BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME	POSITION TITLE
Corfas, Gabriel	Professor of Neurology and Otology & Laryngology
eRA COMMONS USER NAME GCORFAS	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Univ. Nacional de Buenos Aires, Argentina	M.Sc.	1982	Biological Sciences
Weizmann Institute of Science, Israel	Ph.D.	1990	Neurobiology

Positions and Employment

1984 - 1989 Doctoral Research with Dr. Yadin Dudai, Department of Neurobiology, Weizmann Institute of Science, Rehovot, Israel.
1989 - 1990 Research Associate, Laboratory of Dr. Gerald D. Fischbach, Department of Anatomy and Neurobiology, Washington University School of Medicine, St. Louis, MO
1990 - 1992 Research Fellow, Laboratory of Dr. Gerald Fischbach, Department of Neurobiology, Harvard Medical School and Massachusetts General Hospital
1992 - 1995 Instructor, Department of Neurobiology, Harvard Medical School, Boston, MA
1995 - 2002 Assistant Professor, Department of Neurology, Harvard Medical School and Division of Neuroscience, Children's Hospital, Boston, MA.
2002 - 2008 Associate Professor, Department of Neurology, Harvard Medical School and Division of Neuroscience, Children's Hospital, Boston, MA.
2006 - 2008 Associate Professor, Department of Otology and Laryngology, Harvard Medical School and Division of Neuroscience, Children's Hospital, Boston, MA.
2006 - Director, Basic Research, Department of Otolaryngology, Children's Hospital, Boston, MA.
2008 - Professor, Departments of Neurology and Otology & Laryngology, Harvard Medical School

Other Experience and Professional Memberships

1999 Ad Hoc Reviewer, NIH Neurology MCDN6 study section
2000 Member, NIH Neurology MCDN6 study section
Society for Neuroscience
American Association for the Advancement of Science
Association of Research in Otolaryngology
2002 –present Academy of Science of Latin America, Corresponding Member
2004 –2009 Associate editor, Journal of Neuroscience (Development, Plasticity and Repair section)
2008 - Member, GENSAT Advisory Panel, NIH
2008 - Member, Board of Scientific Council, NIDCD, NIH.

Honors

1985 Short-term EMBO Fellowship
1989 E.E. Bondi Award for Excellence from the Feinberg Graduate School, The Weizmann Institute of Science
1989 Israeli Parliamentary Certificate of Recognition of Scholastic Excellence
1990 – 1992 Postdoctoral Fellowship from the Muscular Dystrophy Association
1993 – 1995 Charles A. King Trust Postdoctoral Fellowship from the Massachusetts Medical Foundation
1996 Klingenstein Fellowship in Neuroscience
1996 Alfred P. Sloan Research Fellowship
1997 Scholar Award from the EJLB Foundation
1998 Young Investigator Award from the NARSAD
2005 Independent Investigator Award from the NARSAD

Peer-reviewed publications B. Peer-reviewed publications (in chronological order).

1. Dudai Y, Buxbaum J, **Corfas G**, Orgad S, Segal D, Sher B, Uzzan A, Zvi S. Defective cAMP metabolism and defective memory in *Drosophila*. Acta Biochim Biophys Hung 1986;21:177-192.
2. Dudai Y, Buxbaum J, **Corfas G,** Ofarim M. Formamidines interact with *Drosophila* octopamine receptors, alter the flies' behavior and reduce their learning ability. J Comp Physiol 1987;161:739-746.
3. Dudai Y, **Corfas G**, Zvi S. What is the possible contribution of Ca^{2+}-stimulated adenylate cyclase to acquisition, consolidation and retention of an associative olfactory memory in *Drosophila*. J Comp Physiol 1987;162:101-109.
4. **Corfas G** and Dudai Y. Habituation and dishabituation of a cleaning reflex in normal and mutant *Drosophila*. J Neurosci 1989;9:56-62.
5. **Corfas G**, Dudai Y. Adaptation and fatigue of a mechanosensory neuron in wild-type *Drosophila* and in memory mutants. J Neurosci 1990;10:491-499.
6. **Corfas G**, Dudai Y. Pharmacological evidences for the involvement of the cAMP cascade in sensory fatigue in *Drosophila*. J Comp Physiol 1990;167:437-440.
7. Falls DL, Harris DA, Johnson FA, Morgan MM, **Corfas G**, Fischbach GD. 42-kD ARIA: A protein that may regulate the accumulation of acetylcholine receptors at developing chick neuromuscular junctions. Cold Spring Harbor Symp Quant Biol 1990;55:397-406.
8. **Corfas G**, Dudai Y. Morphology of a sensory neuron in *Drosophila* is abnormal in memory mutants and changes during aging. Proc Natl Acad Sci USA 1991;88:7252-7256.
9. **Corfas G**, Falls DL, Fischbach GD. ARIA, a protein that stimulates acetylcholine receptor synthesis, also induces tyrosine phosphorylation of a 185-kDa muscle transmembrane protein. Proc Natl Acad Sci USA 1993;90:1624-1628.
10. Falls DL, Rosen KM, **Corfas G**, Lane WS, Fischbach GD. ARIA, a protein that stimulates acetylcholine receptor synthesis, is a member of the neu ligand family. Cell 1993;72:801-815.
11. **Corfas G**, Fischbach GD. The number of Na^+ channels in cultured chick muscle is increased by ARIA, an acetylcholine receptor inducing activity. J Neurosci 1993;13:2118-2125.
12. Vartanian T, **Corfas G**, Li Y, Fischbach GD, Stefansson K. A role for the acetylcholine receptor-inducing protein ARIA in oligodendrocyte development. Proc Natl Acad Sci 1994;91:11626-11630.
13. Fischbach GD, Aratake H, **Corfas G**, Falls DL, Goodearl A and Rosen KM (1994) Trophic interactions at developing synapses. Prog. Clin. Biol. Res. 390:173-190
14. **Corfas G**, Rosen KM, Aratake H, Krauss R, Fischbach GD. Differential expression of ARIA isoforms in the rat brain. Neuron 1995;14:103-115.
15. Goodearl ADJ, Yee AG, Sandrock AW Jr, **Corfas G**, Fischbach GD. ARIA is concentrated at the synaptic basal lamina of the developing chick neuromuscular junction. J Cell Biol 1995;130:1423-1434.
16. Rio C, Rieff HI, Qi P, Khurana TS, **Corfas G**. Neuregulin and erbB receptors play a critical role in neuronal migration. Neuron 1997;19:39-50.
17. Elenius K*, **Corfas G***, Paul S, Choi C, Rio C, Plowman GD, Klagsbrun M. A novel juxtamembrane domain isoform of HER4/erbB4: isoform-specific tissue distribution and differential processing in response to phorbol ester. J Biol Chem 1997;272:26761-26768. (*equal first authors)
18. Tevosian SG, Deconinck AE, Cantor AB, Rieff HI, Fujiwara Y, **Corfas G**, Orkin SH. FOG-2: a new GATA-family cofactor related to multitype zinc-finger proteins Friend of GATA-1 and U-shaped. Proc Natl Acad Sci USA 1999;96:950-955.
19. Montgomery JM, **Corfas G**, Mills RG. Intracellular signaling molecules involved in an inhibitory factor-induced decrease in fetal-type AChR expression. J Neurobiol 1999;42:190-201.
20. Rieff HI, Raetzman LT, Paas D, Yeh H, Siegel R, **Corfas G**. Neuregulin induces $GABA_A$ receptor subunit expression and neurite outgrowth in cerebellar granule cells. J Neurosci 1999;19:10757-10766.
21. Rio C, Buxbaum JD, Peschon JJ, Black RA, **Corfas G**. Tumor Necrosis Factor-α-converting enzyme is required for cleavage of erbB4/HER4. J Biol Chem 2000;275:10379-10387.
22. Shamah SM, Lin MZ, Goldberg JL, Estrach S, Sahin M, Hu L, Bazalakova M, Neve RL, **Corfas G**, Debant A, Greenberg ME. EphA receptors regulate growth cone dynamics through the novel guanine nucleotide exchange factor ephexin. Cell 2001;106:233-244.
23. Mason HA, Ito S, **Corfas G**. Extracellular signals that regulate the tangential migration of olfactory bulb neuronal precursors: inducers, inhibitors and repellents. J Neurosci 2001;21:7654-7663.

24. Sanchez RM, Koh S, Rio C, Wang C, Lamperti ED, Sharma D, **Corfas G**, Jensen FE. Decreased GluR2 expression and enhanced epileptogenesis in immature rat hippocampus following perinatal hypoxia-induced seizures. J Neurosci 2001;21:8154-8163.
25. Sobeih MM, **Corfas G**. Extracellular factors that regulate neuronal migration in the central nervous system. Int J Dev Neurosci 2002;20:349-357.
26. Rio C, Dikkes P, Liberman, MC, **Corfas G**. GFAP expression and GFAP promoter activity in the inner ear of developing and adult mice. J Comp Neurol 2002;442:156-162.
27. Tao X, West AE, Chen WG, **Corfas G**, Greenberg ME. A calcium-responsive transcription factor, CaRF, that regulates neuronal activity-dependent expression of BDNF. Neuron 2002;33:383–395.
28. Borghesani PR, Peyrin JM, Klein R, Rubin J, Carter AR, Schwartz PM, Luster A, **Corfas G***, Segal RA*. BDNF stimulates migration of cerebellar granule cells. Development 2002;129:1435-1442. (*co-senior authors)
29. Prevot V, Rio C, Cho GJ, Ma YJ, Neville C, Rosenthal N, Heger S, Ojeda SR, **Corfas G**. Normal female sexual development requires NRG-erbB receptor signaling in hypothalamic astrocytes. J Neurosci 2003;23:230-239.
30. Chen WG, West AE, Tao X, **Corfas G**, Szentirmay MN, Sawadogo M, Vinson C, Greenberg ME. Upstream Stimulatory Factors are mediators of Ca^{2+}-responsive transcription in neurons J Neurosci 2003;23:2572-2581.
31. Schubert M, Brazil DP, Burks DJ, Kushner JA,Ye J, Flint CL, Farhang-Fallah J, Dikkes P, Warot XM, Rio C, **Corfas G**, White MF. Insulin receptor substrate-2 deficiency impairs brain growth and promotes tau phosphorylation. J Neurosci 2002;23:7084-7092.
32. Patten BA, Peyrin JM, Weinmaster G, **Corfas G**, Sequential signaling through Notch1 and erbB receptors mediate radial glia differentiation J Neurosci 2003;23:6132-6140.
33. Stankovic K, **Corfas G**. Real-time Quantitative RT-PCR for low-abundance transcripts in the inner ear: analysis of neurotrophic factor expression. Hear Res 2003;185:97-108.
34. Chen S, Rio C, Ji RR, Dikkes P, Coggeshall RE, Woolf CJ, **Corfas G**. Disruption of ErbB receptor signaling in adult non-myelinating Schwann cells causes progressive sensory loss. Nat Neurosci 2003;6:1186-1193.
35. Okada M, **Corfas G**. Neuregulin down-regulates postsynaptic $GABA_A$ receptors at the hippocampal inhibitory synapse. Hippocampus 2004;14:337-344.
36. Satchi-Fainaro R, Puder M, Davies JW, Greene AK, **Corfas G**, Folkman J. Targeting angiogenesis with an HPMA copolymer-TNP-470 conjugate. Nat Med 2004;10:255-261.
37. Stankovic K, Rio C, Xia A, Sugawara M, Adams JC, Liberman MC, **Corfas G**. Survival of adult spiral ganglion neurons requires erbB receptor signaling in the inner ear. J Neurosci 2004; 24:8651-8661.
38. **Corfas G**, Velardez MO, Ko CP, Peles E, Ratner N. Mechanisms of axon-Schwann cell interactions. J Neurosci 2004;24:9250-9260.
39. **Corfas G**, Roy K, Buxbaum JD. Neuregulin 1-erbB signaling and the molecular/cellular basis of schizophrenia. Nat Neurosci 2004;7:575-580.
40. Prevot V, Lomniczi A, **Corfas G**, Ojeda SR. ErbB-1 and erbB-4 receptors act in concert to facilitate female sexual development and mature reproductive function. Endocrinology 2005;146:1465-1472.
41. Sahin M, Greer PL, Lin MZ, Poucher, H, Eberhart J, Schmidt S, Wright TM, Shamah SM, O'Connell S, Cowan CW, Hu L, Goldberg JL, Debant A, **Corfas G,** Krull CE, Greenberg ME. Eph dependent tyrosine phosphorylation of ephexin 1 modulates growth cone collapse. Neuron 2005; 46:191-204.
42. Sugawara M, **Corfas G**, Liberman MC. Influence of supporting cells on neuronal degeneration after hair cell loss. JARO 2005; 6:136-147.
43. Gierdalski M, Sardi SP, **Corfas G**, Juliano SL. Neuregulin-1 restores disorganized radial glia in the developing cerebral cortex. J Neurosci 2005; 25:8498-8504.
44. Ge W, He F, Kim KJ, Blanchi B, Coskun V, Nguyen L, Wu X, Zhao J, Heng J, Martinowich K, Tao J, Wu H, Castro D, Sobeih MM, **Corfas G**, Gleeson JG, Greenberg ME, Guillemot F, Sun YE. Coupling of cell migration with neurogenesis by proneural bHLH factors. Proc Natl Acad Sci USA 2006;103:1319-1324.
45. Patten BA, Sardi SP, Koirala S, Nakafuku M, **Corfas G**. Notch1 signaling regulates radial glia differentiation through multiple transcriptional mechanisms, J Neurosci 2006; 26:3102-3108.
46. Chen S, Velardez MO, Warot X, Miller S, Cros D, **Corfas G**. Neuregulin 1-erbB signaling is necessary for normal myelination and sensory function. J Neurosci 2006; 26:3079-3086.
47. Rieff HI, **Corfas G**. erbB receptor signaling regulates dendrite formation in cerebellar granule cells in vivo. Europ. J Neurosci 2006; 23:2225–2229.

48. Sardi SP, Murtie J, Koirala S, Patten BA, **Corfas G**. Presenilin-dependent erbB4 nuclear signaling regulates the timing of astrogenesis in the developing cerebral cortex, Cell 2006; 127:185-197.
49. Sugawara M, Murtie J, Stankovic K, Liberman MC and **Corfas G**. Dynamic patterns of Neurotrophin 3 expression in the postnatal mouse inner ear, J Comp Neurol 2007; 501:30-37.
50. Buxbaum JD, Georgieva L, Young JJ, Plescia C, Kajiwara Y, Jiang Y, Moskvina V, Norton N, Peirce T, Williams H, Craddock NJ, Carroll L, **Corfas G**, Davis KL, Owen MJ, Harroch S, Sakurai T, O'Donovan MC. Molecular dissection of NRG1-ERBB4 signalling implicates PTPRZ1 as a potential schizophrenia susceptibility gene, Mol Psych 2007; 13: 162-172.
51. Murtie JC, Macklin WB, **Corfas G**. Morphometric analysis of oligodendrocytes in the adult mouse frontal cortex, J. Neurosci. Res 2007; 85: 2080-2086.
52. Roy K, Murtie JC, El-Khodor BF, Edgar N, Sardi SP, Hooks BM, Benoit-Marand M, Chen C, Moore H, O'Donnell P, Brunner D, **Corfas G**. Loss of erbB signaling in oligodendrocytes alters myelin and dopaminergic function, a potential mechanism for the pathogenesis of neuropsychiatric disorders, Proc Natl Acad Sci USA 2007; 104: 8131-8136.
53. Kawasaki Y, Zhuang Z-Y, Wang X, Tan P-H, Gao Y-J, Xu Z-Z, Roy K, **Corfas G**, Lo EH, Ji R-R. Distinct roles of matrix metalloproteases in the induction and maintenance of neuropathic pain. Nature Medicine Nat Med. 2008 Mar; 14: 331-6.
54. Li S, Jin Z, Koirala S, Bu L, Xu L, Hynes RO, Walsh CA, **Corfas G** and Piao X. GPR56 regulates pial basement membrane integrity and cortical lamination, J Neurosci. 2008; 28: 5817-5826.
55. Benny O, Fainaru O, Adini A, Bazinet L, Adini I, Cassiola F, Pravda E, Koirala S, D'Amato R, **Corfas G** and Folkman J. Lodamin: a novel formulation for oral administration of TNP-470 as a potent inhibitor of angiogenesis, tumor growth and metastasis. Nature Biotech. 2008; 26: 799-807.
56. Lok J, Sardi SP, Guo S, Besancon E, Ha DM, Rosell A, Kim WJ, **Corfas G** and Lo EH. Neuregulin-1 signaling in brain endothelial cells. Journal of Cerebral Blood Flow & Metabolism 2009; 29: 39-43.
57. Koirala S, Jin Z, Piao X and **Corfas G**. GPR56-regulated granule cell adhesion is essential for rostral cerebellar development J. Neurosci. 2009, 29: 7439-7449.
58. Gomez-Casati ME, Murtie J and **Corfas G.** Cell-specific inducible gene recombination in postnatal inner ear supporting cells and glia J Assoc Res Otolaryngol. 2010;11:19-26 [Epub ahead of print].
59. Koirala S and **Corfas, G.** Identification of novel glial genes by single-cell transcriptional profiling of Bergmann glial cells from mouse cerebellum. PLoS ONE 2010 5(2): e9198. doi:10.1371/journal.pone.0009198.
60. Ross SE, Mardinly A, McCord AE, Zurawski J, Cohen S, Jung C, Hu L, Mok SI, Shah A, Savner E, Tolias C, Corfas RA, Chen S, Inquimbert P, Xu Y, McInnes RR, Rice FL, **Corfas G**, Ma Q, Woolf CJ, Greenberg ME. Loss of inhibitory interneurons in the dorsal horn of the spinal cord gives rise to abnormal itch in Bhlhb5 mutant mice. Neuron 2010 25;65(6):886-898.
61. Gomez-Casati ME, Murtie J, Rio C, Stankovic K, Liberman MC and **Corfas G**. Nonneuronal cells regulate synapse formation in the vestibular sensory epithelium via erbB-dependent BDNF expression. Proc Natl Acad Sci USA (2010) 107:17005-10.
62. Yahalom B, Athiraman U, Soriano SG, Zurakowski D, Carpino EA, **Corfas G** and Berde CB. Spinal Anesthesia in Infant Rats: Development of a Model and Assessment of Neurological Outcomes. Anesthesiology 2011 114:1325-1335.
63. Sandau US, Mungenast AE, Alderman Z, Sardi SP, Fogel AI, Taylor B, Parent A-S, Biederer T, **Corfas G** and Ojeda SR. SynCAM1, a synaptic adhesion molecule, is expressed in astrocytes and contributes to erbB4 receptor-mediated control of female sexual development. Endocrinology 2011 152:2364-76.
64. Sandau US, Mungenast AE, McCarthy J, Biederer T, **Corfas G** and Ojeda SR. The synaptic cell adhesion molecule, SynCAM1, mediates astrocyte-to-astrocyte and astrocyte-to-GnRH neuron adhesiveness in the mouse hypothalamus. Endocrinology 2011 152:2353-63.
65. Clasadonte J, Poulain P, Hanchate NK, **Corfas G**, Ojeda SR and Prevot V. Prostaglandin E2 release from astrocytes triggers gonadotropin-releasing hormone (GnRH) neuron firing via EP2 receptor activation. Proc Natl Acad Sci USA 2011 108(38):16104-9.