, Dennis JC, Morrison EE, Park TJ. Growth-deficient vomeronasal organs in the naked mole-rat (Heterocephalus glaber). Brain Research, 1132(1):78-83.

44) 2007 Park TJ, Catania KC, Samaan D, and Comer CM. Adaptive Neural Organization of Naked Mole-Rat Somatosensation (and those Similarly Challenged). In Subterranean Rodents - News from Underground, S Begall, H Burda, CE Schleich (eds), pp 175-93.

45) 2008 Park TJ, Brand A, Koch U, Ikebuchi M, Grothe B. Dynamic changes in level influence spatial coding in the lateral superior olive. Hearing Res. 2008 Apr;238(1-2):58-67.

46) 2008 Park TJ, Lu Y, Jüttner R, Smith ES, Hu J, Brand A, Wetzel C, Milenkovic N, Erdmann B, Heppenstall PA, Laurito CE, Wilson SP, Lewin GR. Selective inflammatory pain insensitivity in the African naked mole-rat (Heterocephalus glaber). PLoS Biol. 2008 Jan;6(1):e13.

47) 2008 Magnusson AK, Park TJ Grothe B, and Koch U. Retrograde GABA signaling adjusts sound localization by balancing excitation and inhibition in the brainstem. Neuron, 59: 125–137.

48) 2009 Artwohl J, Ball-Kell S, Valyi-Nagy T, Wilson SP, Lu Y, and Park TJ. Extreme Susceptibility to Herpes Simplex Virus Type 1 Infection in African Naked Mole-Rats (Heterocephalus glaber). Comp Med. Feb;59(1):83-90.

49) 2009 LaVinka PC, Brand A, Landau VJ, and Park TJ. Extreme Tolerance to Ammonia Fumes in African Naked Mole-Rats: Animals that Naturally Lack Neuropeptides from Trigeminal Chemosensory Nerve Fibers. J. Comp Physiol A. 195(5):419-27.

50) 2009 Larson J and Park TJ. Extreme Hypoxia Tolerance of Naked Mole-Rat Brain. NeuroReport, 20(18):1634-7.

51) 2010 Park TJ, Lewin GR, Buffenstein R. The Extraordinary Sensory World of the Naked Mole-Rat. In Breed M.D. and Moore J. (eds) Encyclopedia of Animal Behavior 2010, pp. 505-512. Oxford: Academic Press.

52) 2010 Smith EStJ, Blass GR, Lewin GR, Park TJ. Absence of histamine-induced itch in the African naked mole-rat and "rescue" by Substance P. Molecular Pain. 2010 May 24;6(1):29.

53) 2010 Brand A, Smith ESJ, Lewin GR, Park TJ. Functional Neurokinin and NMDA Receptor Activity in an Animal Naturally Lacking Substance P: The Naked Mole-Rat. PLoS ONE 5(12): e15162.

54) 2011 Edrey YH, Park TJ, Kang H, Biney A, Buffenstein R. Endocrine function and neurobiology of the longest-living rodent, the naked mole-rat. Exp Gerontol. 46(2-3):116-23.

55) 2011 Kasaikina MV, Lobanov AV, Malinouski MY, Lee BC, Seravalli J, Fomenko DE, Turanov AA, Finney L, Vogt S, Park TJ, Miller RA, Hatfield DL, Gladyshev VN. Reduced utilization of selenium by naked mole rats due to a specific defect in GPx1 expression. J Biol Chem. 2011 May 13;286(19):17005-14.

56) 2011 Kim EB, Fang X, Fushan AA, Huang Z, Lobanov AV, Han L, Marino SM, Sun X, Turanov AA, Yang P, Yim SH, Zhao X, Kasaikina MV, Stoletzki N, Peng C, Polak P, Xiong Z, Kiezun A, Zhu Y, Chen Y, Kryukov GV, Zhang Q, Peshkin L, Yang L, Bronson RT, Buffenstein R, Wang B, Han C, Li Q, Chen L, Zhao W, Sunyaev SR, Park TJ, Zhang G, Wang J, Gladyshev VN. Genome sequencing reveals insights into physiology and longevity of the naked mole rat. Nature, 479: 223-7.

57) 2012 Buffenstein R, Park T, Hanes M, Artwohl JE, Naked Mole Rat. In The Laboratory Rabbit, Guinea Pig, Hamster, and Other Rodents (MA Suckow, KA Stevens and RP Wilson, eds) Elsevier, 2012 pp 1055-1074.

58) 2012 Malinouski M, Kehr S, Finney L, Vogt S, Carlson BA, Seravalli J, Jin R, Handy DE, Park TJ, Loscalzo J, Hatfield DL, Gladyshev VN. High-resolution imaging of selenium in kidneys: a localized selenium pool associated with glutathione peroxidase 3. Antioxid Redox Signal. 2012 Feb 1;16(3):185-92.

59) 2012 Peterson BL, Park TJ, Larson J. Adult naked mole-rat brain retains the NMDA receptor subunit GluN2D associated with hypoxia tolerance in neonatal mammals. Neurosci Lett. 506: 342-345.

60) 2012 Peterson BL, Larson J, Buffenstein R, Park TJ, Fall CP. Blunted neuronal calcium response to hypoxia in naked mole-rat hippocampus. PLoS One. 7(2):e31568. Epub 2012 Feb 21.

61) 2012 Smith EStJ, Purfürst B, Grigoryan T, Park TJ, Bennett NC, Lewin GR. A specific paucity of unmyelinated C-fibers in cutaneous peripheral nerves of the African naked-mole rat: A comparative analysis using six species of bathyergidae. J Comp Neurol. 2012 Apr 24. doi: 10.1002/cne.23133.

62) 2012 LaVinka PC and Park TJ. Blunted Behavioral and C Fos Responses to Acidic Fumes in the African Naked Mole-Rat. PLoS ONE, 2012;7(9):e45060.

63) 2014 Tupal S, Rieger MA, Ling GY, Park TJ, Dougherty JD, Goodchild A, and Gray PA. Testing the role of preBötzinger complex somatostatin neurons in respiratory and vocal behaviors. European Journal of Neuroscience, 40(7):3067-77.

64) 2014 Larson J, Drew KL, Folkow LP, Milton SL, Park TJ. No Oxygen? No Problem! Intrinsic Brain Tolerance to Hypoxia in Vertebrates. J of Experimental Biol (2014) 217, 1024-1039.

65) 2014 Fang X, Seim I, Huang Z, Gerashchenko MV, Xiong Z, Turanov AA, Zhu Y, Lobanov AV, Fan D, Yim SH, Yao X, Ma S, Yang L, Lee S-G, Kim EB, Bronson RT, Šumbera R, Buffenstein R, Zhou X, Krogh A, Park TJ, Zhang G, Wang J, Gladyshev VN. Adaptations to a Subterranean Environment and Longevity Revealed by the Analysis of Mole Rat Genomes. Cell Reports, 8(5):1354-64.

66) 2014 Pan J, Park TJ, Cutz E, Yeger H. Immunohistochemical characterization of the chemosensory pulmonary neuroepithelial bodies in the naked mole-rat reveals a unique adaptive phenotype. PLoS ONE. 9(11):e112623.

67) 2015 Villar D, Berthelot C, Aldridge S, Rayner TF, Lukk M, Pignatelli M, Park TJ, Deaville R, Erichsen JT, Jasinska AJ, Turner JMA, Murchison EP, Flicek P, Odom DT. Enhancer evolution across twenty mammals. Cell. 160(3):554-66.

68) 2015 Penz OK, Fuzik J, Kurek AB, Romanov R, Larson J, Park TJ, Harkany T, Keimpema E. Protracted brain development in a rodent model of extreme longevity. Sci Rep. 29;5:11592.

69) 2015 Ma S, Yim S-H, Lee S-G, Kim EB, Lee S-R, Chang K-T, Buffenstein R, Lewis KN, Park TJ, Miller RA, Clish CB, and Gladyshev VN. Organization of the Mammalian Metabolome according to Organ Function, Lineage Specialization, and Longevity. Cell Metabolism. 22(2):332-43.

70) 2015 Ma S, Lee SG, Kim EB, Park TJ, Seluanov A, Gorbunova V, Buffenstein R, Seravalli J, Gladyshev VN. Organization of the Mammalian Ionome According to Organ Origin, Lineage Specialization, and Longevity. Cell Rep. 13(7):1319-1326.

71) 2016 Gessele N, Garcia-Pino E, Omerbašić D, Park TJ, Koch U. Structural Changes and Lack of HCN1 Channels in the Binaural Auditory Brainstem of the Naked Mole-Rat (Heterocephalus glaber). PLoS One. 11(1):e0146428.

72) 2017 Lee SG, Mikhalchenko AE, Yim SH, Lobanov AV, Park JK, Choi KH, Bronson RT, Lee CK, Park TJ, Gladyshev VN. Naked Mole Rat Induced Pluripotent Stem Cells and Their Contribution to Interspecific Chimera. Stem Cell Reports, https://doi.org/10.1016/j.stemcr.2017.09.013.

73) 2017 Park TJ, Reznick J, Peterson BL, Blass G, Omerbašić D, Bennett NC, Kuich PHJL, Zasada C, Browe BM, Hamann W, Applegate DT, Radke MH, Kosten T, Lutermann H, Gavaghan V, Eigenbrod O, Bégay V, Amoroso VG, Govind V, Minshall RD, Smith ESJ, Larson J, Gotthardt M, Kempa S, Lewin GR. Fructose-driven glycolysis supports anoxia resistance in the naked mole-rat. Science. 356(6335):307-311.

74) 2018 Das V, Kc R, Li X, Varma D, Qiu S, Kroin JS, Forsyth CB, Keshavarzian A, van Wijnen AJ, Park TJ, Stein GS, O-Sullivan I, Burris TP, Im HJ. Pharmacological targeting of the mammalian clock reveals a novel analgesic for osteoarthritis-induced pain. Gene. 2018 May 20;655:1-12.

75) 2018 Das V Kc R, Li X, O-Sullivan I, van Wijnen AJ, Kroin JS, Pytowskie B, Applegate DT, Votta-Velis G, Ripper RL, Park TJ, Im HJ. Blockade of vascular endothelial growth factor receptor-1 (Flt-1), reveals a novel analgesic for osteoarthritis-induced joint pain. Gene Reports 11, 94-100.

76) 2018 Browe BM, Vice EN, Park TJ. Naked Mole-Rats: Blind, Naked, and Feeling No Pain. The Anatomical Record Oct 26. doi: 10.1002/ar.23996. [Epub ahead of print].

77) 2018 Okanoya K, Yosida S, Barone CM, Applegate DT, Brittan-Powell EF, Dooling RJ, and Park TJ. Auditory-Vocal Coupling in the Naked Mole-Rat, A Mammal with Poor Auditory Thresholds. Journal of Comparative Physiology A. 204(11):905-914. doi: 10.1007/s00359-018-1287-8.

78) 2019 Dennis JC, Stilwell NK, Smith TD, Park TJ, Bhatnagar KP, Morrison EE. Is the mole-rat vomeronasal organ functional? Anatomical Record. doi: 10.1002/ar.24060.

79) 2019 Barone CM, Douma S, Reijntjes DOJ, Browe BM, Köppl C, Klump G, Park TJ, Pyott SJ. Altered cochlear innervation in developing and mature naked and Damaraland mole rats. J Comp Neurol. doi: 10.1002/cne.24682.

80) 2019 Eigenbrod O, Debus KY, Reznick J, Bennett NC, Omerbašić D, Sánchez-Carranza O, Hart DW, Barker AJ, Lutermann H, Katandukila JV, Mgode G, Park TJ, Lewin GR. Rapid molecular evolution of pain insensitivity in multiple African rodents. Science, In Press.

List of Completed, Current, and Pending Extramural Research Support:

Current

1/15/18-1/14/22 NSF, Neurobiology of the Naked Mole-Rat, $1,000,000, PI.
The goal of this project is to determine the underlying mechanisms that make the brain of the naked mole-rat extremely tolerant to oxygen deprivation.

9/1/19-8/31/20, DOA, A Novel Enzyme Replacement Therapy for Robust Hypoxia Tolerance and Mitigation of Reperfusion Injury in Vascularized Composite Allotransplantation, CoI.
The goal of this project is to show that characteristics of hypoxia tolerance in the naked mole-rat can be used to improve outcomes in limb and organ transplants in laboratory mice.

Completed

1986-88 NIMH, "Biological basis of perceptual learning," $16,000, PI.
The goal of this pre-doctoral fellowship project was to measure the ability of animals to learn natural vocalizations versus artificial sounds.

1989 CNRS, "Neuronal bases for inter-species perceptual differences," $15,000, PI.
The goal of this post-doctoral fellowship project was to measure perceptual differences in two neonatal birds for their own vocalizations versus the vocalizations of other species.

1989-92 NIH, "Biological basis of perceptual learning: Hormonal effects," $62,000, PI. The goal of this post-doctoral fellowship project was to measure the effects of hormones on learning ability n animals.

1989-90 NIH, "Neural response properties of single neurons in the inferior colliculus," $18,000, PI.
The goal of this post-doctoral fellowship project was measure the physiological properties of single neurons that code information about sound localization.

1993-94 Alexander von Humboldt, "Info processing in the mammalian auditory system," $20,000, PI.
The goal of this post-doctoral fellowship project was to measure the physiological properties of single neurons that code information about biologically relevant sound stimuli in animals.

1996-97 National Organization for Hearing Research, "Biochemical basis of congenital hearing impairment," $5,000, co-PI.
The goal of this project was to determine the anatomical and biochemical properties of the inner ear of an animal model of congenital hearing loss.

1997-03 NIH, "Binaural Coding in the LSO," $260,000, PI.
The goal of this project was to determine how the auditory system processes information about sound location in space, a major model system for computational neuroscience.

2001-02 Alexander von Humboldt, "Info processing in the mammalian auditory system," $20,000, PI.
The goal of this fellowship was to determine hoe information is processed in the mammalian auditory system.

2008-14 NSF, Neurobiology of the Naked Mole-Rat, $700,000, PI.
The goal of this project is to determine the underlying mechanisms that make the brain of the naked mole-rat extremely tolerant to oxygen deprivation, and the underlying mechanisms that make the pain system of this animal immune to chronic pain.

2010 – present, NSF Major Research Instrumentation Program, MRI, $1,995,000, co-PI. The goal of this project is to utilize this imaging equipment for research in the Park lab as well as a variety of other animal laboratories at UIC.

Narrative of Career Benchmarks:

My first research experience was as an undergrad, working on perceptual learning in birds and gerbils with Stewart Hulse at the Johns Hopkins University. In graduate school at the University of Maryland, I also worked on perceptual learning in Bob Dooling's lab. While there, I became intrigued with sound localization and I designed behavioral tests to measure sound localization ability in song birds. After grad school, I spent a brief post-doc at the Institute for Cellular and Molecular Embryology in Paris, examining inherent perceptual preferences in chickens and quail for species-specific maternal calls. I then spent a 5-year post-doc with George Pollak at the University of Texas pursuing my interest in sound localization on a physiological level. While I was at Texas, I met Gerhard Neuweiler from the University of Munich, who encouraged me to apply for an Alexander von Humboldt Fellowship to work in his lab for a year, which I did. As an assistant professor at UIC, I continued to work on sound localization using electrophysiology and the bat model system. For sabbatical, I worked for a year with Benedikt Grothe at the Max Planck Institute for Neurobiology in Munich, focusing on the role of neuromodulators in shaping sound localization sensitivity. Over the past 15 years at UIC, I shifted my research program to study neurophysiological adaptations in the naked mole-rat.

Service:

1996-2001	University Animal Welfare Committee, Full Committee (Univ)
1996-1997	Sigma Xi Graduate Student Research Forum Committee (Univ)
1997-1999	Undergraduate Studies Committee (Dept)
1998-2008	Electron Microscopy committee (Dept)
1998	Search committee, Molecular Biology (Dept)
2002-present	University Animal Welfare Committee, Teaching Sub-committee (Univ)
2002-present	Honors College Fellow (Univ)
2003-present	University Animal Welfare Committee, Facilities Sub-committee (Univ)
2003-present	Faculty Oversight of Departmental Animal Facility (Dept)
2005	Promotion and tenure committee (Dept)
2007	Search committee, Neurobiology (Dept)
2010-2013	Co-Director, Laboratory of Integrative Neuroscience (Univ)
2010-2013	Neurobiology Coordinator (Dept)
2010-present	Faculty Advisory Committee (Dept)
2013- present	Associate Department Head
2011-2012	Promotion and tenure Committee (Dept)
2012-2013	Search committee, Neurobiology (Dept)
2014-2015	Promotion and tenure committee (Dept)
2015-2016	Promotion and tenure committee (Dept)
2017-2018	Search committee, Neurobiology (Dept)
2017-present	UIC Senate member (Univ)
2018	LAS Executive Committee (College)
2019	Grad student recruitment committee (Dept)
2019	Search committee, staff member (Dept)
2019	Search committee, teachin/research post-doc (Dept)
2019	Search committee, clinical track assistant professor (Dept)
2019	Promotion and tenure committee (Dept)

Other Service:

2008-present	Volunteer as an "Information Specialist" at the Lincoln Park Zoo in Chicago.
2011	Co-organizer, Chicago area high school "Brain Bee"

2018 Guest speaker at Chelsea School in Hyattsville Maryland, a school for students with language-based learning differences and ADD/ADHD

Graduate Students Trained:

1997-99	Michael Holinstat	M.S. program, graduated
1997-03	Michele Halvorsen	Ph.D. program, graduated
1998-03	Nita Das	M.S. program, graduated
1998-01	Asma Khan	M.S. program, graduated
1998-04	Sam Chrish	Ph.D. program, graduated
1999-08	Dalia Samaan	Ph.D. program, graduated
2003-08	Pamela Lavinka	M.S. program, graduated
2005-12	Bethany Brown	Ph.D. program, graduated
2008-12	Pamela Lavinka	Ph.D. program, graduated
2006-14	Greg Blass	Ph.D. program, graduated
2017-19	Catherine Barone	Ph.D. program, graduated
2012-present	Daniel Applegate	Ph.D. program
2013-present	Brigitte Browe	Ph.D. program
2018-present	Vince Amoroso	Ph.D. program
2017-present	Emily Vice	Ph.D. program

Post-docs Trained:

1998-2000	Jeff Oswald
2003-2005	Antje Brand
2010-2012	Andrea Birnbaum

Undergraduate Students Trained:

1997	Asma Khan
1997	Anthony Hopkins (SROP)
1998	Heidy Serrano Rodriguez
1998	David Gooseman
1999	Twinckle Parekh
2000-01	Vishal Kamani,
2000-01	Jordan Stein
2001	Anchal Sud
2003-05	Victoria Landau
2004-05	Jonathan Huang
2005-07	Patrin Suppatkul
2005	Jorge Egal
2005	Jasmine Dowell
2006	Danish Mohammed
2006-07	Abby Peters
2006-07	Kelly Coussee
2006-07	Roman Tulis
2006-07	Saifullah Siddiqui
2006-08	Vince Amoroso
2007-08	Nish Shah
2008-10	Susie Fischer
2008-10	Jason Zero
2008-10	Karolina Grauslyte
2009-10	Diana Maniev

2009-10	Catherine Barone
2009-10	Susan Wiersema
2009-12	David Moy
2010-12	Jinsun Baek
2010-13	Deblina Deb
2011-12	Christine Bagtas
2011-12	Gordon Marsh
2011-13	Vidya Govind-Thomas
2011-14	Sallie Sinfuego
2013-2014	Shikhi Bhansari
2013-2014	Ibtihale Love
2013-2015	Victoria Gavaghan
2014	Yoselin Torres (B2B)
2014	AlLisia Dawkins (B2B)
2014-2015	Catherine Kita
2014-2015	Joshua Bierdz
2014-2015	Mahsa Vahdatian
2015-2016	Zeynep Ikiz
2014-2017	Cesar Ramirez (SROP)
2015-2017	Kiah Erdmann
2016-2017	Emily Vice
2015-2018	Tatiana Giraldo (SROP)
2015-2019	Amy De La Torre
2015-2019	Celeena Remmers
2016-present	Anastasiya Loos
2017-2018	Katy Segoviano (B2B)
2017-present	Moe Kaddoura
2018-2019	Virginia Rodriguez
2018-2019	Adrian Lopez (B2B)
2018-present	Maryam Alqaisi
2018-present	Jessica McAleer
2018-present	Abigail Olsen
2018-present	Iman Benchehida
2018-present	Chioma Ohno (SROP)
2018-present	Samantha Lagestee
2018-present	Yahya Najjar

Colloquia, Symposia, Workshops Organized:

1996 Co-organizer: International Workshop on Binaural Processing in the Superior Olivary Complex, Nye, Montana.

1998 Co-organizer: International Workshop on Binaural Processing in the Superior Olivary Complex, Nye, Montana.

2000 Co-organizer: "Evolution of vertebrate hearing," Symposium for the Association for Research in Otolaryngology meeting, St. Petersburg, Florida.

2002 Co-organizer: "Plasticity in the Auditory System" Gordon Research Conference on Neuroethology: Behavior, Evolution & Neurobiology, Oxford, England.

2010 Organizer: "Sidney Simpson Neuroscience Symposium" Topic: Animal Communication" University of Illinois at Chicago.

2012 Organizer: "Sidney Simpson Neuroscience Symposium" Topic: The Neuroscience of Pain: From Molecules to Minds" University of Illinois at Chicago.

2012 Co-organizer: "No oxygen? No problem! Advances in Understanding Hypoxia Tolerance from a Comparative Perspective. International Society for Neuroethology, College Park, Maryland.

Invited Seminars:

1994 Two-week lecture series on hearing, The Tata Institute for Research, Bombay, India.
1995 Mechanisms that shape neural response properties in the lateral superior olive. Zoological Institute, University of Munich, Germany.
1995 GABA and glycine shape binaural response properties and receptive fields in the inferior colliculus. Max Plank Institute, Seewesen, Germany.
1996 How Does the Auditory CNS Represent Space? Department of Psychology, University of Illinois at Chicago, Illinois.
1996 Acoustic Perception of Space. Illinois Institute of Technology, Chicago, Illinois.
1996 What shapes selectivity to interaural intensity differences in the lateral superior olive? International Workshop on Binaural Processing, Nye, Montana.
1998 A novel circuit in the bat's midbrain recruits neurons into echolocation processing. Department of Physiology, University of Wisconsin.
1998 Transformations along the auditory neuraxis. International Workshop on Binaural Processing, Nye, Montana.
1999 Orientation to touch in the naturally blind naked mole-rat. Gordon Research Conference on Neuroethology: Behavior, Evolution & Neurobiology, Oxford, England.
2000 Central nervous effects on response latency. International Workshop on Binaural Processing, Cody, Wyoming.
2001 Unique neurobiology of the naked mole-rat. Max Planck Institute for Neurobiology, Munich, Germany.
2001 Neural mechanisms of sound localization. University of Munich, Munich, Germany.
2002 Unique neurobiology of the naked mole-rat. Max-Delbrück Center for Molecular Medicine, Berlin, Germany.
2002 Auditory-vocal communication in the naked mole-rat. Gordon Research Conference on Neuroethology: Behavior, Evolution & Neurobiology, Oxford, England.
2002 Unique neurobiology of the naked mole-rat. Department of Psychology, University of Illinois at Chicago.
2003 Metabotropic GABA receptors modulate binaural processing in the lateral superior olive. International Workshop on Binaural Processing, Cody, Wyoming.
2004 No Pain? No Pain! – The Unique Neurobiology of the Naked Mole Rat. Department of Biological Sciences, Indiana University.
2004 No Pain? No Pain! – The Unique Neurobiology of the Naked Mole Rat. Max-Delbrück Center for Molecular Medicine, Berlin, Germany.
2005 Pain Processing in the Naked Mole-Rat: An Animal that Naturally Lacks the Pain Transmitter Substance P. Department of Biological Sciences, University of Missouri, Kansas City.
2005 Pain Processing in the Naked Mole-Rat: An Animal that Naturally Lacks the Pain Transmitter Substance P. Department of Anesthesiology, University Illinois at Chicago, Chicago, Illinois.
2005 Pain Processing in the Naked Mole-Rat: An Animal that Naturally Lacks the Pain Transmitter Substance P. Max Delbruck Institute, Berlin, Germany.
2005 Dynamic Binaural Level Stimuli Invoke Conditioned Enhancement and Suppression in Gerbil LSO. International Workshop on Binaural Processing, Missoula, Montana.
2006 Pain Processing in Naked Mole-Rats: Animals That Naturally Lack the Pain Transmitter Substance P. Riken Brain Science Institute, Tokyo, Japan.
2006 Blind, Naked, and Feeling No Pain: Inflammatory Pain Insensitivity in African Naked Mole-Rats. University of Texas at Austin.

2007 Blind, Naked, and Feeling No Pain: Inflammatory Pain Insensitivity in African Naked Mole-Rats. University of Munich, Munich Germany.
2007 Extreme Resistance to High Levels of CO2 in the African Naked Mole-Rat. Max Delbruck Institute, Berlin, Germany.
2007 Blind, Naked, and Feeling No Pain: Inflammatory Pain Insensitivity in African Naked Mole-Rats. University of Texas Health Science Center, San Antonio Texas.
2008 Body Whiskers to Brain Slices: The Neurobiology of the Naked Mole-Rat. Symposium of Behavioral and Ecological Neurobiology, Biocenter LMU, University of Munich, Germany.
2008 Blind, Naked, and Feeling No Pain: Inflammatory Pain Insensitivity in African Naked Mole-Rats. Wake Forest University, Winstom-Salem, North Carolina.
2008 The Neurobiology of the Naked Mole-Rat: Adaptations to Extreme Environmental Challenges. Max Planck Institute for Ornithology, Seewiesen, Germany.
2008 Blind, Naked, and Feeling No Pain: Neural Adaptations in the Naked Mole-Rat for Surviving in a Chronically Low O2 / High CO2 Environment. University of Connecticut.
2008 Juvenile Brain Features in Adult Naked Mole-Rats. Comparative Biology of Aging Meeting, March 6-8, 2008, Invited, Round Top, Texas.
2009 Blind & Naked, But Oh So Cool: The Subterranean World of the Naked Mole Rat. The American Association of Anatomists. Invited. New Orleans, Louisiana.
2009 The Neurobiology of the Naked Mole-Rat. The American Association for Laboratory Animal Science. Invited. Chicago.
2010 Blind, Naked, and Feeling No Pain: The Unusual Neurobiology of the Naked Mole-Rat. Indiana University.
2010 Blind, Naked, and Feeling No Pain: The Unusual Neurobiology of the Naked Mole-Rat. Washington University, St. Louis.
2010 Naked Mole-Rats: Blind, Naked, and Feeling No Pain. University of Iowa.
2010 Naked Mole-Rats: Blind, Naked, and Feeling No Pain; The Neurobiology of the Naked Mole-Rat. University of Colorado, Denver.
2011 Naked Mole-Rats: Blind, Naked, and Feeling No Pain; The Neurobiology of the Naked Mole-Rat. University of Oklahoma.
2011 Naked Mole-Rats: Blind, Naked, and Feeling No Pain; The Neurobiology of the Naked Mole-Rat. Harvard University Medical School.
2011 The Neurobiology of the Naked Mole-Rat. Max Delbruck Institute, Berlin, Germany.
2012 The Neurobiology of the Naked Mole-Rat. University of Colorado, Denver.
2012 The Neurobiology of the Naked Mole-Rat. Medical College of Wisconsin.
2012 The Neurobiology of the Naked Mole-Rat. Andrews University.
2012 The Neurobiology of the Naked Mole-Rat. Purdue University.
2012 The Neurobiology of the Naked Mole-Rat. Dept of Ophthalmology, Univ of Illinois at Chicago.
2012 The Neurobiology of the Naked Mole-Rat. University at Buffalo.
2013 The Neurobiology of the Naked Mole-Rat. Freie University Berlin.
2013 Naked Mole-Rat and Mechanisms of Hypoxia Survival. American Association for Laboratory Animal Science, Baltimore.
2014 Extreme Anoxia Tolerance Scales with Sociality in African Mole-Rats and Microbats. Max Delbruck Institute, Berlin, Germany.
2015 Blind, Naked, and Feeling No Pain: The Neurobiology of the Naked Mole-Rat. Rush University Medical Center.
2015 The Neurobiology of the Naked Mole-Rat. Johns Hopkins School of Medicine.
2015 Blind, Naked, and Feeling No Pain. Dept. of Biological Sciences, Lehigh University.
2016 Blind, Naked, and Feeling No Pain. Dept. of Neurology and Rehabilitation, UIC.
2016 Extreme Anoxia Tolerance Scales with Sociality in African Mole-Rats, Max Delbruck Institute, Berlin, Germany.

2016 Blind, Naked, and Feeling No Pain. International Congress of Vertebrate Morphology. Bethesda, Maryland.
2017 Blind, Naked, and Feeling No Pain. Dept. of Zoology, University of Pretoria, South Africa.
2017 Genetic basis of pain insensitivity. Max Delbruck Institute, Berlin, Germany.
2017 Fructose-driven glycolysis supports anoxia resistance in the naked mole-rat. From gut to brain - how nutrition influences brain function and health. Bavarian Academy of Sciences, Munich, Germany.
2017 An Organismal Biology Approach to Human Health. 8th The Max Planck Society - Chinese Academy of Sciences (MPG-CAS) Exploratory Round Table Conference (ERTC) on "Organismal Biology - Mechanisms of Natural Behaviors" Shanghai, China.
2018 The Naked Mole-Rat: Blind, Naked, and Feeling No Pain. University of Maryland, March 30.
2018 The Neurobiology of the Naked Mole-Rat. Yale University, September 20.
2018 The Naked Mole-Rat: Blind, Naked, and Feeling No Pain. Florida Atlantic University, October 2.
2018 Keep Austin Weird: Bring on the Naked Mole-Rats. University of Texas, Austin, Nov 19.
2018 The Naked Mole-Rat: Blind, Naked, and Feeling No Pain. University of Chicago, December 12.
2019 Naked Mole-Rats in Biomedical Research. Biomedical Research Awareness Day. University of Illinois at Chicago, April 18.
2019 Naked Mole-Rats: The Up-And-Coming Laboratory Animal Model. Endocrinology/Diabetes and Metabolism, Department of Medicine, University of Illinois at Chicago, May 22.
2019 Naked Mole-Rat: Blind, Naked, and Feeling No Pain. Symposium at the International Behavioral Neuroscience Society meeting, Cairns, Australia, June.
2019 Naked Mole-Rats: Blind, Naked, and Feeling No Pain. Plenary Lecture at the 10th International Congress of Comparative Physiology and Biochemistry (ICCPB), Ottawa, Canada, August 5-9.
2020 Tolerance to Anoxia in Mammals. Keystone Symposia, Hypoxia: Molecules, Mechanisms and Disease, Keystone, Colorado, January 19-23.

Teaching Responsibilities:

Spring 2019 Advanced Mammalian Physiology (BioS 443)
Neuroscience II (NeuS 485)
Fall 2018 Methods in Modern Neuroscience (Neus 582)
The Basics of Neuroscience (BioS 184)
Animal Behavior and Neuroethology (BioS 486)

Other Courses Previously Taught:
Biology of the Brain
Nerve & Muscle Physiology
Cellular Neurobiology Laboratory
Neuroscience I

Administrative Experience:

2013-Present Associate Department Head
2010-2013 Co-Director, Laboratory of Integrative Neuroscience, UIC (this university unit oversees the undergraduate major in Neuroscience).
2010-2013 Neurobiology Group Coordinator, Dept. of Biological Sciences, UIC.

Additional Comments:

I place a high premium on collaboration. Some of the most exciting and creative experiences of my career have come from collaborations, not to mention valuable friendships. I have longtime collaborations with the Grothe lab in Munich, the Lewin lab in Berlin, and the Buffenstein lab in California. I also have current collaborations with labs in Toronto, Austria, Netherlands, Boston, California, and South Africa. I have also enjoyed many rewarding collaborations within my own department and university. For example, Joel Brown (an ecologist in my department) and I are working on a project involving cancer.