

# Curriculum Vitae

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## Personal

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Date of Birth: March 30, 1961

Place of Birth: Wilkes-Barre, Pennsylvania USA

## Education

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- 1983**            **B.S.**  
Speech Pathology, High Honors  
Pennsylvania State University, University Park, PA
- 1984 – 1989**    **Ph.D.**  
Psychology (Neuroscience), Thesis Adviser: Dr. Jon H. Kaas  
Vanderbilt University, Nashville, TN

## Professional Appointments and Experience

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- 1989 – 1990**    **Postdoctoral Fellow** with Dr. Jon H Kaas  
Vanderbilt University, Nashville, TN, USA
- 1990 - 1992**    **ARC Research Associate.** Postdoctoral advisor: Dr. Mike Calford.  
Vision, Touch and Hearing Research Centre, Department of Physiology and  
Pharmacology  
University of Queensland, Brisbane, Australia
- 1993 – 1995**    **ARC Research Fellow**  
Vision, Touch, and Hearing Research Centre, Department of Physiology and  
Pharmacology  
University of Queensland, Brisbane, Australia
- 1995 – 1998**    **Assistant Professor**  
Department of Psychology, and Center for Neuroscience  
UC Davis, Davis, CA, USA
- 1999 – 2001**    **Associate Professor**  
Department of Psychology, and Center for Neuroscience  
UC Davis, Davis, CA, USA
- 2001 – 2020**    **Professor**  
Department of Psychology, and Center for Neuroscience  
UC Davis, Davis, CA, USA
- 2020 – present** **Distinguished professor**  
Department of Psychology, and Center for Neuroscience  
UC Davis, Davis, CA USA

## Honors and Awards

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1987	Kreig Cortical Scholar Award, Cajal Club
1996	Herrick Award, American Association of Anatomists
1998	<b>MacArthur Award, MacArthur Foundation</b>
1999	Special Lecture for the Society for Neuroscience meeting
2002	The James McKeen Cattell Sabbatical Fellowship
2002	Bloedel Visiting Scientist Fellowship, University of Washington
2007	Center for Academic Research and Training in Anthropogeny (inducted member)
2011	Distinguished Alumni Award, Vanderbilt University
2012	Dean's Innovation Award, Division of Social Sciences, University of California, Davis
2014	International Neuropsychological Society (inducted member)
2019	Cajal Club, executive board
2019	Visiting Scholar; IMT School for Advanced Studies, Lucca Italy
2021	Talairach Lecture, Human Brain Mapping
2021	38 <sup>th</sup> Mildred Trotter Lecture, Dept. of Neuroscience, Washington University
2022	The James Arthur Lecture: The American Museum of Natural History, New York
2022	JCN/Wiley Sanford L. Palay Award in Structural Neuroscience
2022	President of Cajal Club

## Current Grant Support

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02/01/2021	R01NS115881(NINDS) The impact of the environment on sensorimotor cortex in
01/31/2026	rats: Functional organization, connections and behavior
08/01/2022	R01EY034303-01 (NEI) Cross modal plasticity following loss of vision at different
06/30/2026	developmental stages: Cortical function, connections and Compensatory behavior

## PUBLICATIONS

### Research Papers

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1. Krubitzer LA, Sesma MA, and Kaas JH (1986) Microelectrode maps, myeloarchitecture, and cortical connections of three somatotopically organized representations of the body surface in the parietal cortex of squirrels. J Comp Neurol. 250:403-430. PMID: 3760247
2. Huerta MF, Krubitzer LA, and Kaas JH (1986) Frontal eye field as defined by intracortical microstimulation in squirrel monkeys, owl monkeys, and macaque monkeys: I. subcortical connections. J Comp Neurol. 253:415-439. PMID: 3793998
3. Huerta MF, Krubitzer LA, and Kaas JH (1987) Frontal eye fields as defined by intracortical microstimulation in squirrel monkeys, owl monkeys, and macaque monkeys II: Cortical connections. J Comp Neurol. 265:332-361. PMID: 2447132
4. Krubitzer LA and Kaas JH (1987) Thalamic connections of three representations of the body surface in somatosensory cortex of grey squirrels. J Comp Neurol. 265:549-580. PMID: 2448348

5. Luethke LE, Krubitzer LA, and Kaas JH (1988) Cortical connections of electrophysiologically and architectonically defined subdivisions of auditory cortex in squirrels. J Comp Neurol. 268:181-203. PMID: 3360984
6. Krubitzer LA and Kaas JH (1988) Responsiveness and somatotopic organization of anterior parietal field 3b and adjacent cortex in newborn and infant monkeys. Somatosens Mot Res. 6:179-205. PMID: 3242345
7. Krubitzer LA and Kaas JH (1989) Cortical integration of parallel pathways in the visual system of primates. Brain Res. 478:161-165. PMID: 2466529
8. Kaas JH, Krubitzer LA, and Johanson KL (1989) Cortical connections of areas 17 (V-I) and 18 (V-II) of squirrels. J Comp Neurol. 281:426-446. PMID: 2703555
9. Luethke LE, Krubitzer LA, and Kaas JH (1989) Connections of primary auditory cortex in the New World monkey, *Saguinus*. J Comp Neurol. 285:487-513. PMID: 2474584
10. Kaas JH, Krubitzer LA, Chino YM, Langston AL, Polley EH, and Blair N (1990) Reorganization of retinotopic cortical maps in adult mammals after lesions of the retina. Science. 248:229-231. PMID: 2326637
11. Krubitzer LA and Kaas JH (1990) The organization and connections of somatosensory cortex in marmosets. J Neurosci. 10:952-974. PMID: 2108231
12. Krubitzer LA and Kaas JH (1990) Cortical connections of MT in four species of primates: areal, modular, and retinotopic patterns. Vis Neurosci. 5:165-204. PMID: 2278944
13. Krubitzer L and Kaas J (1990) Convergence of processing channels in the extrastriate cortex of monkeys. Vis Neurosci. 5:609-613. PMID: 1707652
14. Krubitzer LA and Calford MB (1992) Five topographically organized fields in the somatosensory cortex of the flying fox: microelectrode maps, myeloarchitecture, and cortical modules. J Comp Neurol. 317:1-30. PMID: 1573055
15. Krubitzer LA and Kaas JH (1992) The somatosensory thalamus of monkeys: Cortical connections and a redefinition of nuclei in marmosets. J Comp Neurol. 319:123-140. PMID: 1375605
16. Kaas JH and Krubitzer LA (1992) Area 17 lesions deactivate area MT in owl monkeys. Vis Neurosci. 9:399-407. PMID: 1390397
17. Krubitzer LA, Calford MB, and Schmid LM (1993) Connections of somatosensory cortex in megachiropteran bats: The evolution of cortical fields in mammals. J Comp Neurol. 327:473-506. PMID: 8440777
18. Krubitzer LA and Kaas JH (1993) The dorsomedial visual area (DM) of owl monkeys: Connections, myeloarchitecture, and homologies with other primates. J Comp Neurol. 334:497-528. PMID: 8408763
19. Rosa MGP, Schmid LM, Krubitzer LA, and Pettigrew JD (1993) Retinotopic organization of the primary visual cortex of flying foxes (*Pteropus poliocephalus* and *Pteropus scapulatus*). J Comp Neurol. 335:55-72. PMID: 8408773

20. Krubitzer L, Manger P, Pettigrew JD, and Calford MB. (1995) The organization of neocortex in monotremes: In search of the prototypical plan. J Comp Neurol. 351:261-306. PMID: 7699113
21. Krubitzer L, Clarey J, Tweedale R, Elston G, and Calford M (1995) A redefinition of somatosensory areas in the lateral sulcus of macaque monkeys. J Neurosci. 15:3821-3839. PMID: 7751949
22. Krubitzer LA, Kunzle H, and Kaas JH (1997) The organization of sensory cortex in a Madagascan insectivore, the tenrec (*Echinops telfairi*). J Comp Neurol. 379:399-414. PMID: 9067832
23. Manger P, Sum M, Szymanski M, Ridgway SH, and Krubitzer L (1998) Modular subdivisions of dolphin anterior insular cortex: Does evolutionary history repeat itself? J Cogn Neurosci. 10:153-166. PMID: 9555104
24. Krubitzer L, Clarey JC, Tweedale R, and Calford MB (1998) Interhemispheric connections of somatosensory cortex in the flying fox. J Comp Neurol. 402:538-559. PMID: 9862325
25. Huffman KJ, Nelson J, Clarey J, and Krubitzer L (1999) Neocortical organization in four species of marsupials: Neural correlates of morphological specialization. J Comp Neurol. 403:5-32. PMID: 10075440
26. Rosa MGP, Krubitzer LA, Molnar Z, and Nelson JE (1999) Organization of visual cortex in the northern quoll, *Dasyurus hallucatus*: Evidence for a homologue of the second visual area in marsupials. Eur J Neurosci. 11:907-915. PMID: 10103084
27. Disbrow E, Roberts T, Slutsky D, and Krubitzer L (1999) The use of fMRI for determining the topographic organization of cortical fields in human and nonhuman primates. Brain Res. 829:167-173. PMID: 10350543
28. Huffman KJ, Molnár Z, Van Dellen A, Kahn D, Blakemore C, and Krubitzer L (1999) Formation of cortical fields on a reduced cortical sheet. J Neurosci. 19:9939-9952. PMID: 10559402
29. Disbrow E, Krubitzer L, and Roberts T (2000) The somatotopic organization of the lateral sulcus areas in Homo Sapiens: Evidence for SII and PV. J Comp Neurol. 418:1-21. PMID: 10701752
30. Slutsky DA, Manger PR, and Krubitzer L (2000) Multiple somatosensory areas in the anterior parietal cortex of the California ground squirrel (*Spermophilus beecheyii*). J Comp Neurol. 416:521-539. PMID: 10660882
31. Disbrow EA, Slutsky DA, Roberts TP, and Krubitzer LA (2000) Functional MRI at 1.5 tesla: A comparison of the blood oxygenation level dependent signal and electrophysiology. Proc Natl Acad Sci U S A. 97:9718-9723. PMCID: PMC16931
32. Kahn DM, Huffman KJ, and Krubitzer L (2000) Organization and connections of V1 in *Monodelphis domestica*. J Comp Neurol. 428:337-354. PMID: 11064371
33. Disbrow E, Roberts T, Poeppel D, and Krubitzer L (2001) Evidence for interhemispheric processing of inputs from the hands in the human second somatosensory and parietal ventral areas. J Neurophysiol. 85:2236-2244. PMID: 11353038
34. Huffman KJ and Krubitzer L (2001) Thalamo-cortical connections of areas 3a and M1 in marmoset

- monkeys. J Comp Neurol. 435:291-310. PMID: 11406813
35. Huffman KJ and Krubitzer L (2001) Area 3a: Topographic organization and connections in marmoset monkeys. Cereb Cortex. 11:849-867. PMID: 11532890
  36. Kahn DM and Krubitzer L (2002) Retinofugal projections in the short-tailed opossum (*Monodelphis domestica*). J Comp Neurol. 447:114-127. PMID: 11977115
  37. Disbrow E, Litinas E, Recanzone GH, Slutsky D, and Krubitzer LA (2002) Thalamocortical connections of the parietal ventral area (PV) and the second somatosensory area (S2) in macaque monkeys. Thalamus Relat Syst. 1:289-302
  38. Kahn DM and Krubitzer L (2002) Massive cross-modal cortical plasticity and the emergence of a new cortical field in developmentally blind mammals. Proc Natl Acad Sci U S A. 99:11429-11434. PMCID: PMC123273
  39. Disbrow E, Litinas E, Recanzone GH, Padberg J, and Krubitzer L (2003) Cortical connections of the parietal ventral area and the second somatosensory area in macaque monkeys. J Comp Neurol. 462:382-399. PMID: 12811808
  40. Krubitzer L, Huffman KJ, Disbrow E, and Recanzone G (2004) The organization of area 3a in macaque monkeys. J Comp Neurol. 471:97-111. PMID: 14983479
  41. Padberg J, Disbrow E, and Krubitzer L (2005) The organization and connections of anterior and posterior parietal cortex in titi monkeys: Do New World monkeys have an area 2? Cereb Cortex. 15:1938-1963. PMID: 15758196
  42. Hunt DL, King B, Kahn DM, Yamoah EN, Shull GE, and Krubitzer L (2005) Aberrant retinal projections in congenitally deaf mice: How are phenotypic characteristics specified in development and evolution. Anat Rec A Discov Mol Cell Evol Biol. 287:1051-1066. PMID: 16200647
  43. Hunt DL, Yamoah EN, and Krubitzer L (2006) Multisensory plasticity in congenitally deaf mice: How are cortical areas functionally specified? Neuroscience. 139:1507-1524. PMID: 16529873
  44. Padberg J and Krubitzer L (2006) Thalamocortical connections of anterior and posterior parietal cortical areas in New World titi monkeys. J Comp Neurol. 497:416-435. PMID: 16736469
  45. Karlen SJ, Kahn DM, and Krubitzer L (2006) Early blindness results in abnormal corticocortical and thalamocortical connections. Neuroscience. 142:843-858. PMID: 16934941
  46. Karlen SJ and Krubitzer L (2006) Phenotypic variability is the cornerstone of evolution: Variability in cortical field size within a species. J Comp Neurol. 499:990-999. PMID: 17072834
  47. Hinkley L, Krubitzer L, Nagarajan SS, and Disbrow EA (2007) Integration of tactile and motor inputs in the second somatosensory and parietal rostral ventral areas of the human Sylvian fissure. J Neurophysiol. 97:1288-1297. PMCID: PMC4060608
  48. Campi KL, Karlen SJ, Bales KL, and Krubitzer L (2007) Organization of sensory neocortex in prairie voles (*Microtus ochrogaster*). J Comp Neurol. 502:414-426. PMID: 17366609
  49. Padberg J, Franc JG, Cooke DF, Soares JG, Rosa MG, Fiorani M Jr, Gattass R, Krubitzer L (2007)

Parallel evolution of cortical areas involved in skilled hand use. J Neurosci. 27:10106-10115. PMID: 17881517

50. Karlen SJ and Krubitzer L (2009) Effects of bilateral enucleation on the size of visual and non-visual areas of the brain. Cereb Cortex 19:1360-1371. PMID: PMC2677651
51. Zhu Z, Zumer JM, Lowenthal ME, Padberg J, Recanzone GH, Krubitzer LA, Nagarajan SS, and Disbrow EA (2009) The relationship between magnetic and electrophysiological signals responses to complex tactile stimuli. BMC Neurosci. 10:4. PMID: PMC2652466
52. Padberg J, Cerkevich C, Engle J, Rajan AT, Recanzone G, Kaas J, and Krubitzer L (2009) Thalamocortical connections of parietal somatosensory cortical fields in macaque monkeys are highly divergent and convergent. Cereb Cortex 19:2038-2064. PMID: PMC2722424
53. Hinkley LB, Krubitzer LA, Padberg J, and Disbrow EA (2009) Visual-manual exploration and posterior parietal cortex in humans. J Neurophysiol 102:3433-3446. PMID: PMC2804435
54. Larsen DD, Luu JD, Burns ME, and Krubitzer L (2009) What are the effects of severe visual impairment on the cortical organization and connectivity of primary visual cortex? Front Neuroanat. 3:30. PMID: PMC2802552
55. Campi KL, Bales KL, Grunewald R, and Krubitzer, L (2010) Connections of Auditory Cortex in the Prairie Vole (*Microtus ochrogaster*): Evidence for multisensory processing in primary sensory areas. Cereb Cortex 20:89-108. PMID: PMC2792189
56. Cheung AF, Kondo S, Abdel-Mannan O, Chodroff RA, Sirey TM, Bluy LE, Webber N, Karlen SJ, Krubitzer L, Stolp HB, Saunders NR, and Molnár Z (2010) The subventricular zone is the developmental milestone of a 6-layered neocortex: Comparisons in metatherian and eutherian mammals. Cereb Cortex 20:1071-1081. PMID: 19726493
57. Zumer JM, Nagarajan SS, Krubitzer LA, Zhu Z, Turner RS, and Disbrow EA (2010) MEG in the macaque monkey and human: distinguishing cortical fields in space and time. Brain Res. 1345:110-124. PMID: PMC2899153
58. Campi KL and Krubitzer L (2010) Comparative studies of diurnal and nocturnal rodents: differences in lifestyle result in alterations in cortical field size and number. J Comp Neurol. 518:4491-4512. PMID: PMC3432265
59. Padberg J, Recanzone G, Engle J, Cooke D, Goldring A, and Krubitzer, L (2010) Lesions in posterior parietal area 5 result in rapid behavioral and cortical plasticity. J Neurosci. 30:12918-12935. PMID: PMC3432266
60. Evans KD, Hewett TA, Clayton CJ, Krubitzer LA, and Griffey SM. (2010) Normal Organ Weights, Serum Chemistry, Hematology, and Cecal and Nasopharyngeal Bacterial Cultures in the Gray Short-Tailed Opossum (*Monodelphis domestica*). J Am Assoc Lab Anim Sci. 49:401-6. PMID: PMC2919177
61. Wang WZ, Oeschger FM, Montiel JF, García-Moreno F, Hoerder-Suabedissen A, Krubitzer L, Ek CJ, Saunders NR, Reim K, Villalón A, and Molnár Z (2011) Comparative aspects of subplate zone studied with gene expression in sauropsids and mammals. Cereb Cortex. 21:2187-2203. PMID: 21368089

62. Campi KL, Collins CE, Todd WD, Kaas J, and Krubitzer L (2011) Comparison of Area 17 cellular composition in laboratory and wild-caught rats including diurnal and nocturnal species. Brain, Behav Evol. 77:116-130. PMID: PMC3094678
63. Cooke DF, Padberg J, Zahner T, and Krubitzer L (2012) The functional organization and cortical connections of motor cortex in squirrels. Cereb Cortex. 22:1959-1978. PMID: PMC3412438
64. Seelke AM, Padberg JJ, Disbrow E, Purnell SM, Recanzone G, and Krubitzer L (2012) Topographic maps within Brodmann's area 5 of macaque monkeys. Cereb Cortex 22:1834-1850. PMID: PMC3388892
65. Cooke DF, Goldring AB, Yamayoshi I, Tsourkas P, Recanzone GH, Tiriack A, Pan T, Simon SI, and Krubitzer L (2012) Fabrication of an inexpensive, implantable cooling device for reversible brain deactivation in animals ranging from rodents to primates. J Neurophysiol. 107:3543-3548. PMID: PMC3378414
66. Seelke AM, Dooley JC, and Krubitzer LA (2012) The emergence of somatotopic maps of the body in S1 in rats: the correspondence between functional and anatomical representation. PLoS One. 7(2): e32322. PMID: PMC3290658
67. Dooley JC, Nguyen HM, Seelke AM, and Krubitzer L (2012) Visual acuity in the short-tailed opossum (*Monodelphis domestica*). Neuroscience. 223:124-130. PMID: PMC3708803
68. Seelke AM, Dooley JC, and Krubitzer LA (2013) Differential changes in the cellular composition of the developing marsupial brain. J Comp Neurol. 521:2602-2620. PMID: PMC3934569
69. Dooley JC, Franca JG, Seelke AMH, Cooke DF, Krubitzer LA (2013) A connection to the past: *Monodelphis domestica* provides insight into the organization and connectivity of the brains of early mammals. J Comp Neurol. 521:3877-3897. PMID: PMC3959876
70. Seelke AM, Dooley JC, and Krubitzer L (2014) The cellular composition of the marsupial neocortex. J Comp Neurol. 522:2286-2298. PMID: PMC4090354
71. Seelke AMH, Dooley JC, and Krubitzer LA (2014) Phototaxing preferences of the short-tailed opossum (*Monodelphis domestica*). Neuroscience. 269:273-280. PMID: PMC4020983
72. Cooke DF, Goldring AB, Baldwin MKL, Recanzone GH, Chen A, Pan T, Simon SI, and Krubitzer L (2014) Reversible deactivation of higher order posterior parietal areas I: Alternations of receptive field characteristics in early stages of neocortical processing. J Neurophysiol. 112:2545-2560. PMID: PMC4233270
73. Goldring AB, Cooke DF, Baldwin MKL, Recanzone GH, Gordon AG, Pan T, Simon SI, and Krubitzer L (2014) Reversible deactivation of higher order posterior parietal areas II: Alterations in response properties of neurons in areas 1 and 2. J Neurophysiol. 112: 2545-2560. PMID: PMC4233279.
74. Dooley, J. C., Franca, J. G., Seelke, A. M., Cooke, D. F., & Krubitzer, L. A. (2015). Evolution of mammalian sensorimotor cortex: thalamic projections to parietal cortical areas in *Monodelphis domestica*. Front Neuroanat. 8, 163. PMID: PMC4286717

75. Cooke DF, Stepniewska I, Miller DJ, Kaas JH, Krubitzer L (2015) Reversible deactivation of motor cortex reveals functional connectivity with posterior parietal cortex in prosimian galago (*Otolemur garnetti*). J Neurosci 35:14406 -14422. PMID: 26512481
76. Chong SP, Merkle CW, Cooke DF, Zhang T, Radhakrishnan H, Krubitzer L, and Srinivasan VJ (2015) Non-invasive, in vivo imaging of subcortical mouse brain regions with 1.7  $\mu$ m Optical Coherence Tomography. Opt Lett. 40:4911-4914. PMID: 26512481
77. Seelke AM, Perkeybile A, Bales K, Krubitzer L (2016) Individual differences in cortical connections of somatosensory cortex are associated with parental rearing style in prairie voles (*Microtus ochrogaster*). J Comp Neurol. 524: 567-577. PMID: 26101098
78. Ramamurthy DL, Krubitzer L (2016) Receptive fields and response characteristics of neurons in the S1 whisker representation of the short-tailed opossum, *Monodelphis domestica*. J Comp Neurol 524: 3587-3613. PMID: 27098555
79. Seelke AMH, Yuan, S-M, Perkeybile AM, Krubitzer L, Bales KL (2016) Early experiences can alter the size of cortical fields in prairie voles (*Microtus ochrogaster*). Environmental Epigenetics. Aug;2(3). pii: dvw019. PMID:27818789
80. Dooley, JC, Donaldson M and Krubitzer L (2017) Cortical plasticity following stripe rearing in the marsupial *Monodelphis domestica*: Neural response properties of V1. J Neurophysiol. 117:5666-581. PMID: 27852732
81. Baldwin MKL, Cooke DF and Krubitzer L (2017) Intracortical microstimulation maps of motor, somatosensory and posterior parietal cortex in tree shrews (*Tupaia belangeri*) reveal complex movement representations. Cerebral Cortex. 27(2): 1439-1456. PMID: 26759478.
82. Baldwin MKL, Cooke DF, Goldring AB, Krubitzer L (2018) Representations of Fine Digit Movements in Posterior and Anterior Parietal Cortex Revealed Using Long-Train Intracortical Microstimulation in Macaque Monkeys. Cereb Cortex 28:4244-4263. PMID: 29136133
83. Baldwin, MKL and Krubitzer L (2018) Architectonic characteristics of the visual thalamus and superior colliculus in titi monkeys. J Comp Neurol. 526(11): 1760-1776. PMID: 29658111.
84. Ramamurthy DL, Krubitzer LA (2018). Neural coding of whisker-mediated touch in primary somatosensory cortex is altered following early blindness. J Neurosci. 38:6172-6189. PMID: 29807911
85. Lutz ND, Lemes E, Krubitzer L, Collin SP, Haverkamp S, Peichl L (2018) The rod signaling pathway in marsupial retinae. PLOS One. 13(8). PMID: 30157204
86. Padberg J, Cooke DF, Cerkevich CM, Kaas JH, Krubitzer L (2019) Cortical connections of area 2 and posterior parietal area 5 in macaque monkeys. J Comp Neurol. 527(3):718-737. PMID: 29663384
87. Dooley JC and Krubitzer L (2019) Alterations in cortical and thalamic connection of somatosensory cortex following early loss of vision. J. Comp Neurol. 527:1675-1688. PMID: 30444542
88. Mayer A, Baldwin MKL, Cooke DF, Lima BR, Padberg J, Lewenfus G, Franca JG, Krubitzer L (2019) The multiple representations of complex digit movements in primary motor cortex form the



- building blocks for complex grip types in capuchin monkeys. J Neurosci. 39:6684-6695. PMID: 33083758
89. Wilson SP, James SS, Whiteley DJ and Krubitzer LA (2019) Limit cycle dynamics can guide the evolution of gene regulatory networks towards point attractors. Sci Rep 9 (1):16750. PMID: 31727996
90. Bottom RT, Krubitzer LA, Huffman KJ (2020) Early postnatal gene expression in the developing neocortex of prairie voles (*Microtus ochrogaster*) is related to parental rearing style. J Comp Neurol. 528:3008-3022. PMID: 31930725
91. Halley AC, Baldwin MKL, Cooke DF, Englund M, Krubitzer L. (2020) Distributed motor control of limb movements in rat motor and somatosensory cortex: The sensorimotor amalgam revisited. Cereb Cortex. 30:6296-6312. PMID: 32691053
92. Englund M, Faridjoo S, Iyer C, Krubitzer L (2020) Available Sensory Input Determines Motor Performance and Strategy in Early Blind and Sighted Short-Tailed Opossums. iScience 2(9): 101527. PMID: 33083758
93. James SS, Krubitzer LA, Wilson SP (2020) Modelling the emergence of whisker barrels. eLife September 29; 9:e55588. doi: 10.7554/eLife.55588. PMID: 32988453
94. Ramamurthy DL, Dodson HK, Krubitzer LA (2021) Developmental plasticity of texture discrimination following early vision loss in the marsupial *Monodelphis domestica*. J Exp Biol. 224(9): jeb236646.
95. Englund M, Faridjoo S, Iyer CS, Krubitzer L (2021). Kinematic analysis of sensorimotor behavior during variable ladder rung walking in short-tailed opossums (*Monodelphis domestica*). STAR Protocols 2, 100421. PMID: 33870226
96. Goldring AB, Cooke DF, Pineda C, Recanzone GH, Krubitzer LA (2022). Functional characterization of the fronto-parietal reaching and grasping network: Reversible deactivation of M1, areas 2,5 and 7b in awake behaving monkeys. J Neurophysiol. 157:1363-1387.
97. Halley AC, Baldwin MKL, Cooke D, Englund M, Hafezi M, Hystad J, Pineda C, Schmidt T, Yartsev, M, Krubitzer L. (2022). Coevolution of motor cortex and behavioral specialization associated with flight and echolocation in bats. Current Biology 32: 2935-2941.
98. James SS, Englund M, Bottom R, Huffman KJ, Wilson SP, Krubitzer L (2022) Comparing cortex-wide gene expression patterns between two rodent species in a common reference frame. PNAS Oct 11;119(41):e2113896119.
99. Bresee C, Cooke DF, Goldring AB, Baldwin MKL, Pineda C Krubitzer L (2024) Reversible deactivation of motor cortex reveals that anterior and posterior parietal cortex are differentially dependent on motor cortex for the generation of movement in macaque monkeys. Journal of Neurophysiology. 131:106-123.
100. Bresee C, Litman-Kleper JL, Clayton CJ, Krubitzer L (2024) Translating the timing of developmental benchmarks in short-tailed opossums (*Monodelphis domestica*) to facilitate generalization of experimental finding in rodents. Brain, Behavior and Evolution (2024) 99: 69-85. PMID: 38527443

101. Halley AC, Stepniewska I, Wang Q, Reed JL, Qi H, Kaas JH, Krubitzer LK (2024) The evolution of primate motor control: Movement representations in motor, somatosensory, and posterior parietal cortex in the greater galago. *Cerebral Cortex*. *Under revision*.
102. Pineda CR, Bresee C, Baldwin MKL, Seelke A, Krubitzer L (2024) Organization of the perioral representation of the primary somatosensory cortex in prairie voles (*Microtus ochrogaster*) *submitted*

## Journal Reviews

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1. Krubitzer, L (1995) The organization of neocortex in mammals: Are species differences really so different? *Trends Neurosci.* 18:408-417. PMID: 7482807
2. Krubitzer, L (1998) What can monotremes tell us about brain evolution? *Philos Trans R Soc Lond B Biol Sci.* 353:1127-1146. PMCID: PMC1692304
3. Rosa, MG and Krubitzer, LA (1999) The evolution of visual cortex: Where is V2? *Trends Neurosci.* 22: 242-247. PMID: 10354599
4. Krubitzer, L and Huffman KJ. (2000) Arealization in the neocortex of mammals: Genetic and epigenetic contributions to the phenotype. *Brain Behav Evol.* 55:322-335. PMID: 10971017
5. Krubitzer, L and Kahn, D (2003) Nature versus nurture revisited: An old idea with a new twist. *Prog in Neurobiol.* 70:33-52. PMID: 12927333
6. Krubitzer, L and Kaas, JH (2005) The evolution of the neocortex in mammals: How is phenotypic diversity generated? *Curr Opin Neurobiol.* 15:444-453. PMID: 16026978
7. Karlen, SJ and Krubitzer, L (2007) The functional and anatomical organization of marsupial neocortex; evidence for parallel evolution in mammals. *Prog Neurobiol.* 82:122-141. PMCID: PMC1978492
8. Krubitzer L (2007) The magnificent compromise: Cortical field evolution in mammals. *Neuron.* 56:201-208. PMID: 17964240
9. Larsen DD and Krubitzer L (2008) Genetic and epigenetic contributions to the cortical phenotype in mammals. *Brain Res Bull.* 75:391-397. PMCID: PMC2607039
10. Krubitzer L (2009) In search of a unifying theory of complex brain evolution. *The Year In Cognitive Neuroscience.* *Ann N Y Acad Sci.* 1156: 44-67. PMCID: PMC2666944
11. Krubitzer L, Campi KL, Cooke DF (2011) All rodents are not the same: A modern synthesis of cortical organization. *Brain Behav and Evol.* 78:51-93. PMCID: PMC3182045
12. Krubitzer LA, and Seelke AMH (2012) Cortical evolution in mammals: The bane and beauty of phenotypic variability. *Proc Natl Acad Sci U S A.* 109:10647-10654. PMCID: PMC3386882

13. Hedges JH, Adolph KE, Bavelier D, Fiez JA, Krubitzer L, McAuley JD, Newcombe NS, Fitzpatrick SM, Ghajar J (2013) Play, attention and learning: How do play and timing shape the development of attention and influence classroom learning? Ann NY Acad Sci. 1292:1-20. PMID: PMC3842829
14. Krubitzer L and Dooley JC (2013) Cortical plasticity within and across lifetimes: How can development inform us about phenotypic transformation? Front Hum Neurosci. 7:620. PMID: PMC3793242
15. Krubitzer L and Stolzenberg DS (2014) The evolutionary masquerade: Genetic and epigenetic contributions to the neocortex. Curr Opin Neurobiol. 24C:157-165 PMID: 24492091
16. Krubitzer L and Prescott T (2018) The combinatorial creature: Cortical phenotypes within and across lifetimes. Trends in Neurosci. 41(10):744-762. PMID: 30274608
17. Halley, A.C. & Krubitzer, L. (2019) Not all cortical expansions are the same: the coevolution of the neocortex and the dorsal thalamus in mammals. Current Opinion in Neurobiology 56: 78-86. PMID: 30658218
18. Wirthin M, Change EF, Knornschild M, Krubitzer LA, Melo DV, Miller CT, Pfenning AR, Vernes SC, Tchernichovski O, Yartsev M (2019) A modular approach to vocal learning: Disentangling the diversity of a complex behavioral trait. Neuron 104:87-99. PMID: 31600518
19. O'Connor D, Krubitzer L, Bensmaia SJ (2021) Of mice and monkeys: Somatosensory processing in two prominent animal models. Prog Neurobiol. 201: 102008. PMID: 33587956
20. Englund M, Krubitzer L (2022) Phenotypic alteration in cortical organization and connectivity across different time scales. Brain Beh Evol 97:108-120. PMID: 35114672.

## **Book Chapters**

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1. Kaas, J.H. and L.A. Krubitzer (1991) The organization of extrastriate visual cortex. (B. Dreher and S.R. Robinson, eds.), In: Neuroanatomy of the Visual Pathways and Their Development (Vision and Visual Dysfunction, Volume 3). Macmillan Press, London, pp 302-323.
2. Krubitzer, L., R. Belew, C. Boake, E. Boncinelli, E. Brenowitz, S. de Belle, J. Edwards, W.P.M. Geraerts. B. Kyriacou, G. Miklos, F. von Schilcher (1994) How Do Evolution and Behavior Interact? In: Dahlem Workshop on Flexibility and Constraint in Behavioral Systems. John Wey and Sons, Chichester, pp. 295-305.
3. Krubitzer, L.A. (1996) The Organization of Lateral Somatosensory Areas In Primates and Other Mammals. In: Somesthesia and the Neurobiology of the Somatosensory Cortex, International Symposium Series, (O. Franzen, R. Johanson, and L. Terenius, eds.) Boston, Birkhaeuser. pp.173-185.
4. Krubitzer, L.A. (1998) Constructing the neocortex: Influences on the pattern of organization in mammals. In: Brain and Mind: Evolutionary Perspectives. (M. S. Gazzaniga and J. Altman, eds.) Human Frontier Science Program. Strasbourg, pp. 19-34.
5. Krubitzer, L.A. (2000) How does evolution build a complex brain? In: Evolutionary Developmental Biology of the Cerebral Cortex (G.R. Bock, G. Cardew, ed.) John Wiley and Sons, LTD. Chichester,

pp. 206-220. PMID: 10929324

6. Krubitzer, L.A. (2002) Evolutionary Perspectives in: Cognitive Neuroscience (M. Gazzaniga, R. Ivry, and R. Mangun eds.) W. W. Norton and Company, pp. 577-596.
7. Krubitzer, L. and Kahn, D (2004) The evolution of human neocortex: Is the human brain fundamentally different than that of other mammals? In: Functional Neuroimaging of Visual Cognition (Attention and Performance Series 20). (N. Kanwisher, J. Duncan, C. eds.) Oxford University Press, Oxford, pp. 57-82.
8. Karlen, S. J. and Krubitzer, L. (2006) The evolution of the neocortex in mammals: intrinsic and extrinsic contributions to the cortical phenotype. In: Percept, Decision, Action: Bridging the Gaps (D. J. Chadwick, M. diamond and J. Goode eds). Novartis Foundation Symposium. John Wiley and Sons Ltd, Chichester, UK, pp 146-163. PMID: 16649713
9. Krubitzer, L. and Hunt, D. (2006). Captured in the net of space and time: Understanding cortical field evolution. In: The Evolution of Nervous Systems, Volume IV (Kaas, J.H. and Krubitzer L., eds). Academic Press, Oxford, pp. 49-72.
10. Disbrow, E., Hinkley, L., Padberg, J., and Krubitzer, L. (2006). Hand use and the evolution of posterior parietal cortex in primates. In: The Evolution of Nervous systems in Primates, Volume IV (Kaas, J.H. and Preuss, T. eds.). Academic Press, Oxford, pp. 407-416.
11. Krubitzer, L., and Disbrow, E. (2008) The evolution of parietal areas involved in hand use in primates. In: The Senses: A Comprehensive Reference. Volume 6, Somatosensation (Jon Kaas and Ester Gardner eds.) Elsevier, London, pp. 183-214.
12. Karlen, S. J. and Krubitzer, L. (2009) The organization of neocortex in marsupials In: Encyclopedia of Neuroscience. In Squire LR (ed) Encyclopedia of Neuroscience. Oxford: Academic Press. Volume 5, pp. 671-679.
13. Krubitzer, L., and Campi, K (2009). The organization of neocortex in monotremes. In: Encyclopedia of Neuroscience. In Squire LR (ed) Encyclopedia of Neuroscience. Oxford: Academic Press. Volume 6, pp. 51-59.
14. Krubitzer, L. Padberg, J. (2009) Evolution of parietal association areas of the neocortex in mammals. In: Encyclopedic Reference of Neuroscience (Ann Butler, ed.) Springer, Volume 5. Pp 1225-1231.
15. Krubitzer, L. and Hunt, D. (2009). Captured in the net of space and time: Understanding cortical field evolution. In: Evolutionary Neuroscience (Kaas, J.H. ed). Chapter 23 Academic Press, Oxford, pp. 545-568.
16. Karlen, S.J., Hunt, D., and Krubitzer (2010). Cross-modal plasticity in mammalian neocortex. Chapter 18 In: Oxford Handbook of Developmental and Behavioral Neuroscience. (Eds. Mark S. Blumberg, John H. Freeman, and Scott R. Robinson). Oxford University Press. Pp 357-374.
17. Krubitzer, L and Disbrow E (2010) The evolution of parietal areas involved in hand use in primates. In: Spatial Cognition, Spatial Perception. (Dolins, EL and Mitchell, RW eds). Cambridge University Press. Chapter 16. pp. 365-421.
18. Krubitzer LA and Seelke AMH (2013) Cortical evolution in mammals: The bane and beauty of

phenotypic variability. In: In the Light of Evolution. (Striedter, GF, Avise JC, and Ayala FJ eds.) National Academies Press. Chapter 6, pp. 91 – 111

19. Cooke DF, Goldring A, Recanzone GH, Krubitzer L (2014) The evolution of parietal areas associated with visuomanual behavior: From grasping to tool use. In The Visual Neurosciences (Chalupa, L and Werner J eds). MIT Press, Cambridge pp. 1049-1063.
20. Krubitzer L (2015) Lessons from Evolution. In: The Future of the Brain; Essays by the World's Leading Neuroscientists. (Marcus, G and Freeman, J eds). Princeton University Press pp 186 – 193.
21. Krubitzer L (2015) Introduction to Plasticity and Learning. In: The Cognitive Neurosciences; Fifth edition (Michael S Gazzaniga and George R Mangun, eds). MIT Press, Cambridge, pp.77-78.
22. Krubitzer L (2017) Introduction to Volume, Leah Krubitzer and Jon Kaas (eds) Evolution of Nervous Systems, Volume III, Elsevier, London. pp.
23. Krubitzer L and Baldwin M (2017) Beyond the homunculus: The discovery of multiple representations within the “primary” somatosensory cortex of primates by Kaas and Colleagues. In: Brain and Behavior: Revisiting the Classic Studies in Behavioral Neuroscience (Bryan Kolb and Ian Whishaw, eds.). Sage Publishing, Los Angeles, CA. Sage, London pp. 33-44
24. Goldring A and Krubitzer L (2017) Evolution of parietal cortex in mammals: From manipulation to tool use. In the Evolution of Nervous Systems, Volume 3, Primates (Leah Krubitzer and Jon Kaas, eds.). Elsevier, London. pp. 259-286
25. Prescott T and Krubitzer L (2018) Evo-Devo of the mammalian nervous system. In: Living Machines: A handbook of research in biomimetrics and biohybrid systems (Tony Prescott, Nathan Lepora and Paul Verschure, eds.). Oxford University Press, Oxford. Chapter 8, pp. 82-98.
26. Krubitzer L (2023) Part IV: Now: Answers from experts who focus largely on the present (Biology, Ethnology, Primatology, Etc.) in Humans – Perspectives on our Evolution from World Experts (Sergio Almécija, ed.). Columbia University Press, New York, Chapter 79 pp 337-341.
27. Halley AC, Krubitzer L (2023) The co-evolution of the neocortex and dorsal thalamus in mammals: Scaling relationships between and within structures. The Coevolution of the Neocortex and Dorsal Thalamus in Mammals: Scaling Relationships Between and Within Structures. In *The Cerebral Cortex and Thalamus* (eds. Usrey WM, Sherman SM), Oxford Academic. Pp. 585-595
28. Kaas JH, Krubitzer LA, Qi H-X and Reed J (2024) in: The SAGE Handbook of Cognitive and Systems Neuroscience (2 Vols.) (Gregory J Boyle, ed). Chapter 31: Somatosensory Processing. ss

### **Invited Conferences, Symposia, Colloquia and Seminars**

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- 1984** Society for Neuroscience (Middle Tennessee Chapter).
- 1985** J.B. Johnston Club. Dallas, TX, USA.
- 1985** Vanderbilt Visionaries. Nashville, TN, USA.
- 1987** Vanderbilt Visionaries. Nashville, TN, USA.
- 1990** University of Queensland. Brisbane, Australia.
- 1991** J. B. Johnston Club. New Orleans, LA, USA.
- 1991** Department of Psychology, Vanderbilt University. Nashville, TN, USA.
- 1992** University of California. Irvine, CA, USA.

- 1993** University of Sydney. Sydney, Australia.
- 1993** INSERM. Lyon, France.
- 1994** European Winter Brain Conference. La Playne, France.
- 1994** Rapporteur for Dahlem Workshop on Flexibility and Constraint in Behavioral Systems. Berlin, Germany.
- 1994** Symposium on "Cortical Field Development and Evolution. European Winter Conference on Brain Research. La Playne, France.
- 1994** Symposium on Somesthesia and the Neurobiology of the Somatosensory Cortex. Stockholm, Sweden.
- 1994** The Ciba Foundation Symposium on "The Development of the Cerebral Cortex". London, England.
- 1995** Symposium on the Formation of Cortical Maps. Held in Honor of Hendrik Van der Loos. Amsterdam, Netherlands.
- 1995** Max Planck. Frankfurt, Germany.
- 1996** Cornell University, Department of Neurobiology. Ithaca, NY, USA.
- 1996** Department of Optometry, UC Berkeley. Berkeley, CA, USA.
- 1996** American Association of Anatomists, Herrick Award Lecture, Washington, D. C., USA.
- 1996** McDonnell, Summer Institute in Cognitive Neuroscience, Dartmouth College and School of Medicine. Hanover, NH, USA.
- 1996** Society for Neuroscience Special Interest Social: The Future of Research on the Somatosensory System. Washington D.C., USA.
- 1997** Polish Society for Neuroscience meeting, special lecture, Cortical Plasticity in Mammals. Lodz, Poland.
- 1997** Human Frontier Science Program Workshop, Evolutionary Perspectives on the Brain and Mind, Strasbourg, France.
- 1997** Department of Psychology, UC Berkeley. Berkeley, CA, USA.
- 1997** MIT. Boston, MA, USA.
- 1997** Nencki Institute. Warsaw, Poland.
- 1998** Center for Visual Science, University of Rochester. Rochester, NY, USA.
- 1998** Department of Neurobiology, School of Medicine, Harvard University. Boston, MA, USA.
- 1998** Department of Molecular and Cellular Biology, UC Berkeley. Berkeley, CA, USA.
- 1998** UC San Francisco. San Francisco, CA, USA.
- 1998** The Fifth International Congress of Neuroethology. Early brain damage and cortical reorganization: Implications for theories of brain evolution. La Jolla, CA, USA.
- 1999** Harvard Medical School, Program in Neuroscience. Student-run Spring Symposium on Evolutionary Neurobiology. Boston, MA, USA.
- 1999** Novartis Foundation Symposium, Evolutionary Developmental Biology of the Cerebral Cortex. London, England.
- 1999** Hebb Club, Berkeley, CA, USA.
- 2000** Helmholtz Club, UC Berkeley, Berkeley, CA, USA
- 2000** Department of Psychology, UC Berkeley. Berkeley, CA, USA.
- 2000** University of New York. Stony Brook, NY, USA.
- 2000** Third Berlin Workshop on Cortical Plasticity, Mechanisms of Reorganization. Berlin, Germany.
- 2000** Cajal Club mini symposium on Evolution of the Neocortex. San Diego, CA, USA.
- 2000** NIMH, Opportunities in Cognitive Neuroscience Workshop: The use of multiple techniques to examine the somatosensory system in human and non-human primates. Bethesda, MD, USA.
- 2000** The Jackson Laboratory Symposium, University of California, Davis. Davis, CA, USA.
- 2001** Summer Institute in Cognitive Neuroscience. Dartmouth, NH, USA.
- 2001** Cold Spring Harbor, Banbury Center, Cortical Maps. Laurel Hollow, NY, USA.

- 2001 MGH - Winter Conference on Brain Research Symposium on Cortical Map Plasticity. Boston, MA, USA.
- 2001 Jean Piaget Society Meeting. Berkeley, CA, USA.
- 2001 Symposium on the Evolution of the Brain. Kyoto, Japan.
- 2001 Princeton University. Princeton, NJ, USA.
- 2001 Bell Laboratories. Murray Hill, NJ, USA.
- 2001 Department of Psychology, UC Berkeley. Berkeley, CA, USA.
- 2001 University of Chicago. Chicago, IL, USA.
- 2001 University of Illinois. Chicago, IL, USA.
- 2002 Fourth Workshop on cortical plasticity: Multimodal plasticity in cerebral cortex in the developmentally blind. Schwetzingen, Germany.
- 2002 Attention and Performance. Erice, Italy.
- 2002 California Institute of Technology. Pasadena, CA, USA.
- 2002 MIT. Boston, MA, USA.
- 2002 Brandeis University, Boston, MA, USA.
- 2002 University of California, San Diego/The Salk Institute. San Diego, CA, USA.
- 2002 University of Washington. Seattle, WA, USA.
- 2003 The Keck Center, UC San Francisco. San Francisco, CA, USA.
- 2003 The Ernest Gallo Clinic and Research Center, UC San Francisco. San Francisco, CA, USA.
- 2003 Krieger Mind/Brain Institute, Johns Hopkins University. Baltimore, MD, USA.
- 2003 Department of Anthropology, UC San Diego. San Diego, CA, USA.
- 2003 Department of Cell Biology and Neuroscience, Montana State University. Bozeman, MT, USA.
- 2003 Department of Psychology, Stanford University. Palo Alto, CA, USA.
- 2003 23rd European Winter Conference on Brain Research. France
- 2003 International Brain Research Organization. Prague, Czech Republic.
- 2003 **Keynote Speaker** at the Annual Retreat of the Center for the Neural Basis of Cognition. Carnegie Mellon and University of Pittsburgh Neuroscience graduate group. Pittsburgh, PA, USA.
- 2003 **Keynote speaker**, Annual Retreat of Neuroscience graduate group. Tulane University, New Orleans, LA, USA.
- 2004 The McDonnell Foundation Conference. Palisades, New York, USA.
- 2004 Novartis Foundation Symposium 270: Percept, Decision, Action: Bridging the Gaps. Trieste, Italy.
- 2004 Smith-Kettlewell Eye Research Institute. San Francisco, CA, USA.
- 2005 Oxiopia seminar series, Department of Optometry, UC Berkeley. Berkeley, CA, USA.
- 2005 Darwin Day **Keynote Speaker**, Sacramento, CA, USA.
- 2005 American Association for the Advancement of Science. Symposium on Comparative Perspectives on Brain and Behavior. Washington D.C., USA.
- 2005 Experimental Biology Conference. San Diego, CA, USA.
- 2005 Summer Institute in Cognitive Neuroscience, Evolutionary plasticity in the mammalian neocortex. Dartmouth University, Hanover CT, USA.
- 2005 OSA meeting symposium: Evolution of the visual system, Tucson, AZ, USA.
- 2005 **Plenary Lecture**. European Brain and Behavior Society. Dublin, Ireland.
- 2005 National Academy of Sciences, 17th Annual Frontiers of Science Symposium. Design Principles in the Visual System, Chair. Irvine, CA, USA.
- 2006 ICAM: Grand Challenges in Neuroscience. Santa Fe, NM, USA.
- 2006 ICAM: Annual conference, Grand Challenges in Neuroscience. Santa Fe, NM, USA.
- 2006 University of Illinois. Champagne-Urbana, IL, USA.
- 2006 Mt. Sinai Medical School. New York, NY, USA.
- 2007 Department of Neurobiology, School of Medicine, Harvard University. Boston, MA, USA.

2007 The Allen Institute for Brain Science. Seattle, WA, USA.

2007 Department of Human Development and Department of Cognitive Neuroscience, UC San Diego. San Diego, CA, USA.

2007 Department of Psychology, Weber State University. Ogden, UT, USA.

2007 EEEEC. Paris, France.

2007 **Keynote Speaker**, Human Brain Mapping. Chicago, IL, USA.

2007 Project for Explaining the Origin of Humans (POH) Symposium. La Jolla, CA, USA.

2007 Society for Neuroscience, Special Lecture. San Diego, CA, USA.

2007 EEEEC, Paris, France

2007 Consciousness and the Brain in Context Workshop, UC Berkeley. Berkeley, CA, USA.

2008 International Neuropsychological Symposium, Evolution of the Human Brain and Human Cognition. Tenerife, Spain.

2008 Museum of Natural History, First Fridays lecture series. Los Angeles, CA, USA.

2008 Department of Neuroscience, Virginia Commonwealth University. Richmond, VA, USA.

2008 Department of Psychology, Johns Hopkins University. Baltimore, MD, USA.

2008 Department of Philosophy, University of California, Berkeley. Berkeley, CA, USA.

2008 Department of Psychology, University of Iowa. Iowa City, IA, USA.

2008 Department of Anatomy and Cell Biology, University of Melbourne. Melbourne, Australia.

2008 Queensland Brain Institute, University of Queensland. Brisbane, Australia.

2009 Columbia University. New York, NY, USA.

2009 University of California, Irvine. Irvine, CA, USA.

2010 **Plenary Lecture**. University of Washington. Roger Brown Loucks Lectureship. Seattle, WA, USA.

2010 Woods Hole. Neural systems and behavior course lecture. Woods Hole, MA, USA.

2010 Barcelona, Cognition, Brain and Technology. Barcelona, Spain.

2010 Vision Down Under, University of Queensland. Brisbane, Australia.

2010 Karger Symposium. San Diego, CA, USA.

2010 Vanderbilt University – graduate seminar course invited lecture. Nashville, TN, USA.

2011 Department of Psychology, UC Berkeley. Berkeley, CA, USA.

2011 Department of Psychology, Vanderbilt University, Nashville, TN, USA.

2011 Department of Neurobiology, Physiology, and Behavior, UC Davis. Davis, CA, USA.

2011 Center for Mind and Brain, UC Davis. Davis, CA, USA.

2011 University of Oregon, **Keynote Speaker**, Graduate Student Retreat. Eugene, OR, USA.

2011 The Allen Institute, Open Questions in Neuroscience. Seattle, WA, USA.

2012 National Academy of Sciences Sackler Symposium: In Light of Evolution. Irvine, CA USA.

2012 University of Texas, Center for Brain Health Symposium: Reprogramming the Brain to Health. Dallas, TX, USA

2012 New York Academy of Sciences: Play, Attention, and Learning. New York, NY, USA.

2012 McDonnell Summer Institute. Santa Barbara, CA, USA.

2012 Center for Complex Systems, University of Michigan. Ann Arbor, MI, USA.

2013 Department of Neurobiology, University of Chicago. Chicago, IL, USA.

2013 Yale University, Department of Neurobiology, New Haven CT, USA

2013 **Keynote Speaker**, Annual Baycrest Rotman Research Institute Neuroscience Conference. Toronto, Canada.

2013 **Keynote Speaker**, Annual Neuroscience Graduate Student Symposium. Lisbon, Portugal

2013 Summer Institute in Cognitive Neuroscience, Lake Tahoe, CA, USA.

2013 Universitat Pompeu Fabra, Barcelona, Cognition, Brain and Technology. Barcelona, Spain.

2014 Maximillian Ludwig University, Department of Biomedical Engineering, Munich Germany

2014 Sheffield University, Department of Psychology, England

2014 Universitat Pompeu Fabra, Barcelona, Cognition, Brain and Technology. Barcelona, Spain.

2014 **Harley Hotchkiss Memorial Lecture**, University of Lethbridge, Alberta, Canada



**2014** **Harley Hotchkiss Memorial Lecture**, University of Calgary, Alberta Canada  
**2014** Summit on Human Evolution, Allen Institute, Seattle, Washington USA  
**2015** Cortical Evolution, Toledo, Spain  
**2015** Thalamus and Thalamocortical interactions, Rio de Janeiro, Brazil  
**2015** Universitat Pompeu Fabra, Barcelona, Cognition, Brain and Technology. Barcelona, Spain.  
**2015** UC, Riverside, USA  
**2015** Washington State University, USA  
**2016** Duke University, Institute for Brain Sciences, USA  
**2016** George Washington University, Department of Anthropology, Washington DC, USA  
**2016** Oregon Health and Science University, Department of Neuroscience, Portland, Oregon, USA  
**2016** Max Plank Institute for Biological Cybernetics, University of Tübingen, Institute for Theoretic Physics, Tübingen, Germany  
**2016** Department of Psychology, Vanderbilt University, Nashville, TN, USA  
**2016** Graduate Student Seminar Series, University of Arizona, Tucson, AZ, USA  
**2016** University of Lausanne, Brain Evolution Symposium, Lausanne, Switzerland  
**2016** Case Western Reserve, Department of Neuroscience, Cleveland, Ohio, USA  
**2016** Department of Psychology, Vanderbilt University, Nashville, TN, USA  
**2016** Leonardo Art Science Evenings; University of California, Berkeley, USA  
**2017** Center for Visual Neuroscience Symposium, UC Davis, Davis, CA USA  
**2017** University of Chicago, Computational Neuroscience Seminar Series, Chicago, IL, USA  
**2017** Washington University; Philosophy, Neuroscience and Psychology lecture, St. Louis, MO USA  
**2017** **Rochester University, The Ann Notter Special Lecture, Department of Neuroscience, Rochester, New York, USA**  
**2017** International Neuropsychology Symposium, Sitia, Greece  
**2017** Living Machines Workshop, Stanford University, Palo Alto, CA USA  
**2017** Universitat Pompeu Fabra, Barcelona, Cognition, Brain and Technology. Barcelona, Spain.  
**2017** FENS meeting, Copenhagen, Denmark.  
**2018** **Key Note Speaker, Gordon Conference, Luca, Italy**  
**2018** IMT School for Advanced Studies, Lucca, Italy  
**2018** Vanderbilt University, **Special Lecture** for Vivian Casagrande  
**2018** Evolution and Development of the Cortex, Las Palmas, Spain  
**2018** Santa Fe Institute, Santa Fe New Mexico, USA  
**2018** MacDonnell Foundation, St Louis, Missouri, USA  
**2018** **Key Note Speaker, Hand, Brain and Technology, Switzerland**  
**2018** CARTA, San Diego, USA  
**2018** Vanderbilt University, Department of Psychology, Nashville, Tennessee, USA  
**2018** NIMH Neurodevelopment symposium  
**2019** Novelty Workshop, Lincoln Nebraska  
**2019** University of Montreal, Montreal Canada  
**2019** **Key Note Speaker**, Graduate student sponsored symposium; University of Nevada. Reno USA  
**2019** Western University, London, Ontario Canada  
**2019** IMT, Lucca Italy  
**2019** Istituto Italiano di Tecnologia (IIT), Rome Italy  
**2019** Department of Integrative Biology, UC Berkeley, Berkeley, CA USA  
**2019** Mini symposium, Society for Neuroscience, Chicago, IL, USA  
**2019** Georgia State University, Atlanta Georgia  
**2019** Redwood Institute, UC Berkeley, Berkeley, CA USA  
**2019** Kavli Institute, Trondheim Norway  
**2020** Harvard University, Center for Brain Science, Boston MA, USA  
**2020** Karger Workshop in Evolutionary Neuroscience USA

- 2020 Thalamus Trainee meeting USA
- 2020 **Key Note Speaker**, Congresso della Societa Italiana di Psicofisiologia e Neuroscienze Cognitive, Italy
- 2021 **Key Note Speaker**, NIH faculty retreat
- 2021 Johns Hopkins University, Baltimore MD USA
- 2021 University of Iowa, Iowa City, IA USA
- 2021 **Talairach Lecture, Human Brain Mapping, Organization for Human Brain Mapping**
- 2021 Special Lecture for undergraduates, Project Encephalization, India
- 2021 Columbia University, Neuroscience seminars
- 2021 **38<sup>th</sup> Mildred Trotter Lecture, Washington University, St. Louis, MO, USA**
- 2022 Vanderbilt University seminar series. Nashville, TN, USA
- 2022 **91<sup>st</sup> annual James Arthur Lecture**, American Museum of Natural History, NY, NY, USA
- 2022 **Key Note Speaker:** The Simian Collective, San Diego, Ca USA
- 2023 Neural control of Movement: Evolution of motor systems
- 2023 American Physiology Summit, Long Beach CA USA
- 2023 Graduate Student invited Distinguished Lecture, University of California, San Diego, USA
- 2023 Structure, Function and the Development of Neural Circuits Conference, Irvine, CA
- 2023 Allen Institute Distinguished Speaker Lecture, Seattle, WA USA
- 2023 Case Western Reserve, Graduate student invited special lecture, Cleveland, OH
- 2024 University of Massachusetts (Amherst), Mass, USA
- 2024 Emory University, Atlanta Georgia, GA USA
- 2024 **Key Note Speaker**, Graduate student retreat -FAU- Stiles-Nicholson Brain Institute, FL USA
- 2024 Johns Hopkins University, Baltimore MD USA
- 2024 Pasteur Institute, Paris, France

## Public Presentations/Outreach

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- 2016 Science Café, Davis, CA USA
- 2016 LASER Berkeley, CA
- 2016 Brain Awareness Day, UC Davis
- 2017 Cologne Women in Science Symposium, Cologne, Germany
- 2018 Goddard Space Flight Center, NASA, Maryland, USA
- 2018 **Key Note Speaker**, CARTA, Public Symposium, San Diego, USA
- 2022 **91<sup>st</sup> annual James Arthur Lecture**, American Museum of Natural History, NY, NY, USA
- 2023 Judge for the International Brain Bee

## Meetings and Conferences Organized

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- 2001 Co-organizer for IIIrd Antonio Borsellino College on Neurophysics  
"Evolution of Intelligent Behavior"  
Trieste, Italy  
April 23 - May 4
- 2004 Co-organizer for IIIrd Antonio Borsellino College on Neurophysics  
"Sensory Coding - Spike Trains to Behavior"  
Trieste, Italy  
September 27, 2004 – October 8
- 2009 Co-Organizer. Summer Institute in Cognitive Neuroscience. Sage Institute  
Santa Barbara, California  
June 22 – July 3rd

- 2013** Co-Organizer. Summer Institute in Cognitive Neuroscience. Learning and Plasticity Lake Tahoe, California  
June 24 – 26
- 2014** Co-Organizer. Universitat Pompeu Fabra, Barcelona, Cognition, Brain and Technology. Barcelona, Spain.  
September 1 – 14
- 2015** Co-Organizer. Universitat Pompeu Fabra, Barcelona, Cognition, Brain and Technology. Barcelona, Spain.  
August 30 – Sept 14
- 2017** Co-Organizer. Workshop on Evo/Devo. At Living Machines Conference, Stanford University, Palo Alto, California  
July 24- July 28
- 2023** Co-Organizer. Structure, Function and the Development of Neural Circuits. Irvine, CA
- 2024** Co-Organizer. Evolution and Development of Nervous Systems Zadar, Croatia  
September 9 – 11
- 2024** Co-Organizer. The Lake Conference on Comparative and Evolutionary Neurobiology Seattle, Washington – USA  
October 20-24

## **Editor**

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The Evolution of Nervous systems in mammals, Volume IV: Mammals (2006)  
Elsevier Science, publisher

Section Editor: The Cognitive Neurosciences. Learning and Plasticity (2015)

The Evolution of Nervous systems in mammals, Volume III: Primates (2017)  
Elsevier Science, publisher

The Senses: Volume 4, The somatosensory system (2020)  
Elsevier Science, publisher

Guest Editor: Proceedings of the National Academy of Science (PNAS) 2017, 2018, 2019, 2020, 2021, 2022, 2023

The Evolution of Nervous systems in mammals, Volume 2: Mammals (2024)  
Elsevier Science, publisher

## **Past Funding**

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- 1986** Travel Award for College on the Organization of the Brain, International Centre for Theoretical Physics, Trieste, Italy
- 1987 – 1989** Predoctoral Fellowship “Organization of neocortex in a primate.” NIMH. PI: Leah Krubitzer
- 1987** Travel Award for the IBRO Second World Congress of Neuroscience, Budapest, Hungary, Society for Neuroscience
- 1989** NIH Postdoctoral Fellowship "Developmental influences on retinogeniculate axon arbors." Massachusetts Institute of Technology, Cambridge, MA, USA (declined)

- 1993 - 1997** ARC Research Fellowship "A comparative study of the organization and connections of neocortex in Australian mammals." PI: Leah Krubitzer, R VTHRC ARF 9 94.
- 1994 -1995** ARC Small Grant "Thalamocortical relationships in the somatosensory system of mammals." PI: Leah Krubitzer, R VTHRC ARC 1261 94 B Small.
- 1994** University of Queensland Research Grant "The organization and connections of neocortex in mammals." PI: Leah Krubitzer, NSG-17 VTHRC-94.
- 1995** The Ciba Foundation Bursary Award Host for Zoltán Molnár. "Interaction between the developing thalamus and cerebral cortex: mechanisms involved in the specification of cortical areas."
- 1997 – 2000** NIH RO1. "The somatosensory cortex and thalamus." PI: Leah Krubitzer, 1 RO1 NS35103-01A1.
- 1997 – 2000** Whitehall Foundation "The role of the somatosensory system in intra- manual and bilateral coordination of the hands." PI: Leah Krubitzer M97-20.
- 1998 – 2001** McDonnell-Pew Cognitive Neuroscience Program "Higher order somatosensory processing networks: A combined fMRI study in monkeys and humans." PI: Leah Krubitzer.
- 2000 – 2004** NIH RO1 (NINDS) "The somatosensory cortex and thalamus." PI: Leah Krubitzer 1 RO1 NS35103-05A1.
- 2000 – 2004** NIH 1 R21 MH066756-01. "The role of the somatosensory cortex in affective social behavior." Co-PI.
- 2004 – 2008** McDonnell Foundation. "How does evolution build a complex brain?" PI: Leah Krubitzer.
- 2005 – 2010** R01 "The somatosensory cortex and thalamus." PI: Leah Krubitzer.
- 2008 – 2011** NSF Genetic and Epigenetic contributions to the cortical phenotype
- 2010 – 2012** R21 (NINDS) "Can cortical plasticity and adaptive behavior be amplified by an enhanced visual environment? PI: Leah Krubitzer
- 2010 – 2012** R21 "Effects of Early Experience on Somatosensory Systems in Voles. Co-PI Leah Krubitzer
- 2012 – 2014** R21 (NIBIB) "Development of a Microfluidic Thermal Regulator for Studies of Cortical Function
- 2010 – 2015** R01 (NINDS) "The somatosensory cortex and thalamus." PI: Leah Krubitzer
- 2013 – 2017** R01 (NEI) Can Cortical Plasticity be Directed and Amplified Following Early Loss of Vision?
- 2014 – 2017** R03 (FIRCA) Effects of reversible deactivation of PPC in New World Cebus monkeys

## NIH Study Sections

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Multimodal Integration Research Networks in Cognitive Neuroscience	June, 2002
IFCN-8	February, 2003 December, 2003
NIH, Human Brain Mapping	May, 2003 February, 2004 February, 2006
ZRG1-IFCN-E (01)	April, 2004
Director's Pioneer Award Special Study Section	2009
NIDA sponsored meeting: "Not Just a Matter of Gray and White: Exploring the Importance of Evolution, Genes and Experience on Brain Development" special council.	July, 2009

NIH; Mechanisms of Sensory, Perceptual and Cognitive Processes (SPC)	2013
ZRG1 F02B	June, 2014 October, 2014 March, 2016 June, 2017 June, 2018
SMI (NIH)	June, 2021

## **NSF Research Panels**

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2013 Organization Program in Neural Systems  
Panel 2: Neuro EvoDevo

## **Editorial Board**

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Evolution of Nervous Systems, Volumes 1-4, (2003-2006)  
Elsevier Science, publisher  
International Review in Neurobiology  
Elsevier Science, publisher  
Journal of Comparative Neurology  
Visual Neuroscience  
Anatomical Record  
Brain, Behavior and Evolution

## **Journal Referee**

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American Journal of Primatology  
Anatomical Records  
Brain, Behavior and Evolution  
Brain Research  
Cerebral Cortex  
Development  
European Journal of Neuroscience  
Experimental Brain Research  
Evolution  
Frontiers in Neuroanatomy  
Frontiers in Neuroscience  
Human Brain Mapping  
Journal of Comparative Neurology  
Journal of Neurophysiology  
Journal of Neuroscience  
Journal of Visual Neuroscience  
Nature Neuroscience  
Nature  
Neuroimage  
Neuron

Neuroscience  
PNAS  
PLoS  
Progress in Neurobiology  
Science  
Science reports  
Somatosensory and Motor Research

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