

## **Stathis Frilingos**

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Born in 1961, Athens, Greece.

## **Education**

Varvakeion Experimental Public School graduate, Athens, Greece, 1979  
B.Sc in Biology, National and Kapodistrian University of Athens, Greece, 1984  
Ph.D in Biological Chemistry, University of Ioannina Medical School, Greece, 1991

## **Career milestones**

1993-1996

Research Associate, Human Frontier (HFSP) fellowship, Howard Hughes Medical Institute (HHMI), Department of Physiology & Molecular Biology Institute, University of California Los Angeles (UCLA), Los Angeles, California.

1998-1999

Fulbright Senior Research Scholar, Department of Physiology & Molecular Biology Institute, University of California Los Angeles (UCLA), Los Angeles, California.

1999-2000

Lecture assistant, Elective Undergraduate Study Program in Biochemistry, University of Ioannina, Greece.

2000-2006

Assistant Professor, Biological Chemistry, University of Ioannina Medical School, Greece.

2007-2011

Associate Professor, Biological Chemistry, University of Ioannina Medical School, Greece.

2012-today

Professor, Biological Chemistry, University of Ioannina, Department of Medicine, Greece.

2018-today

Director, Laboratory of Biological Chemistry, University of Ioannina, Department of Medicine, Greece.

2008-2018

Director, Interdepartmental Postgraduate Program in Biotechnology, University of Ioannina, Greece.

2018-today

Director, Interinstitutional Interdepartmental Postgraduate Program in Molecular and Cellular Biology and Biotechnology, University of Ioannina, Greece; <http://msc-mcbb.ac.uoi.gr>

2019-2023

Director, Institute of Biosciences, University Research Center of Ioannina, University of Ioannina, Greece; <https://urci.unit.uoi.gr/ibs/gr>

## **Teaching**

### ***Postgraduate Courses***

**M.Sc Program in Biotechnology**, University of Ioannina, Greece, 2002-2018 [courses: Molecular Pathology (2002-2008), Introduction to Experimental Methodology (2008-2018), Molecular Biology of the Gene (2008-2018)]

**M.Sc Program in Molecular and Cellular Biology and Biotechnology**, University of Ioannina, Greece, 2018-today [courses: Topics in Molecular and Cellular Biology (themes: Molecular Evolution, Transporters, Genome organization and evolution, Prokaryotic gene expression-regulation); Functional analysis of genes: from the design to the living system (themes: Genetic/genomic engineering, Mutagenesis designs); <http://msc-mcbb.ac.uoi.gr>]

**M.Sc Program in Microbial Biotechnology**, National and Kapodistrian University of Athens, Greece, 2003-2018 [course: Model microbial systems (theme: The lactose permease as a study model for transmembrane transport proteins)]

### ***Undergraduate Courses***

Biochemistry, Department of Medicine, University of Ioannina, Greece, 2002-today  
From Genome to Proteome, Department of Medicine, University of Ioannina, 2002-2016  
From Genome to Evolution, Department of Medicine, University of Ioannina, 2018-today  
Biology, Department of Chemistry, University of Ioannina, 2004-2018  
Evolutionary Biology, Department of Biological Applications and Technologies, University of Ioannina, Greece, 2004-2012  
From Genome to Proteome, Department of Biological Applications and Technologies, University of Ioannina, Greece, 2004-2016

### **Books**

Biology II (Biology of Organisms), University of Ioannina, 1999  
Biochemistry, Molecular Biology (Laboratory Manuals), University of Ioannina, 2001 (most recent edition, 2014)  
From Genome to Proteome, University of Ioannina, 2003

### **Textbook translations (participation)**

*Brock* Biology of Microorganisms, Pearson, 2003 /2015 (Crete University Press, 2007 /2018)  
*Watson* Molecular Biology of the Gene, Pearson, 2008 /2015 (Utopia Publishing, 2011 /2017)  
*Barton* Evolution, Cold Spring Harbor Laboratory Press, 2007 (Utopia Publishing, 2011)  
*Cooper* The Cell: A molecular approach, Sinauer, 2009 /2016 /2019 (Academic Publications, 2011 /2018 /2021), Coordinator of the team  
*Ferrier* Biochemistry, Lippincott, 2014 (Parisianou Publications, 2015)  
*Tropp* Principles of Molecular Biology, Jones and Bartlett, 2014 (Academic Publications, 2015)  
*Lenik* Introduction to Genomics, Oxford University Press, 2012 (Utopia Publishing, 2017)  
*Lodish* Molecular Biology of the Cell, Freeman, 2016 (Utopia Publishing, 2019)  
*Meisenberg-Simmons* Principles of Medical Biochemistry, 2017 (Lagos Medical Editions, 2021)

### **Research**

Current research of the lab focuses on the structure-function and specificity relationships of nucleobase/nucleoside-cation symporters

<http://www.frillingoslab.gr>

### **Research Group**

Post-doctoral: Ekaterini Tatsaki (MSc, 2015; PhD, 2020)

PhD students: Eleni Anagnostopoulou (MSc, 2020)

MSc students: Nikoleta Iosifidou, Eirini Kalfa

Previous members:

Maria Botou (PhD, 2016; postdoc, 2020), Panayiota Lazou (MSc, 2014; PhD, 2021), Vassilis Yalelis (PhD, 2020); Ekaterini Karena (MSc, 2007; PhD, 2014; postdoc, 2015), Ekaterini Georgopoulou (PhD, 2011), Konstantinos Papakostas (PhD, 2011; postdoc, 2012), George Mermelekas (PhD, 2009), Sotiria Tavoulari (PhD, 2005; postdoc, 2006), Panayiota Karatza (PhD, 2006), Panayiotis Panos (MSc, 2005), Alexander Kallis (MSc, 2009), Sotiria Libanovnou (BSc, 2006), Eleni Vourvou (BSc, 2008), Bill Vlantos (BSc, 2010), Vassiliki Charalambous (BSc, 2012), Effie Karyda (BSc, 2017), Sofia Prassopoulou (BSc, 2019), Ariadne Sbouki (BSc, 2020), Martha Kontostathi (BSc student, 2021), Marina Angelidou (BSc student, 2021), Sonja Liis Kaara (summer student, 2022).

## Funding (as PI/coordinator)

Greek Ministry of Education Heraklitos-I (2003-2007),  
Greek Ministry of Development GSRT "Reinforcement Programme of Human Research Manpower" (PENED) (2005-2009),  
GSRT "Collaborations with Research and Technology Organizations outside Europe" (NONEU) (2006-2009), co-financed from the European Union Social Fund,  
Greek Ministry of Education Heraklitos-II (2009-2013),  
Greek Ministry of Education Thalys program (EVOTRANS) (2011-2015), Coordinator  
IKY Scholarships for PhD students (Tatsaki) (2018-2021)  
IKY Scholarships for postdoctoral researchers (Botou) (2019-2021)  
Periphery Excellence Program (BIOMED-20) (2020-2023)  
Hellenic Foundation for Research and Innovation, Science and Society Hubs (EvoResConEdu) (2021-2024)

## Selected publications

1. Tatsaki E, Anagnostopoulou E, Zantza I, Lazou P, Mikros E, and Frillingos S. (2021). Identification of new specificity determinants in bacterial purine nucleobase transporters based on an ancestral sequence reconstruction approach. *J Mol Biol* 433:167329
2. Botou M, Yalelis V, Lazou P, Zantza I, Papakostas K, Charalambous V, Mikros E, Fletmetakis E, and Frillingos S. (2020). Specificity profile of NAT/NCS2 purine transporters in *Sinorhizobium (Ensifer) meliloti*. *Mol Microbiol* 114:151-171
3. Chaliotis A, Vlastaridis P, Ntountoumi C, Botou M, Yalelis V, Lazou P, Tatsaki E, Mossialos D, Frillingos S, and Amoutzias GD (2018). NAT/NCS2 hound: A webserver for the detection and evolutionary classification of prokaryotic and eukaryotic nucleobase-cation symporters of the NAT/NCS2 family. *GigaScience* 7:giy133.
4. Botou M, Lazou P, Papakostas K, Lambrinidis G, Evangelidis T, Mikros E, and Frillingos S. (2018). Insight on specificity of the NAT/NCS2 family from analysis of the transporter encoded in the pyrimidine utilization operon of *Escherichia coli*. *Mol Microbiol* 108:204-19
5. Karena E, Tatsaki E, Lambrinidis G, Mikros E, and Frillingos S. (2015). Analysis of conserved NCS2 motifs in the xanthine permease XanQ of *Escherichia coli*. *Mol Microbiol* 98:502-17
6. Papakostas K, Botou M, and Frillingos S. (2013). Functional identification of the guanine/hypoxanthine transporters YjcD and YgfQ and the adenine transporters PurP and YicO of *Escherichia coli* K-12. *J Biol Chem* 288:36827-40
7. Karena E, and Frillingos S. (2011). The role of transmembrane segment TM3 in the xanthine permease XanQ of *Escherichia coli*. *J Biol Chem* 286:39595-605
8. Kaback HR, Dunten R, Frillingos S, Venkatesan P, Kwaw I, Zhang W, and Ermolova N. (2007). Site-directed alkylation and alternating access model for LacY. *Proc Natl Acad Sci USA* 104:491-494
9. Karatza P, and Frillingos S. (2005). Cloning and functional characterization of two bacterial members of the NAT/NCS2 family in *Escherichia coli*. *Mol Membr Biol* 22:251-61
10. Frillingos S, Sahin-Toth M, Wu J, and Kaback HR (1998). Cys-scanning mutagenesis: a novel approach to structure-function relationships in membrane proteins. *FASEB J* 12:1281-1299