PANAYIOTA POIRAZI

PERSONAL INFORMATION

Place of Birth: Vatyli, Famagusta, Cyprus
Date of Birth: August 6th, 1974
Marital Status: Married, three children

Work Address
Foundation of Research and Technology-Hellas (FORTH)
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EDUCATION

1996 – 2000	University of Southern California, Los Angeles, California, USA **Ph.D.,** Department of Biomedical Engineering. (8/8/2000)
1996 - 1998	University of Southern California, Los Angeles, California, USA **Master of Science**, Department of Biomedical Engineering. G.P.A 3.82/4 (Excellent)
1992 – 1996	University of Cyprus, Nicosia, Cyprus. **Bachelor,** Department of Mathematics and Statistics. G.P.A 9.17/10 (Excellent), Ranked 1st out of 120 in the School of Natural Sciences, class of 1996. (28/6/96)

ACADEMIC AND PROFESSIONAL EXPERIENCE

5/2008 – present	FORTH, Institute of Molecular Biology and Biotechnology. **Research Associate Professor of Computational Biology.**
1/2008 – 8/2008	University of Southern California (USC). Department of Biomedical Engineering, **Visiting Research Assistant Professor.**
1/2008 – 8/2008	University of California, Los Angeles (UCLA). Department of Neurobiology, **Visiting Assistant Professor.**
7/2004 – 5/2008	FORTH, Institute of Molecular Biology and Biotechnology. **Research Assistant Professor of Computational Biology.**
9/2002 – 7/2004	FORTH, Institute of Molecular Biology and Biotechnology. **Marie Curie Postdoctoral Fellow.**

5/2001 – 8/2002	B.S.R.C. "Alexander Fleming", Institute of Immunology. **Research Associate and Marie Curie Postdoctoral Fellow.**
2/2001 – 7/2002	University of Cyprus, Department of Computer Science. **Research Associate**.
9/2000 – 6/2002	University of Southern California. Department of Biomedical Engineering, Laboratory for Neural Computation. **Research Associate.**
9/1997 - 9/2000	University of Southern California. Department of Biomedical Engineering, Laboratory for Neural Computation. **Graduate Research Assistant.**
9/1995 - 2/1996	Cyprus Institute of Neurology and Genetics. Molecular Genetics Department, Neurogenetics Laboratory. **Research Assistant**.

HONORS AND AWARDS

October 2004	**EMBO Young Investigator Award**. (2005-2008).
2001	**IBRO Advanced Course in Computational Neuroscience Fellowship**. Trieste, Italy 7/30/2001-08/24/2001.
May 2000	**Fred S. Grodins' Graduate Research Award** for outstanding original research by a Biomedical Engineering graduate student, University of Southern California.
1996 - 2000	**Myronis Fellowship** for graduate studies at the University of Southern California based on academic excellence.
1996 – 2000	**Levendis Foundation Grant** for graduate studies in the United States, based on academic excellence.
June 1996	**Highest G.P.A. Award** for graduating with the highest G.P.A in the School of Pure and Applied Sciences, University of Cyprus, during the academic year 1995-1996.
June 1995	**Th. Dervi's Award** for academic excellence in the Dept. of Mathematics and Statistics, University of Cyprus.
June 1995	**Academic Staff Award** for academic excellence, Dept. of Mathematics and Statistics, University of Cyprus.
June 1994	**Stelios Pichorides Award** for ranking 1st in the Dept. of Mathematics and Statistics, University of Cyprus during the academic year 1993-1994.
1993 – 1994	**Aritemi Foundation Scholarship Award** for ranking 1st in the School of Pure and Applied Sciences, University of Cyprus during the academic year 1993-1994.

PRESS RELEASES

May 21st 2007 — **Press release** covering work of the Poirazi lab on brain modeling. Specifically, the role of dendrites in information processing in the hippocampus. Relevant article in the Greek national daily Eleftherotypia.

May 3rd 2007 — **Press release** covering work of the Poirazi lab on computational methods for gene profiling in relation to cancer and modeling of gene regulatory networks in yeast. Relevant article in the Greek national daily Eleftherotypia.

FUNDING

1. **ΗΡΑΚΛΕΙΤΟΣ ΙΙ '**Μελέτη microRNA-mRNA αλληλεπιδράσεων σχετιζόμενες με καρκίνο', *Funding*: General Secretary of Research and Technology, Hellas. ΥΔ. Νέστορας Καραθανάσης, **P.I. Panayiota Poirazi,** Co-P.I. Kriton Kalantidis. Total Budget: ∈ 45,000

2. **HP-SEE** 'High-Performance Computing Infrastructure for South East Europe's Research Communities' *Funding*: EU, FP7-INFRASTRUCTURES-2010-2. 09/2010-09/2012. **Coordinator: GRNET**, Total budget: 2,100,000. **Partner: Panayiota Poirazi,** Budget: ∈30,000

3. **ΣΥΝΕΡΓΑΣΙΑ:** "**Ανάπτυξη Εθνικού Δικτύου Γονιδιωματικής Έρευνας:** Μεθοδολογική Προσέγγιση στην Βιολογία Συστημάτων." *Funding*: General Secretary of Research and Technology, Hellas. 9/2010-9/2013. Total budget: 800,000. **Partner: Panayiota Poirazi,** Budget: ∈41,500

4. **Marie Curie Outgoing Fellowship of the European Commission.** Project title **"**Cellular mechanisms underlying formation of the fear memory trace in the mouse amygdala**."** 1/3/2010-28/2/2012, ∈205,071.00. **Coordinator: Panayiota Poirazi**, Fellow: Kyriaki Sidiropoulou.

5. **Marie Curie Individual Outgoing Fellowship of the European Commission.** Project title "Computational modeling and physiological studies of neural form and function in the aging brain." 1/3/2008-28/2/2010, ∈204,142.00 **Fellow: Panayiota Poirazi**

6. **EMBO Short Term Fellowship** for visiting Alcino Silva's lab at UCLA and receiving training in electrophysiology techniques. Funding: EMBO, 15/1/2008-15/3/2008, ∈6,800. **Fellow: Panayiota Poirazi**

7. **Levendis Foundation Grant** for the establishment of an Electrophysiology Unit at IMBB-FORTH, *Funding*: Levendis Foundation**,** 1/2006, ∈93,000. **P.I. Panayiota Poirazi**

8. **NSF 0515357** "Anatomical, Physiological, and Modeling Studies of Memory-Related Neural Form and Function", *Funding*: NSF, USA. 30/9/2006-1/10/2009, $550,000. **P.I. Bartlett Mel, Panayiota Poirazi Partner.**

9. **PENED** "Development of computational methods for genomic data analysis", *Funding*: General Secretary of Research and Technology, Hellas. 1/2006-12/2008, ∈228.000. **P.I. Panayiota Poirazi**

10. **EMBO Young Investigator Award** "Using Computational Methods to Understand Neural and Gene Function" *Funding: EMBO* 1/2005-12/2007. ∈75.000. **P.I. Panayiota Poirazi**

11. **ΠΡΑΞΕ** "Development of a Software Package for the Analysis of Gene and/or Protein Expression Data." *Funding*: General Secretary of Research and Technology, Hellas. 1/2004-6/2005, ∈30.000. **P.I. Panayiota Poirazi**

12. **PROGNOCHIP**: "Development and Establishment of DNA Microarray Technology in Greece: Identification and Validation of Classification and Prognosis Molecular Markers for Breast Cancer", *Funding*: General Secretary of Research and Technology, Hellas. 12/2003-12/2006, ∈350.000. **P.I. George Thireos, Panayiota Poirazi Partner.**

13. **INFOBIOMED** (NoE): **"**Structuring European Biomedical Informatics to Support Individualised Healthcare.**"** *Funding*: EU, IST-eHealth program, FP6-IST-507585. **P.I. George Potamias, Panayiota Poirazi Partner.**

14. **Marie Curie Individual Fellowship of the European Commission**. Project title "Using Expression Profiling to Identify Molecular Mechanisms in Malaria: Introducing Neural Networks for Microarray Data Analysis." Proposal ranked 4th among 200 funded applications. Contract no: QLK6-CT2001-51031, ∈75.200 1/2002-6/2004. **P.I. Panayiota Poirazi**

15. **Levendis Foundation Grant** for publication of postdoctoral research work, based on originality and impact on scientific community, 3/2001-9/2001. **P.I. Panayiota Poirazi**

TEACHING

Courses

- 2008: Participating in teaching the graduate level course 'Algorithms in Bioinformatics.' Dept. of Computer Science, Univ. of Crete, Heraklion, Crete.

- 2007-present: Participating in teaching the graduate level core Neuroscience course of the 'Brain and Mind' interdisciplinary graduate program. Medical School, Univ. of Crete, Heraklion, Crete. Lectures cover biophysical modeling of neuronal cells.

- 2005-2008: Invited Speaker in the Graduate Program "Informatics in the Life Sciences" at the Univ. of Patras. Course: "Memory of a single pyramidal neuron model"

- 2003-present: Participating in teaching the Master level course "BIO 505: Bioinformatics", graduate programs in 'Molecular Biology and Biomedicine' and 'Protein Biotechnology,' Department of Biology, University of Crete, Heraklion, Crete.

- 2003: Participating in teaching the Master level course "BIO 409: Multidisciplinarity in Modern Biology", graduate program in 'Molecular Biology and Biomedicine,' Department of Biology, University of Crete, Heraklion, Crete.

- Fall semester 2002: Participating in teaching the Master level course "BIO 408: Methods for Analyzing Biological Data", graduate program in 'Molecular Biology and Biomedicine,' Department of Biology, University of Crete, Heraklion, Crete.

Workshops/Short Courses

- Workshop in Bioinformatics, September 13th-18th, 2004. University of Crete and IMBB-FORTH. Tutorial on "Methods for Microarray Data Analysis and Inference"

Undergraduate Student Supervision

1. Philippa Constantinou. Thesis title "Computational identification of plant mRNA targeted by multiple miRNAs" Department of Biology, University of Crete, October 2005 –October 2006
2. Katerina Gkirtzou. Thesis title "Computational identification of plant miRNA precursors in the genome of plant viruses." Department of computer Science, University of Crete, January 2006- October 2006

Graduate Student Supervision

Master Students

1. Daphne Krionerity. Thesis title "Modeling up and down states in a PFC microcircuit."
2. Maria Psarou. Thesis title "Role of dendritic morphology and ionic mechanisms on bursting activity in pyramidal neurons."
3. Issam Rabi. Thesis title "Computational analysis of P4Hs in plant stress," May 2009-May 2010.
4. Katerina Gkirtzou. Thesis title "Methods for computational identification of miRNAs." Department of computer Science, University of Crete, October 2006-November 2009.
5. Nestoras Karathanasis. Thesis title: "Identification of miRNAs involved in synaptic plasticity: mir124/gria2" Department of Biology, University of Crete, October 2007 –November 2008.
6. Pavlos Pavlidis: Thesis title "Computational methods for identification of informative genes in microarray data", Department of Biology, University of Crete, March 2004 –July 2005.
7. Maria Markaki: Master project title "Using computational models of single neurons to study the effects of aging on neural learning in the hippocampus" Department of computer Science, University of Crete, January 2003-December 2004.

Ph.D. Students

1. George Kastelakis: Ph.D. project title "Modeling the mechanisms of fear memory allocation in amygdala neural networks." May 2010-present.
2. Nestoras Karathanassis: Ph.D. project title "Computational and experimental approaches towards characterizing the role of novel miRNAs in cancer." December 2008-present.
3. Athanasia Papoutsi: Ph.D. project title "Modeling persistent activity in the prefrontal cortex." December 2008-present.
4. Maria Manioudaki: Ph.D. project title "Mathematical models of regulatory networks in yeast cells under stress conditions", Department of Chemistry, University of Crete, January 2005-January 2010.
5. Anastasis Oulas: Ph.D. project title "Computational prediction of gene classifiers and microRNAs in cancer", Department of Biology, University of Crete, February 2003-June 2009.
6. Eleutheria Pissadaki: Ph.D. project title "Encoding of spatial and temporal information by a single CA1 pyramidal neuron", Department of Biology, University of Crete, October 2003-December 2007.

Participation in Master Thesis Committees

1. Giannis Karagiampakis, Department of Biology, University of Crete (2003).
2. Orphanoudaki Georgia, Department of Biology, University of Crete (2010).

PROFESSIONAL ACTIVITIES

Member of:

- Institute of Electrical and Electronic Engineers (IEEE).
- Society for Neuroscience (SFN).

- Hellenic Society for Neuroscience (HSN)
- Federation of European Neuroscience Societies (FENS)
- European Molecular Biology Organization (EMBO-YIP)
- Hellenic Society for Computational Biology (HSCB)
- Marie Curie Fellows Association (MCFA)
- European Neuroscience Institute Network (ENI-NET)

Member of Organizing Committees for:

- AREADNE 2010, Research in Encoding and Decoding of Neural Ensembles, 17-20 June, 2010, Santorini, Greece.
- ITAB 2009 (Track chair), 9th International Conference on Information Technology and Applications in Biomedicine, 7-9 November, 2009, Larnaca, Cyprus**.**
- The 1st Cretan Bioinformatics Forum, June 19th, Heraklion, Crete.
- 20th Annual Meeting of the Hellenic Society for Neuroscience, Sept. 29th - Oct. 1st, 2006 Heraklion, Crete.
- 'Modeling the Brain's Labyrinth'. 10th year anniversary meeting for the EU course in computational neuroscience, Sept. 24th -27th, 2006 Fodele Beach, Crete (Local Organizer)

Reviewer for:

- Journal of Neuroscience
- Neural Networks
- Journal of Computational Neuroscience
- *PLoS* Computational Biology
- Cognitive Neurodynamics
- IEEE Transactions in Biomedical Engineering.
- IEEE Transactions on Information Technology in Biomedicine
- CNS 2007
- EMBO Short and Long Term Fellowship Applications

RESEARCH INTERESTS

My research interests lie in the field of computational biology with a focus on the development and application of *in computo* modelling techniques for the investigation of neural and gene functions. In my lab we develop computational methods and tools for (a) analyzing large-scale gene expression data related to human cancer in search for gene markers and disease sub-categories, (b) identifying regulatory elements such as miRNA precursors and their targets in whole genomes of plants and mammals, (c) building theoretical models of gene regulatory networks in Yeast, and (d) modeling healthy and degenerated brain cells in order to relate learning and memory capacity with biophysical and/or morphological properties. Our methodological approaches include (a) novel clustering and feature selection algorithms, (b) machine learning algorithms such as artificial neural networks, hidden Markov models etc, (c) detailed biophysical models of single neurons and (d) theoretical analysis and abstract mathematical modeling.

INVITED LECTURES

1. "Modelling memory functions is single cells and small networks", 23rd Annual Meeting of the Hellenic Society for Neuroscience, Rodos, September 13-14, 2009.

2. "Computational approaches for modelling neural functions", Keynote Speaker, International Conference on Computational Methods in Science and Engineering (ICCMSE), Hersonissos, Crete, September 25-30, 2008.
3. "Information processing in single cells and small networks: insights from compartmental models", AREADNE meeting, Nomikos Conference Center, Santorini, Greece, June 26-29, 2008.
4. "Dendrites as neurons, neurons as neural networks", Workshop on Quantitative Neuron Modelling: Predicting every spike?, EPFL, Lausanne, Switzerland, June 25-26th, 2007
5. "The multiplicative neuron", The Onassis Foundation Science Lecture Series in Biology, FORTH, July 20th, 2006.
6. "How does a single pyramidal model-neuron remember?" Medical School, University of Patras, May 17th, 2006.
7. "Mnemonic capacity of CA1 pyramidal neuron models," Brain and Mind Colloquium, Medical School, University of Crete, May 10th, 2006.
8. "Role of persistent activity in learning and memory capacity of young and aged CA1 pyramidal neuron models," Young Investigator Presentation. Hellenic Society for Neuroscience Meeting, University of Patras, Oct. 1st, 2005.
9. "Information processing in young and aged pyramidal neuron models," presented in the Department of Cellular Physiology, Max Planck Institute for Medical Research, Heidelberg, Germany, December 8th, 2004.
10. "Using Computational Methods to Understand Neural and Gene Function," presented at the Department of Physics, University of Crete, Greece. December 2nd, 2004.
11. "Using Computational Approaches to Understand Neural and Gene Function," presented at the Cavalieri Ottolenghi Scientific Institute (COSI), Università degli Studi di Torino, Italy, May 14th, 2004
12. "Information processing in the young and the aged hippocampus," presented at the Symposium for Brain and Mind, FORTH, *Heraklion, Crete*, March 27, 2004
13. "Computational Neuroscience: Introduction to Brain Modeling," FORTH, *Heraklion, Crete*, February 10, 2003
14. "Computational Approaches to Biological Questions", presented at the Foundation for Research and Technology, Hellas (FORTH), *Heraklion, Crete*, October 23, 2002.
15. "Tumor Classification via the use of Gene Expression and Neural Networks," presented at the Cyprus Institute for Neurology and Genetics, *Nicosia, Cyprus*, September 25, 2002.
16. "Computational Methods for Microarray Data Analysis," Master level seminar, Department of Biotechnology and Biosciences, University of Milan-Bicocca, Milan, Italy, March 27th, 2002.
17. "Biologically Inspired Algorithms for Pattern Classification: how active neuronal properties and structural plasticity boost storage capacity," ICS-FORTH, *Heraklion, Crete*, March 14, 2001.
18. "Information Processing in the Brain: how active dendritic properties and structural plasticity boost memory capacity," presented at the B.S.R.C. "Alexander Fleming", *Vari-Athens, Greece*, March 12, 2001.
19. "Linear and Nonlinear Processing of Learned Information in Neural Tissue," presented at the Cyprus Institute for Neurology and Genetics, *Nicosia, Cyprus*, January 8, 2001.
20. "Learning and Memory in the brain: a very significant but little explored reservoir for information storage," Biomedical Engineering Seminar Class, University of Southern California, *Los Angeles*, October 17, 2000.
21. "The Capacity of Subsampled-Quadratic Classifiers," presented at the *2nd Annual Fred. S. Grodins' Graduate Research Symposium*, University of Southern California, *Los Angeles*, April 23, 1998.

PUBLICATIONS

A. DOCTOR OF PHILOSOPHY

Poirazi P. "Contributions of Active Dendrites and Structural Plasticity to the Neural Substrate for Learning and Memory," University of Southern California, Los Angeles, California, July 2000. Supervisor: Prof. Bartlett W. Mel

B. MASTER OF SCIENCE

Poirazi P. "Memory Capacity of Neurons with Active Dendrites," University of Southern California, Los Angeles, California, December 1998. Supervisor: Prof. Bartlett W. Mel

C. BOOK CHAPTERS

1. Tzamali, E., Manioudaki, M., Reczko M. and **Poirazi, P. "**Methods for structural inference and functional module identification in intracellular networks**"** in *Bioinformatics for Systems Biology,* by Humana Press, Ed. Stephen Krawetz, pg. 517-539, (2009).
2. Tzamali, E., M., **Poirazi, P.,** and Reczko, M. **"**Dynamical modeling of gene and metabolic networks**"** in *Bioinformatics for Systems Biology*, by Humana Press, Ed. Stephen Krawetz, pg. 541-561, (2009).
3. **Poirazi P.** and Pissadaki E. 'The Making of a Detailed CA1 Pyramidal Neuron Model**'** in "Hippocampal Microcircuits: A Computational Modeller's Resource Book" by Springer New York, vol. 5, pg. 317-352, (2010).
4. Oulas, A, Karathanasis, N and **Poirazi P. "**Computational Identification of miRNAs Involved in Cancer", in MicroRNAs and Cancer: Methods in Molecular Biology, vol. 676, Part 1, pg. 23-41, DOI: 10.1007/978-1-60761-863-8_2 (2011)
5. Oulas, A and **Poirazi P**. "Utilization of SSCprofiler to predict a new miRNA gene" in MicroRNA and Cancer: Methods in Molecular Biology, vol. 676, Part 2, pg. 243-252, DOI: 10.1007/978-1-60761-863-8_17 (2011)

D. REFEREED JOURNAL PAPERS

D1. Submitted Manuscripts and Manuscripts in Preparation

1. Tzamali, E., **Poirazi, P**. Tollis, I and Reczko, M "Comparative Computational Analysis of the Metabolic Diversity of the Bacterium *E. coli* across Growth Conditions and Exploration of Growth-Efficient Polymorphic Communities " (submitted)
2. Oulas, A, Karathanasis, N, Kalantidis, K, Iliopoulos, I and **Poirazi, P** "Development of a MicroRNA Target Prediction Tool using Profile Hidden Markov Models" (manuscript in preparation)
3. Papoutsi, A., Sidiropoulou, K., and **Poirazi, P**. "Synaptic Versus Intrinsic Modulation of Persistent Activity in a PFC Microcircuit Model." (manuscript in preparation)
4. Manioudaki M and **Poirazi P. "**Identifying stress-related functional modules and extracting regulatory relationship in gene expression patterns." (manuscript in preparation)
5. Gomez-Gonzales, J.F., Mel, B.W. and **Poirazi. P.** "Fast and slow dendritic integration in CA1 pyramidal cells" (manuscript in preparation)

D2. Published or Accepted Manuscripts

1. Pissadaki, E.K., Sidiropoulou K., Reczko M., and **Poirazi, P**. "Encoding of spatio-temporal input characteristics by a single CA1 pyramidal neuron model" In Press, *PLoS Comp. Biology,* Nov. 2010.
2. Shilyansky, C, Karlsgodt, KH, Cummings, D, Sidiropoulou, K, Hardt, M, James, AS, Ehninger, D, Bearden, CE, **Poirazi, P**, Jentsch, D, Cannon, TD, Levine, MS, Silva, AJ. "Increased corticostriatal inhibition underlies working memory deficits in Neurofibromatosis type I", *Proc Natl Acad Sci U S A.* 2010 Jul 20;107(29):13141-6. Epub 2010 Jul 12.
3. Gkirtzou, K.,Tsakalides, P. and **Poirazi, P.** "Mature miRNA identification via the use of a Naive Bayes classifier", *PLoS One*, 6;5(8). pii: e11843, Aug. 2010.

4. Zhou Y, Won J, Karlsson MG, Zhou M, Rogerson T, Balaji J, Neve R, Poirazi P, Silva AJ. "CREB regulates excitability and the allocation of memory to subsets of neurons in the amygdala." *Nature Neuroscience*, vol. 12, No 11, pg. 1438-43, Nov 2009.
5. Oulas, A. Boutla, A. Gkirtzou, K. Reczko, M. Kalantidis, K. and **Poirazi, P.** "Prediction of novel microRNA genes in cancer associated genomic regions: a combined computational and experimental approach" *Nucleic Acid Research*, vol. 7, No 10, pg. 3276-3287, June 2009.
6. Oulas A. and **Poirazi P.** "MicroRNAs and Cancer – The Search Begins" *IEEE Trans Inf Technol Biomed.* vol. 13, No 1, pg. 67-77, Jan 2009 (invited review).
7. Petalidis, L.P., Oulas, A.,Wayland, M.T., Liu, L., Plant, K., Happerfield, L., Renault-Mihara , F., Freeman, T.C., **Poirazi, P.**[#], & Collins, P.V. "Grading of human astrocytic brain tumours by artificial neural network analysis of gene expression microarray data**.**" *Mol Cancer Ther.,* vol. 7, No 5, pg. 1013-24, May 2008.
   [#] Corresponding author, ***Cover feature***
8. Liebmann, L., Karst, H., Sidiropoulou, K., van Gemert, N., Meijer, O., **Poirazi, P.** and Joëls, M. **"**Differential effects of corticosterone on the sAHP in the basolateral amygdala and CA1 region: Role of calcium channel subunits." *J. Neurophysiology*, vol 99, No 2, pg. 958-68, Feb. 2008.
9. **Poirazi, P.**, Leroy, F., Georgalaki, M.D., Aktypis, A., De Vuyst, L., and Tsakalidou, E. "Use of artificial neural networks and a gamma-concept-based approach to model growth of and bacteriocin production by Streptococcus macedonicus ACA-DC 198 under conditions simulating Kasseri cheese technology." *Appl. Environ. Microbiol,* vol. 73, No 3, pg. 768-776, Feb. 2007.
10. Sidiropoulou K., Pissadaki E.K., and **Poirazi P.** "Inside the brain of a neuron" *EMBO reports*, vol. 7, pg. 886–892, Sept. 2006.
11. Pavlidis P. and **Poirazi P.** "Individualized markers optimize class prediction of microarray data" *BMC Bioinformatics*, vol. 7, pg. 345-359, July 2006.
12. **Poirazi, P.** Neocleous, C., Pattichis, C. and Schizas, C. "Classification Capacity of a Modular Neural Network Implementing Neurally Inspired Architecture and Training." *IEEE Transactions in Neural Networks*, vol 18, No 3 pg. 597-612, May 2004.
13. **Poirazi, P.** Brannon, T. & Mel, B.W. "Arithmetic of Subthreshold Synaptic Summation in a Model CA1 Pyramidal Cell." *Neuron*, vol 37, pg. 977-987, March 2003.
14. **Poirazi, P.** Brannon, T. & Mel, B.W. "Pyramidal Neuron as 2-Layer Neural Network." *Neuron*, vol 37, pg. 989-999, March 2003.
    Poirazi, P. Brannon, T. & Mel, B.W. "Online Supplement: About the Model." *Neuron*, vol 37, March 2003.
15. **Poirazi, P.** and Mel, B.W. "Impact of Active Dendritic Processing and Structural Plasticity on Learning and Memory." *Neuron*, vol 29, pg. 779-796, March 2001.
16. **Poirazi P.** and Mel, B. W. "Choice and Value Flexibility Jointly Contribute to the Capacity of a Subsampled Quadratic Classifier." *Neural Computation*, vol. 12, num. 5, pg. 1189-1207, 2000.

D2.1 Special Issue Journal Papers Selected from Conference Papers

17. Pissadaki, E.K. and **Poirazi P.** "Modulation of excitability in CA1 pyramidal neurons via the interplay of EC and CA3 inputs", *Neurocomputing*, vol. 70, No 11-12, pg. 1735-1740, June 2007.
18. Sidiropoulou K., Joels M., and **Poirazi P.** "Modeling stress-induced adaptations in Ca++ dynamics", *Neurocomputing*, vol. 70, No 11-12, pg. 1640-1644, June 2007.
19. Markaki, M., Orphanoudakis S. and **Poirazi, P.** "Modelling reduced excitability in aged CA1 neurons as a calcium-dependent process." *Neurocomputing*, vol. 65-66, pg. 305-314, June 2005.
20. **Poirazi P.** and Mel, B. W. "Towards the Memory Capacity of Neurons with Active Dendrites." *Neurocomputing*, vol. 26-27, pg. 237-245, 1999.

E. REFEREED CONFERENCE PAPERS

1. Manioudaki M and **Poirazi P** "Modeling of stress-induced regulatory cascades involving transcription factor dimmers", In the IEEE Computer Society Conference Proceedings, presented at IIBM 2010, February 15-18, 2010, Krakow, Poland.
2. Manioudaki M and **Poirazi P** "ANN-based Simulation of Transcriptional Networks in Yeast", In Proc. of IEEE ITAB conference, Larnaca, Cyprus, November 7-9, 2009 (1st prize for Best Student Paper).
3. Manioudaki M and **Poirazi P**, ""Modeling stress-induced regulatory cascades with Artificial Neural Networks." To appear in the Proc. of the Special Session on Computational Methods in Biological and Biomedical Applications of the ICBB/ICCMB conference. Rome, Italy, April 28-30, 2009.
4. Tzamali, E, **Poirazi, P**, Tollis, IG, and Reczko, M. "Computational identification of bacterial communities" To appear in the Proc. of the Special Session on Computational Methods in Biological and Biomedical Applications of the ICBB/ICCMB conference. Rome, Italy, April 28-30, 2009.
5. Gkirtzou, K.,Tsakalides, P. and **Poirazi, P.** "Mature miRNA identification via the use of a Naive Bayes classifier**",** Proc. of the 8th IEEE International Conference on Bioinformatics and Bioengineering, Athens, Greece, Oct. 8-10, 2008.
6. **Poirazi P.** "Information processing in single cells and small networks: insights from compartmental models," Special Volume of the AIP Conference Proceedings for the Sixth International Conference of Computational Methods in Sciences and Engineering (ICCMSE 2008), Hersonissos, Crete, Sept. 25-29, 2008.
7. G. Potamias, A. Analyti, D. Kafetzopoulos, M. Tsiknakis, D. Plexousakis, **P. Poirazi,** M. Reczko, Y. Tollis, E. Sanidas, E. Stathopoulos, S. Vassilaros. Breast Cancer and Biomedical Informatics: The PrognoChip Project. In Proceedings of 17th IMACS World Congress Scientific Computation, Applied Mathematics and Simulation, Paris, France, July 11 - 15, 2005.
8. **Poirazi, P.**, C. Neocleous, C. Pattichis and Schizas C. "A Biologically Inspired Neural Network Composed of Dissimilar Single Neuron Models", Proc. of the 23rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Istanbul, Turkey, Oct. 2001.
9. **Poirazi, P.** and Mel, B.W. "Memory Capacity of Linear vs. Nonlinear Models of Dendritic Integration." *Advances in Neural Information Processing Systems* (NIPS - 12), Eds. S. A. Solla, T. K. Leen, K. R. Miller, vol. 12, pg. 157-163, MIT Press, 2000.
10. **Poirazi, P.** and Mel, B.W. "Sublinear vs. Superlinear Synaptic Integration? Tales of a Duplicitous Active Current." *Proc. of the 7th Joint Symposium on Neural Computation*, University of Southern California, Los Angeles, vol. 10, pg. 88-95, UCSD, May 20, 2000.
11. **Poirazi, P.** and Mel, B.W. "Effects of Morphology on the Memory Capacity of Neurons with Active Dendrites." *Proc. of the 6th Joint Symposium on Neural Computation*, California Institute of Technology, Los Angeles, vol. 9, pg. 104-110, UCSD, May 22, 1999.
12. **Poirazi, P.** and Mel, B. W. "Memory Capacity of Active Dendritic Neurons with Variable Geometry," Proc. *of the 3rd Annual Fred. S. Grodins' Graduate Research Symposium*, pg. 34-35, University of Southern California, Los Angeles, May 5, 1999.
13. **Poirazi, P.** and Mel, B. W. "The Capacity of Subsampled-Quadratic Classifiers: why neurons with active dendrites may win big." *Proc. of the 5th Joint Symposium on Neural Computation*, vol. 8, pg. 123-129, UCSD, May 16, 1998.

F. CONFERENCE ABSTRACTS/POSTERS

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