Elena S. Suvorova, Ph.D.

University of South Florida, Morsani College of Medicine, Tampa, Florida

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Citizenship

USA / Russia

Education

Institute of Biochemistry and Physiology of Microorganisms of the Russian Academy of Sciences (IBPM RAS), Pushchino, Russia, **Ph.D. Biochemistry**, 1999	1990-1999
Kazan State University, Kazan, Russia, **M.S. Genetics**, 1989	1984-1989

Postgraduate Training

Department of Physiology and Biophysics, University of Arkansas for Medical Sciences, Little Rock, AR, Cell Biology	1999-2003
Department of Microbiology, Montana State University, Bozeman, MT, Cell Biology	2003-2008

Awards, Honors, Honorary Society Memberships

Scholarship for Academic Excellence, Kazan State University, Kazan, Russia	1986-1989
Postdoctoral Travel Award, FEMS, 6th Symposium on Lactic Acid Bacteria, The Netherlands	1999
Postdoctoral Training Award, Department of Defense, Breast Cancer Research Program (BCRP) of the US Army Medical Research and Materiel Command's Office of the Congressionally Directed Medical Research Programs (CDMRP)	2002
Incentive Award from USF Research and Innovation (USF, Tampa FL)	2017

Appointments

Assistant Professor (tenure-track), Department of Internal Medicine, Division of Infectious Diseases and International Medicine, College of Medicine, University of South Florida, Tampa, FL.	2018-present
Research Assistant Professor, Department of Global Health, College of Public Health, University of South Florida, Tampa, FL.	2016-2018
Research Assistant Professor, Florida Center of Excellence in Drug Discovery and Innovation, University of South Florida, Tampa, FL.	2013-2016
Research Associate, Departments of Molecular Medicine, University of South Florida, Tampa, FL.	2009-2012
Research Scientist, Veterinary Molecular Biology, Montana State University, Bozeman, MT.	2008-2009
Postdoctoral Fellow, Department of Microbiology, Montana State University, Bozeman, MT.	2003-2008
Postdoctoral Fellow, Department of Physiology and Biophysics, UAMS, Little Rock, AR.	1999-2003
Research Assistant, Laboratory of the Plasmid Biology IBPM RAS, Russia.	1993-1999
Graduate Research Assistant, Laboratory of the Plasmid Biology, IBPM RAS, Russia.	1990-1993
Research Technician, Laboratory of Plant Physiology, Institute of Biology, Russian Academy of Sciences, Kazan, Russia.	1989-1990

Teaching, Lecture

Instructor: PHC 6561 Laboratory techniques in Public Health, USF	2017
Teaching Assistant: VTMB422, Functional Gene Expression, Montana State University, Bozeman, MT	2008

Teaching, Supervisory

Major Professor graduate thesis: Abigail Kaiser, M.S.PH, graduate student COPH, USF	2016-2019
Supervisory/training:	
Carmelo A. Alvarez, M.S., graduate student Biotechnology, USF	2013-2018
Jesse Diasparra, M.S.PH, graduate student COPH, USF	2011-2013
Michael Telavera, B. S., undergraduate student CAS, CMMB USF	2016-2018
Tatiana Wing, M.S., graduate student COPH USF	2017-2018
David Dean, M.S., graduate student MCOM, USF	2019-2020
Mikayla Madisson, M.S.PH, graduate student COPH, USF	2020
Cassandra Derrick, M.S.PH, graduate student COPH, USF	2021

Jack Esquenazi, M.S.PH, graduate student COPH, USF	2022
Lauren Hawkins, graduate student Biotechnology, USF	
Amanda Fortin, B.S., technician, Division of Infectious Diseases and	2020-2022
International Medicine, MCOM, USF	2020-2021
Mrinalini Batra, M.S., Division of Infectious Diseases and	
International Medicine, MCOM, USF	2020-2022
Paula Hoker, undergraduate student, CAS, CMMB USF	
Clem Marsilia, undergraduate student, CAS, CMMB USF	2020-2022
	2021-2022

Lectures by Invitation (local, national, and international)

"Cell cycle control of *Toxoplasma* bradyzoite development", ASTMH, virtual conference	November 2022
"*Toxoplasma gondii: life of checks and balances*", University of South Florida, MCOM, Department of Molecular Medicine, Tampa FL	October 2020
"*Toxoplasma gondii: life of checks and balances*", Boston College, Department of Biology, Boston, MA.	September 2019
"*Toxoplasma gondii: life of checks and balances*", University of Georgia-Athens, CTEGD, Department of Infectious Diseases and College of Pharmaceutical Sciences, Athens GA.	March 2019
"Mapping checkpoints of Toxoplasma endodyogeny." 14th International Congress on Toxoplasmosis, Tomar, Portugal.	June 2017
"*A checkpoint roadmap for the apicomplexan parasite division*", University of Arkansas for Medical Sciences, College of Medicine, Department of Physiology and Biophysics, Little Rock, AR	April 2017
"*A novel bipartite centrosome coordinates the apicomplexan cell cycle*", 25th Annual Molecular Parasitology Vector Biology Symposium, CTEGD, University of Georgia-Athens GA.	April 2015
"*Spatial-temporal features of the Toxoplasma centrosome"*. 12th International Congress on Toxoplasmosis, Oxford, UK.	June 2013
"*Discovery of a splicing regulator required for cell cycle progression".* 23rd Annual Molecular Parasitology Meeting, Woods Hole, MA.	September 2012
"*Identifying key molecular determinants of Toxoplasma replication through forward genetics".* 20th Annual Molecular Parasitology Vector Biology Symposium, CTEGD, University of Georgia-Athens GA.	May 2010

Scholarly Activity (grant history)

A) Current grants

Agency: NIH/NIAID
ID#: R01 AI141467-01A1

Title: "Cyclin-mediated control of *Toxoplasma gondii* development"
Role on Project: PI
Percent effort: 37.5%
Direct costs per year: $250,000
Total costs for project period: $1,868,750
Project period: 05/08/2020 – 04/30/2025

Agency: NIH/NIAID
ID#: 1R03AI155834-01
Title: "New Reporter System for Spatiotemporal Visualization of *Toxoplasma gondi* Growth and Development"
Role on Project: PI
Percent effort: 5%
Direct costs per year: $50,000
Total costs for project period: $100,000
Project period: 11/23/2020 – 10/31/2022

Agency: NIH/NIAID
ID#: R21 AI148374-01
Title: "*Toxoplasma gondii* cAMP-dependent kinase PKAc3 regulation of bradyzoite formation"
P.I.: Kami Kim, M.D., Ph.D.
Role on Project: Co-investigator
Percent effort: 5%
Direct costs per year: $125,000
Total costs for project period: $250,000
Project period: 07/01/2019 – 06/31/2021

B) Past Grants
Agency: NIH/NIAID
ID#: R01 AI109843
Title: "*Centrosome control of Toxoplasma growth*"
P.I.: Michael W. White, Ph.D.
Role on Project: Co-investigator
Percent effort: 50%
Direct costs per year: $250,000
Total costs for project period: $1,670,896
Project period: 11/30/2013 – 12/01/2019

Agency: USF College of Public Health
I.D.# Individual Investigator Award
Title: "*Transcriptional responses of ring stage parasites to artemisinin drugs*"
P.I.: Dennis Kyle, Ph.D.
Role on Project: Co-investigator
Percent effort: 10%
Total costs for project period: $25,000
Project period: 01/03/2015-01/07/2015

Published Bibliography

Peer-reviewed

Kozlova EV, **Suvorova ES**, Pivovarenko TV, Romanov VP, Boronin AM. *Structure-functional characteristics of pBS195 plasmids from a broad range of gram-positive and gram-negative hosts.* Molekuliarnaia genetika, mikrobiologiia I virusologiia. 1993; (4):22-27.

Kozlova EV, **Suvorova ES**, Romanov VP, Boronin AM. *Cloning and expression of a plasmid pBS195 gene, determining oxygenase activity, in Escherichia coli cells*. Genetika. 1995; 31(2):170-173

Naumov AV, Zaripova SK, **Suvorova ES**, Khamidullina ET, Boronin AM, Wild JR, Naumova RP. *Transformation of 2,4,6-trinitrotoluene by lactic acid bacteria with formation of hydroxylamine dinitrotoluenes*. Doklady Academii Nauk 1998, 361 (2): 264-267

Naumov AV**, Suvorova ES**, Boronin AM, Zaripova SK, Naumova RP. *Transformation of 2,4,6-trinitrotoluene by lactobacilli with accumulation of toxic hydroxylamino derivatives*. Microbiology. 1999, 68**:** 65-71.

Suvorova ES, Kurten RC, Lupashin VV. *Identification of a human orthologue of Sec34p as a component of the cis-Golgi vesicle tethering machinery.* The Journal of biological chemistry. 2001; 276(25):22810-22818

Suvorova ES, Duden R, Lupashin VV. *The Sec34/Sec35p complex, a Ypt1p effector required for retrograde intra-Golgi trafficking, interacts with Golgi SNAREs and COPI vesicle coat proteins*. The Journal of cell biology. 2002; 157(4):631-643.

Zaripov SA, Naumov AV, **Suvorova ES**, Garusov AV, Naumova RP. *Initial stages of 2,4,6-trinitrotoluene transformation by microorganisms*. Mikrobiologiia. 2004; 73(4):472-478.

Suvorova ES, Gripentrog JM, Miettinen HM. *Different endocytosis pathways of the C5a receptor and the N-formyl peptide receptor.* Traffic 2005; 6(2):100-115.

Shestakova A, **Suvorova E**, Pavliv O, Khaidakova G, Lupashin V. *Interaction of the conserved oligomeric Golgi complex with t-SNARE Syntaxin5a/Sed5 enhances intra-Golgi SNARE complex stability*. The Journal of cell biology. 2007; 179(6):1179-1192.

Ziganshin AM, Naumov AV, **Suvorova ES**, Naumenko EA, Naumova RP. *Hydride-mediated reduction of 2,4,6-trinitrotoluene by yeasts as the way to its deep degradation.* Mikrobiologiia. 2007; 76(6):766-773.

Suvorova ES, Gripentrog JM, Oppermann M, Miettinen HM. *Role of the carboxyl terminal di-leucine in phosphorylation and*

internalization of C5a receptor. Biochimica et biophysica acta. 2008; 1783(6):1261-1270.

Naumenko EA, Naumov AV, **Suvorova ES**, Gerlach R, Ziganshin AM, Lozhkin AP, Silkin NI, Naumova RP. *Participation of oxygen in the bacterial transformation of 2,4,6-trinitrotoluene.* Biochemistry. Biokhimiia. 2008; 73(4):463-469.

Suvorova ES, Gripentrog JM, Jesaitis AJ, Miettinen HM. Agonist-dependent phosphorylation of the formyl peptide receptor is regulated by the membrane proximal region of the cytoplasmic tail. Biochimica et biophysica acta. 2009; 1793(2):406-417.

Suvorova ES, Lucas O, Weisend CM, Rollins MF, Merrill GF, Capecchi MR, Schmidt EE. Cytoprotective Nrf2 pathway is induced in chronically txnrd 1-deficient hepatocytes. PloS one. 2009; 4(7):e6158.

Weisend CM, Kundert JA, **Suvorova ES**, Prigge JR, Schmidt EE. Cre activity in fetal albCre mouse hepatocytes: Utility for developmental studies. Genesis (New York, N.Y.: 2000). 2009; 47(12):789-792.

Rollins MF, van der Heide DM, Weisend CM, Kundert JA, Comstock KM, **Suvorova ES**, Capecchi MR, Merrill GF, Schmidt EE. *Hepatocytes lacking thioredoxin reductase 1 have normal replicative potential during development and regeneration*. Journal of Cell Science. 2010; 123(Pt 14):2402-2412.

Suvorova ES, Lehmann MM, Kratzer S, White MW. *Nuclear actin-related protein is required for chromosome segregation in Toxoplasma gondii.* Molecular and biochemical parasitology. 2012; 181(1):7-16.

Suvorova ES, Croken M, Kratzer S, Ting LM, Conde de Felipe M, Balu B, Markillie ML, Weiss LM, Kim K, White MW. *Discovery of a splicing regulator required for cell cycle progression*. PLoS Genetics. 2013; 9(2):e1003305.

Suvorova ES, Radke JB, Ting LM, Vinayak S, Alvarez CA, Kratzer S, Kim K, Striepen B, White MW. *A nucleolar AAA-NTPase is required for parasite division*. Molecular microbiology. 2013; 90(2):338-355.

Vinayak S, Brooks CF, Naumov A, **Suvorova ES**, White MW, Striepen B. *Genetic manipulation of the Toxoplasma gondii genome by fosmid recombineering*. mBio. 2014; 5(6):e02021.

Brown KM, **Suvorova E**, Farrell A, McLain A, Dittmar A, Wiley GB, Marth G, Gaffney PM, Gubbels MJ, White M, Blader IJ. *Forward genetic screening identifies a small molecule that blocks Toxoplasma gondii growth by inhibiting both host- and parasite-encoded kinases*. PLoS Pathogens. 2014; 10(6):e1004180.

Suvorova ES, Francia M, Striepen B, White MW. A *novel bipartite centrosome coordinates the apicomplexan cell cycle* (*Faculty of 1000 selection*). PLoS biology. 2015; 13(3):e1002093. PMID: 25734885.

News briefs in *Nature Reviews Microbiology* (2015, v13, p. 252) and *Trends in Parasitology* (2015 Jun;31(6):229-230.

El Bissati K, **Suvorova ES**, Xiao H, Lucas O, Upadhya R, Ma Y, Angeletti RH, White MW, Weiss LM, Kim K. *Toxoplasma gondii Arginine Methyltransferase 1 (PRMT1) Is Necessary for Centrosome Dynamics during Tachyzoite Cell Division*. mBio. 2016; 7(1):e02094-15.

Sugi T, Ma YF, Tomita T, Murakoshi F, Eaton MS, Yakubu R, Han B, Tu V, Kato K, Kawazu S, Gupta N, **Suvorova ES**, White MW, Kim K, Weiss LM. *Toxoplasma gondii Cyclic AMP-Dependent Protein Kinase Subunit 3 Is Involved in the Switch from Tachyzoite to Bradyzoite Development*. mBio. 2016; 7(3).

Alvarez CA and **Suvorova ES**. *Checkpoints of apicomplexan cell division identified in Toxoplasma gondii.* PLoS Pathogens. 2017; 13(7) e1006483.

Naumov A, Kratzer S, Ting LM, Kim K, **Suvorova ES**, White MW. The Toxoplasma centrocone houses cell cycle regulatory factors. mBio. 2017; 8(4).

Hawkins L. M., Naumov A.V., Batra M., Wang C., Chaput D., **Suvorova E.S**. "*Novel CRK-Cyclin Complex Controls Spindle Assembly Checkpoint in Toxoplasma Endodyogeny*", mBio, 2022, Feb 8;13(1):e0356121

Naumov A. V., Wang C., Chaput D., Ting L-M., Alvarez C. A., Keller T., Ramadan A., White M. W., Kim K., **Suvorova E.S.** "*Restriction Checkpoint Controls Bradyzoite Development in Toxoplasma gondii*", Microbiol Spectr., 2022, Jun 2;e0070222.

<u>Peer-reviewed Invited Publications</u>

Suvorova ES, White MW. *Transcript maturation in apicomplexan parasites*. Current opinion in microbiology. 2014; 20:82-87.

White, M.W. and **Suvorova, ES**. *Apicomplexa development: something old, borrowed, lost and new.* Trends in Parasitology 2018; 34(11):1012-1013.

Sinai, A. P. and **Suvorova E.S**. *The RESTRICTION checkpoint: a window of opportunity governing developmental transitions in Toxoplasma gondii*, Curr Opin Microbiol, 2020 Oct 13;58:99-105. doi: 10.1016/j.mib.2020.09.009.

Merrick C J, Absalon S, Brochet M., Li Z., **Suvorova ES**. "*Editorial: Celebrating Microbial Diversity: The Many Cell Cycles of Eukaryotic Microbes*", Frontiers Cell Infect Microbiol, 2021 Jul 28;11:738994

Service

Ad Hoc Reviewer for funding agencies:	
Welcome Trust. UK	2019
Medical Research Council, UK	2018, 2019
German Research Foundation (DFG)	2019, 2020
Swiss National Science Foundation (SNF)	2019, 2020
French National Research Agency (ANR)	2021
NIH PTHE study section	2021
NIH ZRG1 study section	2022
Editor (guest):	
Frontiers Cellular and Infection Microbiology	2020-2021
Peer Reviewer for scientific journals:	
Biology Open	2014
Cellular Microbiology	2015, 2017, 2019, 2020
Cell Reports	2019, 2020
eLife	2020
EMBO J	2021
Frontiers Cellular and Molecular Biology	2021
Frontiers Microbiology	2021
Journal of Infectiology	2018
Infection and Immunity	2015
mBio	2013, 2017
mSphere	2020
Microbiology Spectrum	2022
Nature Communications	2016
Nature Microbiology	2017
Pathogens	2011
PLoS Biology	2018
PLoS One	2012, 2020
PLoS Pathogens	2014, 2019
Scientific Reports	2016
Vaccine	2012
Membership:	
NIH PTHE study section	2022-2026
Member of USF MCOM Faculty Council	2020-2022
USF MCOM Committee for Research	2021-2023