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Postdoctoral Scientist  
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**3. Education:**

- 2002 – 2007 M.S. Moscow State Academy of Veterinary Medicine and Biotechnology named after K.I. Skryabin, Moscow, Russia.  
Specialization: Biochemistry.  
Master's degree thesis: "The variability of *hsp70* gene cluster in *Drosophila virilis* species group". Defended with Honors.
- 2007 – 2011 PhD Molecular Basis of Biological Adaptation Laboratory, Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia. Defended PhD on March 17, 2011.  
Specialization: Molecular biology.  
Ph.D. thesis: "The peculiarities of genetic system controlling the thermal adaptation of several Diptera species", under Olga G. Zatsepina, ScD.

**4. Professional Appointments:**

- 2011 – Present Postdoctoral Scientist Arkhipova Lab, Josephine Bay Paul Center for Comparative Molecular Biology and Evolution, Marine Biological Laboratory, Woods Hole, MA.  
**Research activities:** The investigation of rotifer telomere-associated mobile genetic elements and the structure and function of reverse transcriptase related gene (*rvt*) from *Herpetosiphon aurantiacus* (Chloroflexi, Bacteria).
- 2009 – Present Junior researcher Molecular Basis of Biological Adaptation Laboratory, Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia.  
**Research activities:** The investigation of molecular mechanisms of thermotolerance in different species of Diptera and the role of mobile genetic elements in speciation.

2007 – 2011	PhD student	<p>Molecular Basis of Biological Adaptation Laboratory, Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia.</p> <p><b>Research activities:</b> The investigation of molecular mechanisms of thermotolerance in different species of Diptera.</p>
2006 – 2007	Graduate Student	<p>Molecular Basis of Biological Adaptation Laboratory, Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia.</p> <p><b>Research activities:</b> The investigation of thermotolerance in different <i>Drosophila</i> species.</p>

## 5. Publications / Presentations:

### a. Chapters in books

D.G. Garbuz, O.G. Zatssepina, **I. Yushenova**, A. Przhiboro, M.B. Evgen'ev. Different Mechanisms Responsible for Stress Resistance Operate in the Same Insect Order (Diptera). In: Handbook of Molecular Chaperones: Roles, Structures and Mechanisms. Nova Pub. 2010. 479-495.

### b. Refereed journal articles

N.V. Rozhkov, N.G. Schostak, E.S. Zelentsova, **I.A. Yushenova**, O.G. Zatssepina, M.B. Evgen'ev. 2013. Evolution and dynamics of small RNA response to a retroelement invasion in *Drosophila*. *Mol Biol Evol.* 30(2): 397-408.

D.G. Garbuz\*, **I.A. Yushenova\***, O.G. Zatssepina, A.A. Przhiboro, B.R. Bettencourt, M.B. Evgen'ev. Organization and evolution of *hsp70* clusters strikingly differ in two species of Stratiomyidae (Diptera) inhabiting thermally contrasting environments. *BMC Evol Biol.* 2011. 11: 74. (\*co-first authors)

**I.A. Yushenova**, O.G. Zatssepina, A.A. Przhiboro, M.B. Evgen'ev, D.G. Garbuz. A comparative analysis of the *hsp70* genes system in two species of the family Stratiomyidae (Diptera). *Moscow University Biological Sciences Bulletin.* 2010. 65(4): 181-183.

D.G. Garbuz, **I.A. Yushenova**, M.B. Evgen'ev, O.G. Zatssepina. Comparative analysis of *hsp70* gene cluster in *Drosophila virilis* species group. *Mol Biol (Mosk).* 2009. 43(1): 44-52.

D.G. Garbuz, O.G. Zatssepina, A.A. Przhiboro, **I. Yushenova**, I.V. Guzhova, M.B. Evgen'ev. Larvae of related Diptera species from thermally contrasting habitats exhibit continuous up-regulation of heat shock proteins and high thermotolerance. *Mol. Ecol.* 2008. 17(21): 4763-77.

### c. Non-refereed journal articles

**I.A. Yushenova**, O.G. Zatssepina. The investigation of mechanism termotolerance in species, inhabiting extreme environments. *Issues of physico-chemical biology in veterinary medicines: Collection of the scientific works.* Moscow: MSAVMB press. 2009. 106-116.

### d. Abstracts

E.A. Gladyshev, F. Rodrigues, **I.A. Yushenova**, and I.R. Arkhipova. Use of phylogenetic approaches to study horisontal gene trasfer and evolutionary historyof gene families. *Molecular Phylogenetics: Contributions to the 3<sup>rd</sup> Moscow International Conference “Molecular Phylogenetics”*

(Moscow, Russia, July 31 – August 4, 2012) / Moscow: TORUS PRESS, 2012. 13-14.

I.R. Arkhipova, **I.A. Yushenova**. Two Types of Penelope-like Elements (PLEs) in Rotifers of the Class Bdelloidea. 3rd International Congress on Transposable Elements (Saint Malo, France, April 21-24, 2012).

I.R. Arkhipova, **I.A. Yushenova**. Two Types of Penelope-like Elements (PLEs) in the Phylum Rotifera. 3rd International Conference/Workshop “Genomic Impact of Eukaryotic Transposable Elements” (The Asilomar Conference Center, Pacific Grove, CA, USA February 24-28, 2012).

**I.A. Yushenova**, K. Yan, I.R. Arkhipova. Genomes of monogonont rotifers contain both telomere-associated (endonuclease-deficient) and conventional (endonuclease-containing) *Penelope*-like elements. 3<sup>rd</sup> Northeast Mobile DNA Meeting (MBL, Woods Hole, MA, September 1-3, 2011).

**I.A. Yushenova**, O.G. Zatssepina, A.A. Przhiboro, M.B. Evgen'ev, D.G. Garbuz. Analysis nucleotide and aminoacid sequences *hsp70* in two *Stratiomyidae* (Diptera) species. Biology – The Science of XXI age: 15-th Puschino International school-conference young scientist, (Pushchino, April 18 – 22, 2011). 28.

**I.A. Yushenova**, O.G. Zatssepina, A.A. Przhiboro, M.B. Evgen'ev, D.G. Garbuz. The comparative analysis of the *hsp70* genes clusters in the Diptera species, dwelling in contrasty environments. IV International workshop of young science from molecular genetics “Genomics and cell biology” (Zvenigorod, Nov 29 – Dec 3 2010). 228 – 229.

D.G. Garbuz, **I.A. Yushenova**, M.B. Evgen'ev, O.G. Zatssepina. Diversity of thermal adaptation mechanisms for species dwelling in unfavorable climatic condition. XXI Congress of The Physiological Society named after I.P.Pavlov. Theses of reports. – M. – Kaluga: OOO “Best-print”. 2010. 137.

**I.A. Yushenova**, O.G. Zatssepina, A.A. Przhiboro, M.B. Evgen'ev, D.G. Garbuz. The investigation of molecular mechanisms expression HSP70 in species, dwelling in extreme natural condition. Biology – The Science of XXI age: 14-th Puschino International school-conference young scientist, (Pushchino, April 19 – 23, 2010). 205.

**I.A. Yushenova**, O.G. Zatssepina, A.A. Przhiboro, M.B. Evgen'ev, D.G. Garbuz. A comparative analysis of the *hsp70* genes system in two species of the family Stratiomyidae (Diptera). Molecular Phylogenetics: Thesis of the 2<sup>nd</sup> Moscow International Conference “Molecular Phylogenetics” (Moscow, Russia, May 18-21, 2010). 189.

O.G. Zatssepina, D.G. Garbuz, Zelentsova E.S., Shilova V.Iu., **I.A. Yushenova**. The investigation of mechanisms thermotolerance: the evolution of genetic locuses and mutagenesis. Contributions to the Conference: «Biodiversity and genepool's dynamics». Moscow, 2008. 132-135.

#### e. Work in progress

I.R. Arkhipova, **I.A. Yushenova**. 2013. Endonuclease-containing *Penelope* retrotransposons in the bdelloid rotifer *Adineta vaga* exhibit unusual structural features and play a role in expansion of host gene families. In preparation.