

## Curriculum Vitae, August 2019

Name: **Idan Segev**  
Address: 27 Beth Hakerem Street  
Jerusalem, 96343, Israel  
Birth Date: November 11, 1949  
Birth Place: London, England  
Status: Married - 2 children  
Position: Professor of Neuroscience  
Head, Department of Neurobiology, Institute Life Sciences, and member at the Edmond and Lily Safra for Brain Sciences (ELSC) - <https://elsc.huji.ac.il>  
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### Education

1955 - 1963 Primary School, Nof-Yam, Herzeliya  
1963 - 1967 High School, Adjoining the Hebrew University, Jerusalem  
1967 - 1970 Military Service  
1970 - 1973 B.Sc. Hebrew University, Mathematics and Biology  
1973 - 1976 M.Sc. Hebrew University (supervisors: Prof. I. Parnas and M. E. Spira)  
Neurobiology (Summa cum Laude)  
1976 - 1981 Ph.D. Hebrew University (supervisors: Prof. I. Parnas and A. Pazy)  
Experimental and theoretical neurobiology (Summa Cum Laude)

### Employment, visiting scientist and related training

1982 - 1985 Post-doctoral training:  
NIH: Mathematical Research Branch (Dr. W. Rall),  
and Laboratory for Motor Control (Dr. R. E. Burke)  
1982 - 1984 (3 months) - Collaboration with the  
A.I. Computer - Vision Group at the M.I.T.  
1985 - 1987 Research Fellow, Department of Neurobiology  
Hebrew University, Jerusalem, Israel.  
1987 - 1991 Lecturer, Department of Neurobiology  
Hebrew University, Jerusalem, Israel.  
1991 - 1994 Senior Lecturer, Department of Neurobiology  
Hebrew University, Jerusalem, Israel.  
1992 - 1993 Visiting Scientist, Mathematical Research Branch  
NIDDK, NIH.  
1994 - 1999 Associate Professor, Department of Neurobiology  
Hebrew University, Jerusalem, Israel  
1999 Full Professor, Department of Neurobiology  
Hebrew University, Jerusalem, Israel  
2009 - Member of the Edmond and Lily Safra Center for Brain Sciences (ELSC)  
2008 - present Visiting scientist at the Blue Brain Project (EPFL)  
2015 - present Adjunct Professor at the EPFL, Brain and Mind Institute

### Awards

1972	Dean's prize for excellent undergraduate student
1976	"Landau" prize for an excellent Ms. thesis
1987	"Mauritzio Richter" prize for an excellent young scientist
1987	Elected best teacher, Institute of Life Sciences, Jerusalem
1988 - 1989	Elected best teacher at the international course: "Methods in Computational Neuroscience" - Marine Biological Laboratories, Woods Hole, Mass
1998	"Rafi Freund" prize for best popular scientific article in Hebrew (published in "Galileo"). Article entitled: "Neurons that compute and learn"
2001	The David & Inez Myers Chair in Computational Neuroscience

### Teaching experience and e-courses (partial list)

1973 - 1981	Teaching Assistant in "Statistics for Biologists" (30 students) and "General Physiology" (#72336 – 180 students).
1985 - present	Lecturer at the Life Sciences Institute. "Introduction to Neurobiology" (#72369 – 60 students); "General Physiology" (#72335 – 150 students); "Methods in Theoretical Neurobiology"; (#76905 – 10 students); "Biophysics of Excitable Membranes" (#78806 – 12 students); "Approaches in Theoretical Biology" (#72602 – 20 students).
1984	Lecturer in "Biophysics of Computation" (20 students) - Georgetown University, Washington, D.C
1988 - 1992	Instructor in "Methods in Computational Neuroscience" - Marine Biological Laboratories, Woods Hole, Mass.
2000 -	"Biophysics of computation and plasticity" (advanced course for the Ph.D. program in Neural Computation, Hebrew University)
1996 - 1998	Teacher at the "Crete Course in Computational Neuroscience" (Crete, Greece - one month each summer)
1999	Teacher at the – "EU Advanced Course in Computational Neuroscience" (Trieste, Italy)
2002	Teacher at the – "EU Advanced Course in Computational Neuroscience" (Obidos, Portugal)
2005 - 2007	Teacher at the – "EU Advanced Course in Computational Neuroscience" (Arcachon, France)
2010	Modeling neurons (EPFL) (a condensed 2-weeks summer course)
2013 - ongoing	Coursera - "Synapses, Neurons and Brains" (e-course, ~100,000 students at first round and presently ~40,000 at second round, Hebrew University Course) <a href="https://www.coursera.org/course/bluebrain">https://www.coursera.org/course/bluebrain</a>
2018 - ongoing	Edx course - "Simulation Neuroscience" (e-course an EPFL Course) <a href="https://www.edx.org/course/simulation-neuroscience-epflx-simneurox">https://www.edx.org/course/simulation-neuroscience-epflx-simneurox</a>

### Administrative positions (partial list)

1985 -	Member of Physiology Teaching Division, Hebrew University.
1988 -	Member of the Neurobiology Teaching Division, Hebrew University.
1989 - 1992	Advisor to senior B.Sc. students, Institute of Life Sciences.
1989 - 1991	Founder and head of the "Center for Biological Computing" Institute of Life Sciences, the Hebrew University.
1989 - 1991	Member of the "Committee for basic equipment", Institute of Life Sciences, the Hebrew University.
1991 - 2007	Member of the "Center for Neural Computation", Hebrew University.
1992	Member of the Referee Board and representative for the Middle east for the international "Computation and Neural Systems (CNS)" meetings.
1993	Member of the Referee Board for the "Neuronal Information Processing Systems (NIPS) " meetings, USA.
1993	Member of the NSF Review panel "Computational Neuroscience and Behavioral Neuroscience" (Washington DC).
1993 - 1997	Head of the Department of Neurobiology, Institute of Life Sciences.
1994 - 1995	Head of the "Center for Biological Computing", Institute of Life Sciences.
1996 - 1998	Organizer + Director – "Crete Course in Computational Neuroscience" – one month each summer.

1997 - 1999	Head, "Interdisciplinary Ph.D. program for Neural Computation", Hebrew University.
1998 - 2017	Member of the "Candidates Search Committee", Institute of Life Science, Hebrew University.
1999 - 2007	Director, "Interdisciplinary Center for Neural Computation (ICNC)", Hebrew University.
2008 – present	Member of the Edmond and Lily Safra Center for Brain Sciences (ELSC)
2004 - 2007	Head, The departments of Neurobiology, Hebrew University
2011 - present	Head, The Departments of Neurobiology, Hebrew University
2012 - 2017	Israeli co-director (with German co-directors, T. Bonhoeffer and A. Borst) of The Max Planck-Hebrew University Center for Sensory Processing of the Brain in Action
2012- 2017	Members of ELSC executive committee
2017 – present	Members of ELSC recruitment committee
2013 – 2018	Co-director of Theoretical section in the European Flagship Human Brain Project
2008 – present	Key investigator under the Swiss/EPFL Blue Brain Project

### Society membership

1986 -	Member of the Israeli Society for Physiological and Pharmacology.
1991 -	Member of the American Society for Neuroscience.
1991 -	Member of the European Neuroscience Association (ENA).
1992 -	Member of the Israeli Society for Neuroscience
2014 -	Member of the European Molecular Biology Organization (EMBO)

### Editorial Boards and Editor

Chief editor and co-founder *Frontiers in Neuroscience* (presently the largest journal in Neuroscience)

<https://www.frontiersin.org/journals/neuroscience>

*Co-initiator and Editor of Journal of Computational Neuroscience Elsevier*

*Editor in PLoS Biology*

*Co-chief editor of Frontiers for young minds (online free journal for kids, written by scientists and reviewed by kids) - <https://kids.frontiersin.org>*

*Editor and initiator of the Israeli version of the above journal entitled: פרונטירז-מדע לצעירים: <https://kids.frontiersin.org/he>*

### Reviewer for the following Journals

*Journal of Neurophysiology*

*Journal of Neuroscience*

*Journal of Physiology*

*Journal of Computational Neuroscience*

*Neural Computation*

*Nature*

*Nature Neuroscience*

*Neuron*

*Proceedings of the National Academy of Science (PNAS)*

*Proceeding of the Neural and Information Processing Systems (NIPS)*

*Science*

*Trends in Neuroscience (TINS)*

*Frontiers in Neuroscience*

### Reviewer for the following grant foundations (partial list)

The Israel Science Foundation

The US-Israel Bi-national Science Foundation (BSF)

The German Israel Foundation (GIF)

The Swiss National Science Foundation

The National Science Foundation (NSF)

The National Institute of Health (NIH)  
The Wellcome Trust (UK)

### Other academic activities (partial list)

- 1995 “13 lectures on the brain”. The Israeli “Broadcast University”.
- 1992 Public scientific lectures on the brain (high schools, Hi-tech industry, etc.) – about 5 lectures/year.
- 1999 - Lecturer for “Bash’aar” – A non-profit organization for increasing the interaction between universities and the general community.
- 2000 - Lecturer at international events for the Hebrew University (e.g., 2002 - Paris; the Scopus award for Ms. Lily Safra; 2003 – Paris, the Scopus award for Mr. Roman Polanski; 2004, Scopus award, Mr. Maurice Levi, 2005, Paris; Florida – ALEF meeting with Christopher Reeve, 2004).
- 2011 Avnei Pina course on the brain (frontal + YouTube course on the brain, in Hebrew)  
<http://elsc.huji.ac.il/segev/classes/avnei-pina-76981>
- 2010 – present The creation of “The Brain Circle” annual retreat in Europe – Teaching with other ELSC researchers, frontiers of brain research to a group of ~50 European supporters of the Hebrew University.

### Organizer of international scientific conferences & schools (partial list)

- 1999 - “EU Advanced Course in Computational Neuroscience” Trieste, Italy (founder and co-director, with E. De Schutter, K. Obermayer and A. Treves)
- 2004 “The art of the brain” an encounter between 10 plastic artists and 10 neuroscientists; Kibutz Cabri – Galilee Israel.
- 2005 “School of dendrites” At the “School of Advanced Study, Hebrew University (Co-director with Prof. Bert Sakmann, Nobel Laureate). – 120 participants.
- 2014 “Frontiers in synaptic function” (with M. Spira) – School of advanced study, Hebrew University
- 2018 Co-organizer of the Intl. meeting “What makes us human :From genes to machine” – Hebrew University (ELSC). 300 attendees worldwide.  
<https://elsc.huji.ac.il/events/elsc-conference-9>  
<https://www.youtube.com/watch?v=E0lV6vyRpKo&feature=youtu.be>  
<https://www.youtube.com/watch?v=S-bFXufPnK8&feature=youtu.be>  
<https://www.youtube.com/watch?v=m3sc4c5e12Q&feature=youtu.be>

### Plenary and invited speaker at international scientific conferences (partial list)

- 1999 IBRO. Session entitled “Integrative Processes in Dendrites”. Lecture title: “Design principles of dendrites” (organizer)
- 1999 Juan March Foundation meeting on “Dendrites”, Columbia University in New York from June 4-7, 2000 (invited speaker)
- 2000 German Neuroscience Society (Goettingen) – “Information capacity of a synapse”
- 2003 Berlin Society for neuroscience. Title “Homeostatic synaptic plasticity with a barrage of synapses” (plenary speaker)
- 2003 Gordon Research Conference on Neural Plasticity, Salve Regina University, Newport, Rhode Island (invited speaker) – “The game synapses play”
- 2004 European neuroscience meeting, Lisbon, Portugal. Organizer of an invited session on “Neuronal Noise”
- 2006 The Cajal Nobel centennial meeting, Barcelona
- 2007 BCCN symposium Goettingen

2007	NeuroComp 2008, Paris
2008	PENS Hertie Winter School, Austria
2009	CNS (Computational Neuronal System) – International meeting (Berlin)
2011	The Allen Institute (Seattle), – “Dendritic inhibition”
2012	Janelia farm (Washington DC), “How to build a cortical circuit in silico”
2013	University College London, “The impact of dendrites on axonal encoding capabilities”
2014	Göttingen (Germany) - the Bernstein Conference Workshop: From Structure and Function towards Computational Principles in the Rodent Whisker System
2015	Key note speakers at the the “Human Brain Project” (in the presence of Quin Sophia of Spain)
2016	Paris, dendritic Workshop (Europ. Inst. For Theoretical Neuroscience, EITN) – on “Human nerve Cells”
2018	Paris, dendrites workshop (EITN) – “From dendrites to neuromorphic engineering”

### **Public activities – communicating brain research to the public, highlights**

2010 – present	An annual public series for the Israeli public on “Frontiers in brain research” – Katedra (Tel Aviv)
2010 – present	An annual public series for the Israeli public on “Frontiers in brain research” – Katedra Rama Ha-Sharon
2010 – present	Media/TV/Movies on brain research; see details in ( <a href="http://lobster.ls.huji.ac.il/idan/media/">http://lobster.ls.huji.ac.il/idan/media/</a> ) e.g., with Rino Tzror (TV ch 23), Kobi Medan (TV ch. 23) , London and Kirshenbaum (TV ch. 10), Kobi Barkai (radio, Kan), Itzhak Livni (Galei Tzhal). Other public lectures see <a href="https://lobster.ls.huji.ac.il/idan/media/">https://lobster.ls.huji.ac.il/idan/media/</a>

### **Students, Post-docs and sabbatical visitors**

#### **1. Sabbatical visitors /on-going key collaborations**

1997 -	Dr. Claude Meunier (Prof. Of Physics, Polytechnique, CNRS, Paris) (1-month/year; “ <i>Signal processing in non-uniform dendrites</i> ”)
2000 (Jan. - May)	Dr. <i>Parveen Bawa</i> (Applied Sciences School of Kinesiology, Simon Fraser University, Project: “ <i>Modeling spinal motoneurons</i> ”)
1997 -	Prof. Bert Sakmann (Director, MPI - Heidelberg) “ <i>in Silico cortical modeling</i> ”
2000 -	Prof. Kevan Martin (Director, INI, Zurich) – <i>Visual processing</i>
2006 -	Prof. Henry Markram (co-Director, BMI, Lausanne) <i>Modeling cortical inhibitory interneurons; the Blue Brain Project</i>
2010 -	Prof. Huib Mansvelder and Chris deKock (Free Univ. Amsterdam). <i>Modeling human neurons based on post-operation fresh cortical tissue</i>
2018 -	Ed Lein, Allen Institute – NIH grant ( <a href="https://biccn.org/teams/u01-lein">https://biccn.org/teams/u01-lein</a> )
2018 -	Elly Nedivi (MIT) – ONR grant on dynamics and implications of synaptic inhibition in dendrites

**Postdoctoral fellows and Research projects**

1989 – 1991	Dr. Sara Pantilat (Israeli) “ <i>Realistic simulations of spontaneous activity in cortical networks</i> ”
1996 – 1997	Dr. Bruce Hutcheon (National Research Council, Ottawa, Canada), in collaboration with Prof. Y. Yarom). “ <i>Oscillations in cortical neurons</i> ”
1997 – 1998	Dr. Walter Senn (Univ. of Bern, Switzerland). “ <i>Cortical dynamics with depressing synapses</i> ”
1996 – 1997	Dr. Ron Nitzan (Ph.D, Hebrew Univ., in collaboration with Prof. Y. Yarom). “ <i>Experiments and models of vagal motoneurons</i> ”
2004 - 2005	Dr. Hermann Cuntz (Ph.D. MPI, Munich). “ <i>Modeling complex receptive fields in the fly visual system</i> ”
2010 - 2013	Dr. Ben Torben-Nielsen “ <i>Modeling olivary nucleus networks</i> ” (co-director: Prof. Yosef Yarom, HU).
2015 - 2019	Dr. Siwei Wang “ <i>High level motion detection in the fly</i> ” (with Axel Borst).

**Ph.D. students and thesis subjects**

1. 1990 – 1995	Ron Nitzan (co-supervised with Prof. Y. Yarom, The Life Science Institute). “ <i>Physiology and cable models of vagal motoneurons</i> ”
2. 1994 – 1998	Moshe Rapp (co-supervised with Prof. Y. Yarom, The Life Science Institute). “ <i>Experimental and theoretical study of cerebellar Purkinje cells</i> ”
3. 1992 – 1996	Yair Manor (co-supervised with Prof. Y. Yarom, The Life Science Institute). “ <i>On the subthreshold membrane voltage oscillations in olivary neurons</i> ”
4. 1992 – 1998	Itzhak Aharon (co-supervised with Prof. Y. Yarom, The Life Science Institute). “ <i>Systematic characterization of dendritic morphology</i> ”
5. 1992 – 1996	Hagai Agmon-Snir “ <i>A new method for analyzing dendritic transients</i> ” (Suma Cum Lauda)
6. 1992 – 1998	Moshe Bar-Chava (co-supervised with with Dr. H. Bergman, medical school and Prof. Y. Yarom, Life Sciences). “ <i>Characterization of neurons in the globus palidus in vitro</i> ”
7. 1993 – 1999	Dana Cohen (co-supervised with Prof. Y. Yarom, The Life Science Institute). “ <i>Exploring cerebellar circuitry using optical imaging</i> ”
8. 1993 – 1999	Yoram Gutfreund (co-supervised with Prof. Y. Yarom and Dr. Benny Hochner, The Life Science Institute). “ <i>Motor control of the octopus arm</i> ”
9. 1993 – 2002	Michael London “ <i>Defining synaptic efficacy using theoretic information tools</i> ”
10. 1994 – 2001	Elad Schniedman (co-supervised with Prof. Tali Tishbi, The Institute for Computer Science). “ <i>The effect of neuronal noise on information capacity of neurons</i> ”
11. 1994 – 2001	Puah Mann-Metzer (co-supervised with Prof. Y. Yarom, The Life Science Institute). “ <i>Characterization of the inhibitory system in the cerebellar cortex</i> ”
12. 1999 – 2002	Galit Fuhrman (co-supervised with Prof. Misha. Tsodyks, Institute for Higher Brain Functions, The Weizmann Institute). “ <i>The information content of depressing synapses</i> ”
13. 2001 – 2007	Ithai Rabinowitch “ <i>Modeling homeostatic synaptic plasticity in neurons bombarded by many synaptic inputs</i> ”
14. 2001 – 2007	Ron Jortner “ <i>The role of the mushroom body and lateral protocerebrum in insect learning, memory and perception</i> ” (co-directed with Prof. G. Laurent, Caltech).
15. 2002 – 2007	Irit Nowik “ <i>The game neurons play</i> ”
16. 2004 – 2009	Yoav Banitt “ <i>Orientation selectivity in visual cortex – detailed models based on experiments</i> ” (co-director Shmuel Zamir, Hebrew Univ.)
17. 2004 – 2010	Anat Yaron “ <i>Characterization of ion channel in dendrites</i> ” (co-director: Prof. Y. Yarom, Hebrew Univ.)
18. 2005 - 2009	Shaul Druckmann “ <i>Modeling the electrical diversity of cortical interneurons</i> ”
19. 2005 - 2009	Leora Sarid-Manheim “ <i>Modeling network circuitry at the barrel cortex</i> ” (co-director: Prof. B. Sakmann, MPI Heidelberg)
19. 2006 - 2013	Albert Gideon “ <i>Spike-timing-dependent plasticity</i> ”
20. 2006 - 2012	Lital Bar-Ilan “ <i>Plasticity in dendrites with Ca spikes</i> ”

21. 2005 – 2014 Etay Hay “*L5 Pyramidal cells: Spiking, Dendritic Nonlinearities, Morphological Variability and Microcircuits*”
22. 2011 - Eyal Gal “*Complex network analysis of cortical cortex*” (co-director: Amir Globerson, HU)
23. 2011 - 2017 Yoav Tal “*Complex network analysis of cortical cortex*”
24. 2012 - Oren Amsalem “*Electrical coupling in cortical and olivary networks*”
25. 2011 - 2018 Guy Eyal “*Modeling human neurons*”
26. 2016 - Toviah Moldwin “*The biophysical perceptron*”
27. 2016 - David Beniaguev “*The neuron as deep network*” (with Mickey London)
28. 2016 - Michael Doron “*Computing with nonlinear dendrites*” (with Dafna Shahaf)
29. 2016 - Yain Deitcher “*Morphological study of human neurons*” (with Mickey London)
30. 2018 - Hadas Manor “*Dynamics and function of dendritic inhibition*” (with Elly Nedivi, MIT)
31. 2018 - Alon Shindler (Topology of and “attacks” on cortical networks)

### M.Sc. Students

1. 1986 – 1989 Ron Nitzan (co-supervised with Prof. Y. Yarom, The Life Science Institute). “*Realistic models of vagal motoneurons*”
2. 1990 – 1993 Moshe Rapp (co-supervised with Y. Yarom, The Life Science Institute). “*Integration of synaptic potentials in cerebellar Purkinje cells*”
3. 1988 – 1991 Yair Manor (co-supervised with Prof. Y. Gonczarowski, The Institute for Computer Science). “*Propagation of action potential in axonal trees*”
4. 1988 – 1990 Michael Nevo “*Analytical model for the effect of dendritic spines on the integrative properties of neurons*”
5. 1990 – 1992 Yoram Gutfreund (co-supervised with Prof. Y. Yarom, The Life Science Institute). “*Subthreshold oscillations in cortical pyramidal neurons*”
6. 1997 – 2001 Oz Cahana “*Motion computation with dendrites*”
7. 1997 – 2000 Gal Eliraz “*Reduced models of neurons*”
8. 2001 – 2004 Yoav Banitt “*Realistic Model of spiny stellate cells in the visual cortex*”
9. 2001 – 2004 Leora Manheim “*Modeling L4-L2/3 synaptic connection*” (co-director: Prof. B. Sakmann, MPI Heidelberg)
10. 2004 – 2005 Albert Gideon “*Modeling spike-timing-dependent plasticity in complex dendritic trees*”
11. 2004 – 2005 Lital Bar-Ilan “*The role of Ca spikes for plastic processes in distal dendritic trees*”
13. 2014 - 2016 Yair Dichter “*Modeling c-elegance*”
14. 2014 - 2016 Ohad Dan “*Modeling the fly visual neurons*”
15. 2015 - 2016 Michael Doron “*Modeling directional selectivity in the fly visual system*”
16. 2016 - 2018 Toviah Moldwin “*Deep learning in single neuron with dendritic nonlinearities*”
17. 2019 - Yoni Leibner “*Modeling human CA1 and cortical neurons*”

### Publications

#### I. THESES

1. I. Segev. The propagation of action potentials along bifurcating axons. M.Sc Thesis (Supervised by: Profs. I. Parnas and M. Spira). The Hebrew University of Jerusalem (1976).
2. I. Segev. The behavior of subthreshold potentials in a neuron with a nonlinear membrane .Ph.D thesis (Supervised by: Profs. I. Parnas and A. Pazy). The Hebrew University of Jerusalem (1982).

#### II. PEER REVIEWD PUBLICATIONS

1. Parnas, I. and Segev, I. (1979). A mathematical model of conduction of action potentials along bifurcating axons. *J. Physiol.* 295: 323-343.
2. Segev, I. and Parnas, I. (1983). Synaptic integration mechanisms: A theoretical and experimental investigation of temporal postsynaptic interaction between excitatory and inhibitory inputs. *Biophys. J.* 41: 41-50

3. Segev, I. Fleshman, J.W., Bunow, B. and Miller, J. P. (1985). Modeling the electrical behavior of anatomically complex neurons using a network analysis program: Passive membrane. *Biol. Cyber.* 53: 27-40.
4. Bunow, B., Segev, I. and Fleshman, J.W. (1985). Modeling the electrical behavior of anatomically complex neurons using a network analysis program: Excitable membrane. *Biol. Cyber.* 53: 40-56.
5. Segev, I. and Parnas, I. (1985). Nonlinear cable properties of the giant axon of the cockroach *Periplaneta americana*. *J. Gen. Physiol.* 85: 729-741.
6. Shepherd, G.M., Brayton, R.K., Miller, J.P., Segev, I., Rinzel, J. and Rall, W. (1985). Signal enhancement in distal cortical dendrites by means of interactions between active dendritic spines. *Proc. Natl. Acad. Sci.* 82: 2192-2195.
7. Fleshman, J. W., Segev, I. and Burke, R. E. (1988). Electrotonic architecture of type-identified a-motoneurons in the cat spinal cord. *J. Neurophysiol.* 60: 60-85.
8. Segev, I. and Rall, W. (1988). Computational study of an excitable dendritic spine. *J. Neurophysiol.* 60: 499-523.
9. Burke, R. E., Fleshman, J. W. and Segev, I. (1988-1989). Factors that control the efficacy of group Ia synapses in -motoneurons. *J. Physiol. (Paris)*, 83: 133-140.
10. Nitzan, R., Segev, I. and Yarom, Y. (1990). Voltage behavior along the irregular dendritic structure of morphologically and physiologically characterized vagal motoneurons of the guinea pig. *J. Neurophysiol.* 63: 333-346.
11. Segev, I. (1990). Computer study of presynaptic inhibition controlling the spread of action potentials into axonal terminals. *J. Neurophysiol.* 63:987-998.
12. Segev, I., Fleshman, J. W., and Burke, R. E. (1990) Computer simulation of group Ia EPSPs using morphologically realistic models of cat a-motoneurons. *J. Neurophysiol* 64: 648-660.
13. Manor, Y., Gonczarowski, Y., and Segev, I. (1991). Propagation of action potentials along complex axonal tree: Model and implementation. *Biophys. J.* 60: 1411-1423.
14. Manor, Y., Koch, C., and Segev, I. (1991). Effect of geometrical irregularities on propagation delay in axonal trees. *Biophys. J.* 60: 1424-1437.
15. Rapp, M., Yarom, Y., and Segev, I. (1992). The impact of parallel fiber background activity on the cable properties of cerebellar Purkinje cells. *Neural Computation* 4: 518-532.
16. Rall, W., Burke, R. E., Holmes, W. R., Jack, J. J. B., Redman, S. J., and Segev, I. (1992). Matching dendritic neuron models to experimental data. *Physiological Reviews*. S159-S186.
17. Holmes, W. R., Segev, I., and Rall, W. (1992). Interpretation of time constant and electrotonic length estimate of multi-cylinder or branched neuronal structures. *J. Neurophysiol* 68:1401-1420.
18. Segev, I. (1992). Single neurone models: oversimple, complex and reduced. *TINS* 15: 414-421.
19. Agmon-Snir, H., and Segev, I. (1993). Signal delay and propagation velocity in passive dendritic trees. *J. Neurophys.* 70 (5): 2066-2085.
20. Rapp, M., Segev, I., and Yarom, Y. (1994). Physiology, morphology and detailed passive models of cerebellar Purkinje cells *J. Physiol.* 474: 101-118.
21. Segev, I., Friedman, A., White, E. and Gutnick, M. (1995). Electrical consequences of spine dimensions in a model of a cortical spiny stellate cell completely reconstructed from serial thin sections. *J. Comput. Neurosci.* 2(2):117-130.
22. Gutfreund, Y., Yarom, Y. and Segev, I. (1995). Subthreshold oscillations and resonant frequency in guinea pig cortical neurons: physiology and modeling. *J. Physiol.* 483:621-639.
23. Zador, A., Agmon-Snir, H. and Segev, I. (1995). The Morphoelectrotonic Transform: A Graphical Approach to Dendritic Function. *J. Neurosci.* 15:1669-1682.
24. Koch, C., Rapp, M. and Segev, I. (1996). A Brief History of Time (Constants). *Cerebral Cortex* 6:93-101.
25. Rapp, M., Yarom, Y., and Segev, I. (1996). Modeling back propagating action potential in weakly excitable dendrites of neocortical pyramidal cells. *Proc. Natl. Acad. of Sciences* 93:11985-11990.



26. Gutfreund, Y., Yarom, Y., Segev, I., Flash, T., and Hochner, B. (1996). Organization of octopus arm movement: A model system for studying the control of flexible arm. *J. Neurosci.* 16:7297-7307.
27. Manor, Y., Rinzel, J., Segev, I., and Yarom, Y. (1997). Low amplitude oscillations in the inferior olive: A model based on electrical coupling of neurons with heterogeneous channel density. *J. Neurophys.*: 77: 2736-2752.
28. Senn, W., Segev, I., and Tsodyks, M. (1998). Reading neural synchrony with depressing synapses. *Neural Computation* 10: 815-819.
29. Schneidman E., Freedman B., and Segev, I. (1998). Ion channel stochasticity may be critical in determining the reliability and precision of spike timing. *Neural Computation* 10: 1679-1694.
30. Segev, I. (1998). Sound grounds for computing dendrites, *Nature* 393: 207-208 (News & Views invited article; elected leading article).
31. Segev, I., and Rall, W. (1998). Dendrites and excitable dendritic spines: Earlier theoretical insights elucidate recent direct observations. *Trends in Neuroscience* 21 (11): 453-460.
32. Segev, I. and Schneidman E. (1999). Axons as computing devices: Basic insights gained from models. *J. Physiol.* (Paris) (in press).
33. Anderson, J.C., Binzegger, T., Kahana, O., Martin, K.A.C., and Segev, I. (1999). The role of dendritic asymmetry in generating directionality in neurons of cat visual cortex. *Nature Neuroscience*, 2: 820 - 824.
34. London, M., Meunier, C., and Segev, I. (1999). Signal transfer in passive dendrites with non-uniform membrane conductance. *J. Neurosci.* 19: 8219-8233.
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