



Natalia V. Shemyakina

CURRICULUM VITAE

Personal Information

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Educational improvement courses

2011 **The certificate of improvement of professional skills: Medical (clinic) psychology.** Course lasted for 252 hours, St. Petersburg Medical Academy of Postgraduate Studies, St.Petersburg, Russia
2010 **The certificate of improvement of professional skills: Variety of art-therapy approaches.** Course lasted for 88 hours. Institute of practical psychology (IMATON), coach - A.I.Kopitin, St. Petersburg, Russia
2007 **The certificate of improvement of professional skills: bases of clinical neurophysiology (included clinical EEG, acquaintance with fMRI technique).** Course lasted for 144 hours, St.Petersburg science-research psychoneurological Institute named after V.M.Bekhterev, St.Petersburg, Russia

Education

2011 - 2013 **Medical psychology,** St.Petersburg Russian State Pedagogical University. Theme of Diploma: Coping mechanisms in adolescents with schizophrenia spectrum disorders.
2007 **Ph.D. in biological science (cognitive neuroscience).**
Theme: influence of evolved emotional states on verbal creative task performance.
2000 – 2003 **Post-graduate student** in group of neurophysiology of thinking and consciousness, supervisor - academician Bechtereva N.P. Institute of the Human Brain. Russian Academy of Sciences, St.Petersburg, Russia
2000 **Equivalent to the Master's degree** Specialty "biology and chemistry". Russian State Pedagogical University named after A.I. Herzen, St. Petersburg, Russia
Theme of Diploma – Particularities of High nervous activity of pupils with different hemisphere dominance. Tutor – Smirnova T.A., PhD, assistant professor

Job experience

- 2013 - to pres** **Staff researcher** in Laboratory of Comparative Ecological and Physiological Studies. Sechenov Institute of Evolutionary Physiology and Biochemistry (IEPhB RAS), Russian Academy of Sciences, St. Petersburg Russia
- 2008 - to pres** **Assistant professor (Dozent).** Courses of lectures on Physiology of high nervous activity, Psychophysiology, Psychogenetics and Neuropsychology and Psychosomatics for students of psychological faculty of IVESEP, St. Petersburg, Russia
- 2005 - 2008** **Senior lecturer.** Courses of lectures on Anatomy, Physiology of high nervous activity, Psychophysiology for students of psychological faculty of IVESEP, St. Petersburg, Russia
- 2003 - 2013** **Staff researcher** in group of neurophysiology of thinking and consciousness. N.P. Bechtereva Institute of the Human Brain. Russian Academy of Sciences St. Petersburg Russia
- 2004** **Teacher of ecology** – Water Channel of St. Petersburg. Kid's ecology club.

Scientific interests:

psychophysiology of creativity in norm and pathology (schizophrenia), memory (errors and insights) and spontaneously induced emotions, as concurrent activity during memory-retrieval and creative processes; neurochemistry of brain; maturation of the brain, spatiotemporal brain imaging: EEG/ERP, PET, fMRI, MEG

International experience

Workshops:

- NCoE meeting June 2010, St.Petersburg, Russia;
- Workshop "Creativity and the Brain", September 2010, Bristol, UK (invited speaker)
- PENS WICN Summer School September 2008, Bangor, Wales, UK (supported by PENS travel grant);
- IBRO Workshop "Complex neural networks. From synaptic transmission to seeing the brain in action." January 2008, Debrecen, Hungary (supported by IBRO travel grant);
- NCoE meeting November 2007, Stockholm, Sweden;
- 3rd NORFA Workshop, August 2005, Bergen, Norway;
- 2nd NORFA Workshop, August 2004, Turku Finland;
- The 7th Russian-Finish Workshop «Neuroscience», January 2003, Twarmmine, Finland (supported by CIMO grant);
- "Experimental methods for brain studies in health and disease" Czech, Prague, October 2001 (supported by IBRO travel grant);

Conferences:

- 13 European Congress of Psychology, July 2011, Sweden, Stockholm (oral presentation);
- 51 Annual Meeting of the Society for Psychophysiological Research, September 2011, Boston, USA (poster presentation);
- Human Brain Mapping, June 2010, Barcelona, Spain (poster presentation);
- 49th Annual Meeting of the Society for Psychophysiological Research, September 2009, Berlin, Germany (poster presentation)
- C.I.A.N.S conference, October 2008, Smolenice, Slovakia (oral presentation);
- 14th World Congress of International Organization of Psychophysiology "The Olympics of the brain, September 2008, St.Petersburg, Russia (oral presentation);
- C.I.A.N.S conference, October 2007, Brno, Czech (oral presentation);
- Third International Interdisciplinary Congress «Neuroscience for medicine and psychology», June 2007, Sudak, Ukraine (oral presentation)
- 13th World Congress of International Organization of Psychophysiology, September, 2006, Istanbul, Turkey (poster presentation);
- C.I.A.N.S conference, June 2005 Bratislava, Slovakia (oral presentation);

- The 1st International Conference "Creativity-multi-faced view", September, 2005, Moscow, Russia (poster presentation);
- The 1st International Physiological Congress of Commonwealth of Independent States, September 2005, Dagonis, Russia (oral presentation);
- The the 2nd International Conference dedicated to A.R. Luria, September, 2002, Moscow, Russia (poster presentation);

Reviewing experience:

- for Journals: Neuroscience letters (Elsevier), Human Physiology (Russian); *Activitas Nervosa Superior* (Czech);
- for conferences: HBM meeting 2010, Barcelona, Spain; HBM meeting 2011, Québec, Canada.

Other merits

2011-2012	personal grant of Russian Humanitarian scientific foundation 11-36-00324a2 "investigation of insight brain mechanisms"
2010	Prize Winner of the "Post-doc's projects competition", organised by the Russian Government and Russian Ministry of Science and Education in St.Petersburg, Russia
2000-2013	participation in researches supported by Russian Government Grants for leading scientific schools of Russia (academician N.P. Bechtereva's school of thought), Moscow, Russia
2006-2008	participation in project RFBR N 06-04-48797a "Investigation of mutual relations between creativity factor and task complexity factor in brain creative processes", supported by the Russian Foundation for Basic Research, Moscow, Russia
2003-2005	participation in project RFBR N 03-04-49394a "Brain organization of creativity", supported by the Russian Foundation for Basic Research, Moscow, Russia
2003-2005	participation in project "Brain organization of emotional reactions", supported by the Russian Humanitarian Independent Foundation, Moscow, Russia
2002, 2003	Prize Winner of the "Postgraduate student project competition", organised by the Russian Government and Russian Ministry of Education, St.Petersburg, Russia

Scientific societies

The International Brain Research Organization (IBRO), Inter-regional association of cognitive researches (in Russian MAKI), Art-therapy community (St.Petersburg, Russia).

Languages

Russian (native), English (fluently), German (able to explain necessary things), Spanish (read with vocabulary)

Personal characters

Highly motivated, creative, conscientious, have a broad outlook, responsible, confidential, friendly, communicative, easy doing team work, easy working in time trouble.

Professional skills

Experimental skills	behavioral testing, planning and carrying out psychophysiological investigations on memory, evoked emotions, creativity. Quantitative EEG data analysis (spectral power, coherence, ICA), ERP. PET data analysis. Interpretation of psychological and physiological data. Work with healthy subjects and patients (depressed and schizophrenic).
Software skills	Fluent with Windows Operating systems, aquatinted with Mac, Linux, Programming experience using: HTML, PHP, MySQL, MATLAB (for SPM and EEGLAB). Programming in an experimental context: Presentation (Neurobehavioural Systems Inc., USA),

PsyTask (Mitsar, Russia)

E-prime

AutoIt

Software for experimental registration and data analysis:

WinEEG soft package <http://www.mitsar-medical.com>),

able to work in EEGLAB,

Statistica, SPSS, Statistical Parametric Mapping (SPM99, SPM5)

for EEG and PET data

Main publications

Full-size papers

1. Bechtereva N.P., **Shemyakina N.V.**, Starchenko M.G., Danko S.G., Medvedev S.V. "Error detection. History, present and prospects" article (pp.378-397) in the re-edition of the book of N.P. Bechtereva Healthy and ill brain// eds. Medvedev S.V., Moscow-AST; St. Petersburg -SOVA, 2010, 399 p. (in Russian)
2. **Shemyakina N.V.**, Nagornova Zh.V., Ponomarev V.A. Independent component analysis for creative versus non-creative task performance // in proceedings of the WSEAS international conference on medical physiology, Cambridge, UK, February 23-25, 2010, pp.222-228
3. S. G. Danko, **N. V. Shemyakina**, Zh. V. Nagornova, M. G. Starchenko Comparison of subjective complexity and creative activity influences on spectral characteristics of EEG//Human physiology,2009, - Vol. 35, No. 3, p. 381, PMID: 19534413
4. **N. V. Shemyakina**, M. G. Starchenko, Zh. V. Nagornova Creative thinking and integrative neurophysiology // chapter in the book Topics in Higher Brain Functions eds F.Jagla and I.Richansky, Comenius University, 2008, Bratislava, 9-35
5. **N. V. Shemyakina**, S. G. Danko, Zh. V. Nagornova, M. G. Starchenko, and N. P. Bechtereva Changes in the Power and Coherence Spectra of the EEG Rhythmic Components during Solution of a Verbal Creative Task of Overcoming a Stereotype // Human Physiology, 2007. - Vol. 33, No. 5, - p. 524, PMID: 18038659
6. **N. V. Shemyakina** and S. G. Dan'ko Changes in the Power and Coherence of the β_2 EEG Band in Subjects Performing Creative Tasks Using Emotionally Significant and Emotionally Neutral Words// Human Physiology, 2007. - Vol. 33, No. 1, -p.20, PMID: 17361603
7. Bechtereva N.P., **Shemyakina N.V.**, Starchenko M.G., Danko S.G., Medvedev S.V.. Error detection mechanisms of the brain: background and prospects. Int J Psychophysiol. 2005 58 (2-3) -p. 227-234, PMID: 16169106
8. S. G. Danko, N. P. Bechtereva, L. M. Kachalova, **N. V. Shemyakina**, and M. G. Starchenko Electroencephalographic Correlates of Brain States during Verbal Learning: I. Characteristics of EEG Local Synchronization // Human Physiology, 2005. - Vol. 31, No. 5, - p. 504, PMID: 16250502
9. S. G. Danko, N. P. Bechtereva, L. M. Kachalova, **N. V. Shemyakina**, and M. G. Starchenko Electroencephalographic Correlates of Brain States during Verbal Learning: II. Characteristics of EEG Spatial Synchronization // Human Physiology , 2005. - Vol. 31, No. 6. - p.623, PMID: 16366145
10. S. G. Danko, N. P. Bechtereva, L. V. Antonova, and **N. V. Shemyakina** Effect of the Personality Component on the Electroencephalographic Correlates of Induced Emotional states // Human Physiology, 2004. - Vol. 30, No. 6. -p.729, PMID: 15624733
11. **N. V. Shemyakina** and S. G. Dan'ko Influence of the Emotional Perception of a Signal on the Electroencephalographic Correlates of Creative Activity // Human Physiology, 2004. - Vol. 30, No. 2 - p.145, PMID: 15150971
12. S. G. Danko, N. P. Bechtereva, **N. V. Shemyakina**, and L. V. Antonova Electroencephalographic Correlates of Mental Performance of Emotional Autobiographic and Scenic Situations: II. Characteristics of Spatial Synchronization // Human physiology 2003. - Vol. 29, No. 3. - p.685, PMID: 12845776
13. S. G. Danko, N. P. Bekhtereva, **N. V. Shemyakina**, and L. V. Antonova Electroencephalographic Correlates of Mental Performance of Emotional Personal and Scenic Situations: I. Characteristics of Local Synchronization // Human Physiology, 2003. - Vol. 29, No. 6. - p.263, PMID: 14730930

14. **Shemyakina N.V.** Brain and Learning // Proceedings of students scientific society of Russian State Pedagogical University named after A.I. Herzen, 2001, issue.2, p.33 (in Russian)

Abstracts

15. N.P.Bechtereva, **N.V. Shemyakina**, S.G. Danko, M.G. Starchenko Creative thinking, error detection and attention // Int J Psychophysiol – 2008 vol 69, -P. 179
16. S.G. Danko, **N.V. Shemyakina**, Zh.V.Nagornova, N.P.Bechtereva, Subjective task complexity and neurophysiological correlates of verbal and figurative mental activities // Int J Psychophysiol – 2008 vol 69, -P. 169
17. **Shemyakina N.V** PET study of verbal creativity in different evolved emotional conditions//book of abstracts International C.I.A.N.S conference, Bratislava Slovakia - 2005. –P. 72
18. S.V. Medvedev, N.P. Bechtereva, S.G. Danko, M.G. Starchenko, **N.V. Shemyakina**, S.V. Pakhomov PET and EEG studies of brain maintenance of verbal creative activities // Int. J Psychophysiol. – 2004. Vol.54. -P. 34
19. **N.V. Shemyakina**, Danko S.G. Creative processes and emotions: an attempt to compare the impacts on cortex states // Int. J Psychophysiol. - 2004. –Vol.54. –P. 35-36
20. **N.V. Shemyakina** Exploring the role of evolved emotional background for creativity processes using EEG method // Proceedings of 4th Conference of the Czech Neuroscience Society, Prague, 26-27 Oct. 2001, -P. 143