

CURRICULUM VITAE

NAME: Sergei O. SKARLATO
DATE OF BIRTH: 12 September 1952
PLACE OF BIRTH: St. Petersburg, Russia
MARITAL STATUS: married, one daughter



ACADEMIC QUALIFICATIONS

2004 – D. Sc. (Histology, Cytology, Cell Biology, “Weakly condensed chromosomes of Protozoa”), Institute of Cytology of the Russian Academy of Sciences, St. Petersburg
1979 – Ph. D. (Cytology, “The nuclear apparatus of the ciliate *Stentor coeruleus* (Ciliophora, Heterotrichida) and its reorganization during conjugation”), Institute of Cytology of the Academy of Sciences of the USSR, St. Petersburg
1974 – Diploma of higher education in Biology (M. Sc.), Leningrad (St. Petersburg) State University, Russia

ACADEMIC TITLE

1995 – Senior Research Scientist in Cell Biology

PRESENT APPOINTMENT

2004 – present: Deputy Director, Institute of Cytology of the Russian Academy of Sciences
1998 – present: Head, Department of Cytology of Unicellular Organisms, St. Petersburg, Russia

BUSINESS ADDRESS

Institute of Cytology, Russian Academy of Sciences
Tikhoretsky Ave., 4
194064 St. Petersburg, Russia
Phone: 7 (812) 297-4496
Fax: 7 (812) 297-3541
E-mail: s_skarlato@yahoo.com
<http://www.cytspb.rssi.ru/>

RESEARCH INTERESTS

Cell biology and ecology of unicellular eukaryotes; Molecular protistology; Ultrastructure; Kinetoplastida; Microsporidia; Ciliates; Rhizopoda; *Stentor*; *Entamoeba*; Nucleus; Mitosis; Chromosome structure; Molecular karyotypes; Host-parasite relationships; Cell adaptation to environmental stress

PREVIOUS POSITIONS

- 1997-1998: Leading Research Scientist, Institute of Cytology RAS, St. Petersburg
 1988-1997: Senior Research Scientist, Institute of Cytology RAS, St. Petersburg
 1986-1988: Research Scientist, Institute of Cytology RAS, Leningrad
 (St. Petersburg)
 1978-1986: Junior Research Scientist, Institute of Cytology RAS, Leningrad
 1974-1978: Post-graduate student, Institute of Cytology RAS, Leningrad

POST-DOCTORAL TRAINING

- 1990: Visiting Professor at the Department of Parasitology, Institute of Biomedical Sciences II, University of Sao Paulo, Brazil
 1985-1986: Visiting Scientist at the Institute of Zoology, Bulgarian Academy of Sciences, Sofia, Bulgaria
 1983: Visiting Scientist at the Institute of Parasitology, Czechoslovak Academy of Sciences, Prague and Ceske Budejovice, Czech Republic

ACADEMIC AWARDS, DISTINCTIONS AND GRANTS

- 2013-2015: grant from the Russian Foundation for Basic Research (“Adaptation of eukaryotic microbes to stress conditions in brackish waters”, 13-04-00703)
 2013: award from the St. Petersburg Scientific Centre, Russian Academy of Sciences
 2010-2012: grant from the Russian Foundation for Basic Research (“The protozoan cell: morphology, ultrastructure, molecular organization and evolution”, 10-04-00943)
 2007-2009: grant from the Russian Foundation for Basic Research (“The nuclear apparatus of Protozoa: structural diversity and genetic plasticity”, 07-04-00662)
 2007: grant from the Russian Foundation for Basic Research (“Organization of the V European congress on protistology and XI European conference on ciliate biology”, 07-04-06047)
 2006-2008: award from the U.S. Civilian Research and Development Foundation (“Determining the prevalence of the opportunistic pathogens microsporidia and cryptosporidia in HIV/AIDS Patients in Russia (St. Petersburg)”, RUB2-002707-SP-05)
 2004-2006: grant from the Russian Foundation for Basic Research (“The chromosome evolution in Protozoa”, 04-04-49209)
 2000-2002: award from INTAS (“Structural organization of Golgi compartment in microsporidians: one more example of a minimal secretory system?”, 99-4-1732)
 2000-2002: grant from the Russian Foundation for Basic Research (“The chromosome apparatus of parasitic protozoans”, 00-04-49502)
 1999: Honorary Certificate from the Russian Academy of Sciences
 1996-1998: grant from the Russian Foundation for Basic Research (“The organization of weakly condensed chromosomes in lower eukaryotes”, 96-04-48107)
 1994-1995: 2 grants from the International Science Foundation (Soros Foundation) (“Identification and structure of chromosomes in lower trypanosomatid flagellates”, R5G000 and R5G300)
 1993: award from the International Science Foundation (Soros Foundation) (# 0258/16, 1993)

- 1990: award from the University of Sao Paulo, Brazil
 1985-1986: award from the Institute of Zoology BAN, Sofia, Bulgaria
 1983: award from the Institute of Parasitology, Prague, Czech Republic

SUPERVISION OF Ph.D. AND M.Sc. STUDENTS

- Current PhD students – Ilya A. Pozdnyakov, Maria A. Berdieva, Olga V. Matantseva
 2013 – Mironova E.I., Ph.D. thesis “Species diversity, community structure and functional significance of planktonic ciliates in the Neva Estuary (Gulf of Finland, Baltic Sea)”.
 2007 – Nasonova E.S., Ph.D. thesis “Chromosome numbers and genome size of the microsporidian *Nosema grylli*”.
 2007 – Pimenov A.Yu., Ph.D. thesis “Transcriptional regulation of class II genes in the ciliate *Stylonychia lemnae*”.
 1995 – Natalia V. Somova, Ph.D. thesis “Electrophoretic karyotypes of lower trypanosomatids”.
 1994 – Osipov D.V., M.Sc. thesis “Identification of DNA molecules of chromosomal size in *Amoeba borokensis* by pulsed-field gel electrophoresis”.
 1991 – Shaglina E.G., M.Sc. thesis “Ultrastructure of the flagellate *Leptomonas jaculum* in the mid-gut of the bug *Leptomonas jaculum*”.

MEMBERSHIP IN PROFESSIONAL SOCIETIES

- 2007-present: President of the Protozoological Society affiliated with Russian Academy of Sciences
 1987-present: Russian representative at the International Commission on Protozoology
 2005-present: Member of the Qualification Council of the Zoological Institute RAS
 1993-present: Member of the Scientific Council of the Institute of Cytology RAS
 1987-2007: Member of Presidium of the Society of Protozoologists of Russia
 2006-2007: **Chairman** of the V European Congress of Protistology and XI European Conference on Ciliate Biology (July 23-27, 2007, St. Petersburg, Russia)

MEMBERSHIP IN EDITORIAL BOARDS OF INTERNATIONAL JOURNALS

- 2012-present: Editor-in-Chief, *PROTISTOLOGY*, An International Journal
 2007-2010: member of Editorial Board of *COMPARATIVE CYTOGENETICS*
 1999-2009: member of Editorial Board of *ACTA PROTOZOOLOGICA*
 1999-2011: member of Advisory Board of *PROTISTOLOGY*, An International Journal

TOTAL NUMBER OF PUBLICATIONS: 154

SELECTED PUBLICATIONS:

- Pozdnyakov I., Matantseva O., Negulyaev Y., Skarlato S. 2014.* Obtaining spheroplasts of armored dinoflagellates and first single-channel recordings of their ion channels using patch-clamping. *Marine Drugs*. 12 (9): 4743-4755; doi:10.3390/md12094743
- Popenko V.I., Potekhin A.A., Karajan B.P., Skarlato S.O., Leonova O.G. 2014.* The size of DNA molecules and chromatin organization in the macronucleus of the ciliate *Didinium nasutum* (Ciliophora). *Journal of Eukaryotic Microbiology*; doi: 10.1111/jeu.12161
- Mironova E.I., Telesh I.V., Skarlato S.O. 2014.* Ciliates in plankton of the Baltic Sea. *Protistology*. 8 (3): 81-124.
- Skarlato S.O. 2014.* Book Review – Hausmann K., Radek R. (Eds.). *Cilia and Flagella – Ciliates and Flagellates: Ultrastructure and cell biology, function and systematic, symbiosis and biodiversity*. Stuttgart: Schweizerbart Science Publishers, 2014. 299 p. *Protistology*. 8 (3): 125-127.
- Mironova E., Telesh I., Skarlato S. 2013.* Planktonic ciliates of the Neva Estuary (Baltic Sea): community structure and spatial distribution. *Acta Protozoologica*. 52 (1): 13-23.
- Matantseva O.V., Skarlato S.O. 2013.* Mixotrophy in microorganisms: Ecological and cytophysiological aspects. *Journal of Evolutionary biochemistry and physiology (Zhurnal Evolyutsionnoi biokhimii i fiziologii)*. 49 (4): 245-254.
- Leonova O.G., Karajan B.P., Ivlev Y.F., Ivanova J.L., Skarlato S.O., Popenko V.I. 2013.* Quantitative analysis of nucleolar chromatin distribution in the complex convoluted nucleoli of *Didinium nasutum* (Ciliophora). *Biological Research*. 46 (1): 69-74.
- Mironova E., Telesh I., Skarlato S. 2012.* Diversity and seasonality in structure of ciliate communities in the Neva Estuary (Baltic Sea). *Journal of Plankton Research*. 34 (3): 208-220.
- Pozdnyakov I.A., Skarlato S.O. 2012.* Dinoflagellate amphiesma at different stages of the life cycle. *Protistology*. 7 (2): 108-115.
- Schubert H., Feuerpfeil P., Marquardt R., Telesh I., Skarlato S. 2011.* Macroalgal diversity along the Baltic Sea salinity gradient challenges Remane's species-minimum concept. *Marine Pollution Bulletin*. 62: 1948-1956.
- Sokolova O.I., Demyanov A.V., Bowers L.C., Didier E.S., Yakovlev A.V., Skarlato S.O., Sokolova Y.Y. 2011.* Emerging microsporidian infections in Russian HIV-infected patients. *Journal of Clinical Microbiology*. 49 (6): 2102-2108.
- Telesh I.V., Schubert H., Skarlato S.O. 2011a.* Revisiting Remane's concept: evidence for high plankton diversity and a protistan species maximum in the horohalinicum of the Baltic Sea. *Marine Ecology Progress Series*. 421: 1-11 (FEATURE ARTICLE).

- Telesh I.V., Schubert H., Skarlato S.O. 2011b. Protistan diversity does peak in the horohaliniacum of the Baltic Sea: Reply to Ptacnik et al. (2011). *Marine Ecology Progress Series*. 432: 293-297.
- Smurov A.O., Podlipaeva Yu.I., Skarlato S.O., Goodkov A.V. 2010. Correlations between salinity-persistence of ciliate species and their constitutive heat shock protein of 70 kDa contents. *Tsitologiya*. 52 (12): 1041-1044.
- Sokolova O.I., Demyanov A.V., Bowers L.C., Didier E.S., Skarlato S.O., Sokolova Y.Y., Yakovlev A.V. 2011. Clinical and laboratory characteristics of microsporidiosis as an opportunistic infection in HIV patients. *HIV infection and immunosuppressive disorders*. 3 (3): 63-70.
- Telesh I., Postel L., Heerkloss R., Mironova E., Skarlato S.O. 2009. Zooplankton of the Open Baltic Sea: Extended Atlas. (BMB Publication No. 21). *Meereswissenschaftliche Berichte (Warnemunde)*. 76: 1-290 (ISSN 0939-396X).
<http://www.io-warnemuende.de/marine-science-reports.html>
- Mironova E.I., Telesh I.V., Skarlato S.O. 2009. Planktonic ciliates of the Baltic Sea (a review). *Inland Water Biology*. 2 (1): 13-24.
- Telesh I., Postel L., Heerkloss R., Mironova E., Skarlato S.O. 2008. Zooplankton of the Open Baltic Sea: Atlas. (BMB Publication No. 20). *Meereswissenschaftliche Berichte (Warnemunde)* 73: 1-251 (ISSN 0939-396X).
http://www.io-warnemuende.de/documents/mebe73_2008-telesh-lpostel.pdf
- Pimenov A.Yu., Skovorodkin I.N., Raikel I.B., Skarlato S.O. 2008. Transcriptional regulation macronuclear protein-coding genes in stichotrichous ciliates. *Tsitologiya*. 50 (10): 835-842.
- Popenko V.I., Karajan B.P., Leonova O.G., Skarlato S.O., Ivlev Y.F., Ivanova J.L. 2008. Three-dimensional structure of the ciliate *Didinium nasutum* nucleoli. *Molecular Biology*. 42 (3): 449-455.
- Beznoussenko G.V., Dolgikh V.V., Seliverstova E.V., Semenov P.B., Tokarev Y.S., Trucco A., Micaroni M., Giandomenico D.D., Auinger P., Senderskiy I.V., Skarlato S.O., Snigirevskaya E.S., Komissarchik Y.Yu., Pavelka M., De Matteis M.A., Luini A., Sokolova Y.Y., Mironov A.A. 2007. Analogs of the Golgi complex in microsporidia: structure and vesicular mechanisms of function. *Journal of Cell Science*. 120: 1288-1298.
- Frolov A.O., Goodkov A.V., Chystjakova L.V., Skarlato S.O. 2006. Structure and development of *Pelomyxa gruberi* sp. n. (Peloflagellata, Pelobiontida). *Protistology*. 4 (3): 227-244.
- Malysheva M.N., Frolov A.O., Skarlato S.O. 2006. Development of cyst-like cells of the flagellate *Leptomonas oncopelti* in the midgut of the hemipteran *Oncopeltus fasciatus*. *Tsitologiya*. 48 (9): 723-733.
- Pimenov A.Yu., Raikel I.B., Skovorodkin I.N., Podlipaeva Yu.I., Ammermann D., Skarlato S.O. 2006. *Stylonychia lemnae* as a model organism for studies of macronuclear minichromosomes of the ciliates. *Tsitologiya*. 48 (8): 619-635.
- Bobyleva N.N., Nassonova E.S., Skarlato S.O., 2005. The fine structure of chromatin in *Paranosema grylli* (Microsporida). *Tsitologiya*. 47 (5): 426-430.
- Nassonova E., Cornillot E., Metenier G., Agafonova N., Kudryavtsev B., Skarlato S., Vivares C.P. 2005. Chromosomal composition of the genome in the monomorphic diplokaryotic microsporidium *Paranosema grylli*: analysis by two-dimensional pulsed-field gel electrophoresis. *Folia Parasitol*. 52 (1/2): 145-157.
- Skarlato S.O. 2003. Weakly condensed chromosomes of Protozoa. St. Petersburg: SPbGPU publ. 41 p.

- Skarlato S.O., Bobyleva N.N. 2002. DNA-containing structures in the nucleus and cytoplasm of the *Crithidia* flagellates on the Miller-type spread preparations. *Tsitologiya*. 44 (5): 411-421.
- Sokolova Yu., Snigirevskaya E., Morzhina E., Skarlato S., Mironov A., Komissarchik Ya. 2001. Visualization of early Golgi compartment at proliferate and sporogenic stages of a microsporidian *Nosema grylli*. *J. Eukaryot. Microbiol.* 48 (suppl.): 86S-87S.
- Djomin S.Yu., Skarlato S.O., Prodeus T.V. 2001. Chromosome-like bodies of *Entamoeba histolytica*. *Tsitologiya*. 43 (11): 1080-1087.
- Sokolova Yu.Ya, Snigirevskaya E.S., Skarlato S.O., Komissarchik Ya.Yu., Mironov A.A. 2001. Unusual Golgi apparatus at the proliferative stage of microsporidian life cycle. *Doklady Biol. Sci.* 378: 290-293.
- Skarlato S.O. 1999a. Protozoology in St. Petersburg. Petersburg Academy of Science among the other Academies of the World. To 275-years of Foundation of Academy of Science. St. Petersburg: St. Petersburg Scientific Center Publishing House. 1: 267-274.
- Skarlato S.O. 1999b. Yuri Ivanovich Poljansky and Russian Protozoology. *Tsitologiya*. 41 (8): 742-744.
- Nasonova E. S., Yu. Ya. Sokolova, Skarlato S.O. 1998. Chromosomal DNA and the size of the genome of the microsporidian *Nosema grylli*. *Doklady Biol. Sci.* 361: 394-396.
- Skarlato S.O., Somova N.V., Rozanov Yu.M., Kudryavtsev B.N., Bobyleva N.N., Frolov A.O. 1998. Characteristic organization of the chromosomal apparatus of *Crithidia* sp. *Tsitologiya*. 40 (11): 991-1005.
- Sokolova Yu.Ya., Nasonova E.S., Somova N.V., Skarlato S.O. 1998. Ultrastructure of the nuclear apparatus and electrophoretic karyotype of the microsporidian *Nosema grylli* (Archezoa, Microspora) – an intracellular parasite of the cricket *Gryllus bimaculatus*. *Tsitologiya*. 40 (5): 407-416.
- Frolov A.O., Skarlato S.O. 1998. Unusual pattern of mitosis in the free-living flagellate *Dimastigella mimosa* (Kinetoplastida). *Protoplasma*. 201: 101-109.
- Frolov A.O., Malysheva M.N., Podlipaev., Skarlato S.O. 1997. Promastigotes of the trypanosomatids *Endotrypanum monterogei*, *Leishmania tarentolae* and *Phytomonas* sp.: A comparative electron microscope study of interphase and mitotic nuclei. *Tsitologiya*. 39 (4/5): 278-284.
- Somova N.V., Skarlato S.O., Frolov A.O. 1997. Chromosomes of free-living kinetoplastid flagellates. *Doklady Biol. Sci.* 357 (3): 414-416.
- Skarlato S.O., Lom J. 1997. Mitosis in the flagellate *Trypanoplasma borreli* (Kinetoplastidea: Bodonida). *European Journal of Protistology*. 33 (1): 77-86.
- Frolov A.O., Skarlato S.O. 1995. Fine structure and mechanisms of adaptation of lower trypanosomatids in hemipteran insects. *Tsitologiya*. 37 (7): P. 539-560.
- Shaglina E.G., Frolov A.O., Skarlato S.O. 1995. Ultrastructure of the parasitic flagellate *Leptomonas nabiculae* from the bug *Nabica flavomarginata*. *Tsitologiya*. 37 (1/2): 159-165.
- Bobyleva N.N., Skarlato S.O. 1994. Structural organization of the inactive chromatin of trypanosomatid flagellates from the genus *Crithidia*. *Doklady Akademii Nauk of Russia*. 339 (4): 551-554.
- Marakhova N.V., Sopina V.A., Skarlato S.O., Gromov D.B. 1993. Separation of chromosome-sized DNA from *Amoeba proteus* by transverse alternating field electrophoresis. *Doklady Akademii Nauk of Russia*. 330 (6): 794-796.

- Frolov A.O., Skarlato S.O. 1991. Description of *Leptomonas mycophilus* sp. n. (Trypanosomatidae) from the bug *Phytocoris* sp. (Miridae). *Parasitologiya*. 25 (2): 99-103.
- Frolov A.O., Skarlato S.O., Shaglina E.G. 1991. Morphology of cyst-like cells in the flagellate *Leptomonas jaculum*. *Tsitologiya*. 33 (10): 55-58.
- Marakhova N.V., Skarlato S.O., Frolov A.O., Tsouladze A.M. 1991. The molecular karyotype polymorphism in the lower trypanosomatids. *Tsitologiya*. 33 (10): 59-66.
- Skarlato S.O., Parshkova T.A., Frolov A.O. 1990. Electron microscope and molecular biology investigations of the nucleus in the lower trypanosomatids, *Blastocrithidia miridarum* and *Crithidia brevicula*. *Tsitologiya*. 32 (4): 317-324.
- Frolov A.O., Skarlato S.O. 1990. *In vitro* differentiation of cyst-like cells in *Leptomonas mycophilus*. *Tsitologiya*. 32 (10): 985-992.
- Frolov A.O., Skarlato S.O. 1990. The structure of rosette-like cell associations in the lower trypanosomatids. *Tsitologiya*. 32 (5): 455-461.
- Malysheva M.N., Skarlato S.O. 1989. Studies on the ultrastructural organization of *Leptomonas peterhoffi* (Trypanosomatidae) grown on liquid and solid culture media. *Tsitologiya*. 31 (3): 267-272.
- Frolov A.O., Skarlato S.O. 1989. Electron microscopical study of the flagellates *Leptomonas jaculum* in the midgut of a hemipteran, *Nepa cinerea*. *Parasitologiya*. 23 (5): 383-389.
- Skarlato S.O., Frolov A.O. 1988. Unusual way of the division in Trypanosomatidae. *Doklady Akademii Nauk SSSR*. 298 (3): 729-731.
- Frolov A.O., Skarlato S.O. 1988. Position and mode of attachment of *Blastocrithidia miridarum* in the digestive tract of *Adelphocoris quadripunctatus*. *Parasitologiya*. 22 (6): 481-487.
- Skarlato S.O. 1987. Fine-structural peculiarities of the nucleus of the parasitic flagellate *Trypanoplasma borreli* (Kinetoplastida) during the interphase and mitosis. *Doklady Akademii Nauk SSSR*. 293 (1): 220-221.
- Golemansky V.G., Skarlato S.O., Todorov M.T. 1987. A light- and electron-microscopical (SEM and TEM) study of *Microchlamys sylvatica* n. sp. (Rhizopoda: Arcellinida). *Archiv Protistenkd.* 1987. 134 (2/3): 161-167.
- Skarlato S.O., Lom J., Nohynkova E. 1987. Fine structural morphology of the nucleus of *Trypanosoma danilewskyi* (Kinetoplastida, Trypanosomatina) during mitosis. *Archiv Protistenkd.* 1987. 133 (1/2): 3-14.
- Frolov A.O., Skarlato S.O. 1987. Light- and electron microscopical study of *Leptomonas pyrrhocoris* Z. (Kinetoplastida, Trypanosomatidae). *Parasitologiya*. 21 (1): 3-9.
- Skarlato S.O., Malysheva M.N. 1987. Ultrastructure of giant multinucleate cells of the parasitic flagellate *Crithidia oncopelti* (Kinetoplastida). *Tsitologiya*. 29 (12): 1337-1342.
- Skarlato S.O., Makhlin E.E. 1983. Ultrastructural changes in the nuclei of amoebae which become non-viable due to a short-term stay of another amoeba strain nuclei in their cytoplasm. *Tsitologiya*. 25 (10): 1153-1158.
- Skarlato S.O. 1982. Electron microscope study of the micronuclei of the ciliate *Stentor coeruleus* during meiosis. *Protistologica*. 18 (3): 281-288.
- Raikhel N., Paulin J.J., Skarlato S.O. 1981. Mitosis of micronuclei during division and regeneration in the ciliate *Stentor coeruleus*. *The Journal of Protozoology*. 28 (1): 103-107.
- Skarlato S.O. 1979a. The nuclear apparatus of the ciliate *Stentor coeruleus* (Ciliophora, Heterotrichida) and its reorganization during conjugation. PhD thesis, Institute of Cytology Acad. Sci. USSR, Leningrad, 124 p.; suppl. 205 p.

- Skarlato S.O. 1979b. An ultracytochemical study of the macronucleus of the ciliate *Stentor coeruleus*. Tsitologiya. 21 (3): 292-294.
- Skarlato S.O. 1978a. Fine structure of anlagen of the macronucleus of the infusoria *Stentor coeruleus*. Doklady Akademii Nauk SSSR. 242 (5): 1192-1193.
- Skarlato S.O. 1978b. Electron microscope study of changes in the macronucleus of the ciliate *Stentor coeruleus* during conjugation. Tsitologiya. 20 (6): 607-611.
- Skarlato S.O. 1978c. Fine structure of the contact area of conjugating *Stentor coeruleus* (Ciliata, Heterotrichida). Tsitologiya. 20 (2): 204-206.
- Skarlato S.O. 1977. Fine structure of the nuclear apparatus of the ciliate *Stentor coeruleus* Ehrenberg (Heterotrichida). Tsitologiya. 19 (5): 478-483.