

Maria A. Nazarova MD, PhD

Personal information:

Date of birth: 20.07.1987

Languages: Russian (mother tongue), English (excellent), French (intermediate), Italian (beginner), Spanish (beginner), German (beginner)

Children: one daughter (3.5 years old)

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<https://scholar.google.ru/citations?user=hDu65DsAAAAJ&hl=ru>

Professional experience

Current position:

- *12.01.2016-present*: **Research fellow**, Centre for Cognition & Decision Making, Institute of Cognitive Neuroscience, **National Research University Higher School of Economics (HSE)**, Moscow, Russia
- *01.10.2018-present*: **Leading research fellow**, Federal State Budgetary Institution «**Federal center of brain research and neurotechnologies**» of the Federal Medical Biological Agency Moscow, Russia

Work Experience:

- *01.05.2017 – 31.05.2018*: **Consultant**, Rehabilitation center “April”, Moscow
- *04.03.2014-11.01.2016*: **Junior research fellow**, Centre for Cognition & Decision Making, **HSE**, Moscow
- *01.08.2011-15.03.2017*: **Junior research fellow**, Department of neurorehabilitation, **Research Centre of Neurology**, Moscow

Education history including selected fellowships

- *25.11.2015*: **PhD in Neurology**, Research Center of Neurology of Russian Academy of Med. Sciences (Moscow), Doctoral thesis “**Multimodal assessment of the motor system reorganization after ischemic hemispheric stroke: MRI-TMS study**” (in Russian)
- *01.08.2011 – 25.11.2015*: **PhD student**, Department of neurorehabilitation, Research Centre of Neurology, Moscow
- *01.10.2012 – 01.12.2013*: **Fulbright visiting research fellow**:
 - Berenson-Allen Center for Noninvasive Brain Stimulation, BIDMC, **Harvard Medical School** (Boston, MA, US);
 - Fetal-Neonatal Neuroimaging & Developmental Science Center, BCH, **Harvard Medical School** (Boston, MA, US)
- *14.04.2012-15.07.2012*: **EFNS educational fellowship**, **BioMag Laboratory**, **Helsinki University Hospital** (Helsinki, Finland)
- *01.08.2009 – 31.07.2011*: **Neurology residency** in **Research Center of Neurology** of Russian Academy of Med. Sciences (Moscow). Mark for the final examination: 5 (excellent)
- *01.09.2003 – 31.07.2009*: **Specialist “General Medicine”**, **Lomonosov Moscow State University (MSU)**, Faculty of Fundamental Medicine. Graduated with honors
- *01.09.2005 – 31.07.2009*: **Specialist “Teacher of biology”**, **MSU**, Faculty of Educational Studies.

Teaching experience

- *2016-today*: teaching “Anatomy and physiology of the nervous system” (1st year bachelors of Psychology, HSE)
- *2015-today*: participating in teaching “Digital Signal Processing and Neuroimaging Techniques” (Master’s program "Cognitive sciences and technologies: from neuron to cognitions”, HSE)
- *2014 – 2015*: participation in teaching “Neuroimaging Techniques” & Research Seminar "Cognitive psychology: fundamental and applied aspects" (Master’s program "Cognitive sciences and technologies: from neuron to cognition”, HSE)

- 2010 – 2011: teaching a course at the Faculty of Fundamental Medicine, MSU «Experimental models in medicine and biology. Principles of scientific data analysis»;
- 2009 – 2010: biology teacher at school № 192

Supervisory experience

Supervision of PhD, master and bachelor students (currently 1 PhD, 2 master and 2 bachelor students)

Professional involvement

Invited reviewer for the journals: *Frontiers in Human Neuroscience*; *NeuroImage: Clinical*, *European Journal of Neuroscience*; *Neuromuscular Diseases* (Rus.); *The Russian Journal of Cognitive Science* (Rus.)

Peer-review publications

Citations in Google Scholar: 454; h-index by Google Scholar: 10

A list of exemplary peer-reviewed publications with the amount of citations per each:

1. **Nazarova M.**, Novikov P., Ivanina E., Kozlova K., Dobrynina L., Nikulin V. TMS cortical mapping of multiple muscles: absolute and relative test-retest reliability. **BioRxiv**, 2020 (under revision in *Human Brain Mappings* journal).
2. **Nazarova M.**, Novikov P., Nikulin V., Ivanova G. Diagnostic capabilities of transcranial magnetic stimulation to predict motor recovery after a stroke. **Neuromuscular Diseases** (Rus.), 2020.
3. **Nazarova M.**, Kulikova S., Piradov M., Limonova A., Dobrynina L., Kononov R., Nikulin V. Multimodal DTI-TMS assessment of the motor system in patients with chronic ischemic stroke. **BioRxiv**, 2019 (under revision in *Stroke* journal) (1 citation, 0 – without self-citation).
4. Feurra M., Blagoveshchensky E., Nikulin V., **Nazarova M.**, Lebedeva A., Pozdeeva D., Rossi S. State-Dependent Effects of Transcranial Oscillatory Currents on the Motor System during Action Observation. **Scientific Reports**, 2019 (2 citations without self-citation).
5. Ovadia-Caro S., Khalil A., Sehm B., Villringer A., Nikulin V., **Nazarova M.** Predicting the Response to Non-invasive Brain Stimulation in Stroke. **Frontiers in Neurology**, 2019 (5 citations, 2 - without self-citation).
6. Blagovechtchenski E., Agranovich O., Kononova Y., **Nazarova M.**, Nikulin V. Perspectives for the Use of Neurotechnologies in Conjunction With Muscle Autotransplantation in Children. **Frontiers in Neuroscience**, 2019.
7. Novikov P.*, **Nazarova M.***, Nikulin V. TMSmap – software for quantitative analysis of TMS mapping results. **Frontiers in Human Neuroscience**, 2018 (6 citations, 3 – without self-citation).
8. Blagoveschenskiy E., Agranovich O., Kononova E., Baidurashvili A., **Nazarova M.**, Shestokova A., Gabbasova E., Nikulin V. Characteristics of electrophysiological activity of the cerebral cortex in children with arthrogryposis **Neuromuscular Diseases** (Rus.), 2018.
9. Kulikova S., Nikulin V., Dobrynina L., **Nazarova M.** Possible Sensory Interpretation of Alternate Motor Fibers Relating to Structural Reserve during Stroke Recovery. **Frontiers in Neurology**, 2017 (6 citations, 3 – without self-citation).
10. Shpektor A., **Nazarova M.**, Feurra M. Effects of Transcranial Alternating Current Stimulation on the Primary Motor Cortex by Online Combined Approach with Transcranial Magnetic Stimulation, **Journal of Visualized Experiments**, 2017 (5 citations, 0 – without self-citation).
11. Klochkov A., Khizhnikova A., **Nazarova M.**, Chernikova L. Pathological Upper Limb Synergies of Poststroke Patients. **Zh Vyssh Nerv Deiat I P Pavlova** (Rus.), 2017.
12. **Nazarova M.**, Blagoveschenskiy E., Nikulin V., Mitina M. Transcranial magnetic stimulation with electroencephalography: methodology, applications for research and clinics. **Neuromuscular Diseases** (Rus.), 2017 (2 citations, 1 – without self-citation).
13. Pitkänen M., Kallioniemi E., Julkunen P., **Nazarova M.**, Nieminen J., Ilmoniemi R. Minimum-Norm Estimation of Motor Representations in Navigated TMS Mappings. **Brain Topography**, 2017 (10 citations, 7 – without self-citation).

14. Fedele T., Blagoveshchensky E., **Nazarova M.**, Iscan Z., Moiseeva V., Nikulin V. Long-Range Temporal Correlations in the amplitude of alpha oscillations predict and reflect strength of intracortical facilitation: Combined TMS and EEG study. **Neuroscience**, 2016 (14 citations, 7 – without self-citation).
15. Iscan Z.*, **Nazarova M.***, Fedele T., Blagoveshchensky E., Nikulin V. Pre-stimulus alpha oscillations and inter-subject variability of motor evoked potentials in single- and paired-pulse TMS paradigms. **Frontiers in Human Neuroscience**, 2016 (24 citations, 21 – without self-citation).
16. **Nazarova M.**, Blagovechtchenski E. Modern Brain Mapping–What Do We Map Nowadays? **Frontiers in psychiatry**, 2015 (8 citations, 6 – without self-citation).
17. Butorina, Prokofyev A., **Nazarova M.**, Litvak V., Stroganova T. The mirror illusion induces high gamma oscillations in the absence of movement. **NeuroImage**, 2015 (18 citations, 15 – without self-citation).
18. Debette S....**Nazarova M.**...Dallongeville J. for the CADISP group: Common variation in PHACTR1 is associated with susceptibility to cervical artery dissection. **Nature Genetics**, 2014 (143 citations in total).
19. Papadelis C., Ahtam B., **Nazarova M.**, Nimec D., Synder B., Grant P.E., Okada Y. Cortical Somatosensory Reorganization in Children with Spastic Cerebral Palsy: A Multimodal Neuroimaging Study. **Frontiers in Human Neuroscience**, 2014 (62 citations, 54 – without self-citation).

International scientific congresses participation (total>30). Several exemplary scientific abstracts of the last year conferences relevant for the current project

- **Nazarova M.**, Ivanina E., Asmolova A., Ivanov M., Novikov P., Nikulin V. Within-limb somatotopy of excitatory and inhibitory processes probed by paired pulse TMS–Preliminary results. **Clinical Neurophysiology 2020**
- Tugin S., Souza V., **Nazarova M.**, Nieminen J., Novikov P., Tervo A., Lioumis P., Nikulin V., Ilmoniemi R. Effect of stimulus orientation and intensity on short-interval intracortical inhibition (SICI) and facilitation (SICF). **Clinical Neurophysiology 2020**
- Novikov P. , Tugin S., **Nazarova M.**, Nieminen J , Nikulin V., Ilmoniemi R. Fast motor mapping with 2-channel multi-locus TMS, **poster presentation at BrainStim 2020**
- **Nazarova M.**, Tugin S., Novikov P., Tervo T., Souza V., Lioumis P., Nieminen J., Nikulin V., Ilmoniemi R. Probing interhemispheric inhibition for lower limbs with multi-locus TMS 3,4 **FENS 2020**
- Kozlova K., Mitina M., Nikiforova E., Ivanov M., Novikov P., Nikulin V., **Nazarova M.** Motor cortex interhemispheric interactions’ somatotopy – hypothesis and pilot study, **poster presentation BCI Samara 2020** (accepted)
- Mitina M., Nikulin V., Kulikova S., Ushakov V., Kartashov S., Blagoveshchensky E., Novikov P., Gorin A., **Nazarova M.** Variability and interhemispheric asymmetry of the responses to paired-coil TMS of the primary motor cortex 2019, **Clinical Neurophysiology 2019**

Book chapters

- **Nazarova M.**, *TMS motor mapping* chapter in the textbook “Methodology of TMS for neurology and psychiatry” (Rus.) (in print)
- **Nazarova M.**, Blagoveschenskiy E., Nikulin V. *TMS-EEG methodology and application* chapter in the textbook “Methodology of TMS for neurology and psychiatry” (Rus.) (in print)
- **Nazarova M.** *Mirror visual feedback – mirror therapy in neurorehabilitation*, book chapter in the textbook “Rehabilitation in neurology, innovations in neurorehabilitation” (Rus.)

Software registration

- Kinemalyzer software. **Nazarova M.**, Novikov P., Nikulin V. Registration # 2020613070, 2020/3.
- TMSphi neuronavigation software. Novikov P., Reshetnikov M., **Nazarova M.**, Gribov D., Nikulin V. Registration # 20206114932020/2.

• TMSmap software for analysis of TMS mapping results. Novikov P., **Nazarova M.** Registration # RU2016614899, 2016/5/11.

Organization of international conferences

• Organizer of the session “Individualization of brain stimulation” at all-Russian conference with international participation “Physical and rehabilitation medicine” 17-18.12.2020, Moscow, Russia (invited speakers included prof. Ilmoniemi and Dr. Sehm)

• Co-organizer of the workshop “Digital technologies in the modern neurology” 07-08.12.2019, Perm, Russia

• Part of the program committee of “The International Conferences BCI: Science & Practice” 2019, 2020, Samara, Russia

• Invited coach for a school “5th Science Factory: TMS–EEG Summer School and Workshop” 02-10.09.2017, Aalto University, Helsinki, Finland

• Co-organizer of the annual international school for young scientists in HSE “Active and passive methods of brain investigation” (organizing, lecturing, making TMS, tES and TMS-EEG hand-on sessions) 2015-2019, HSE, University, Moscow, Russia

Some exemplary scientific/educational visits of the last 5 years relevant for the project

• *19.08.2019-23.08.2019* **ESO Stroke Summer School**, Biomedicum, **HUS**, Helsinki, Finland

• Recent **visits to MPI CBS:**

- *17.09.2018-25.10.2018*

- *02.09.2017-10.09.2017*

• Recent visits to the **BioMag laboratory, Aalto University:**

- *24.08.2019-30.08.2019*

- *1 week in May 2019*

- *29.03.2019-08.04.2019*

- *13.08.2018-19.08.2018*

- *2 weeks in August 2016* (Erasmus plus grant)

• **TMS-EEG school, Aalto University:**

- *05.06.2016-11.06.2016*

- *08.09.2014-13.09.2014*

Grants holding as a supervisor

- *2019-2021:* RFBR grant holder “Investigation of the motor cortex interhemispheric interactions’ somatotopy and their non-invasive neuromodulation”

- *2018-2020:* RSCF grant holder “Neurodynamics aspects of the TMS cortical motor maps plasticity during motor learning”

- *2016-2018:* RFBR grant holder “Functional nTMS mapping - a new approach to study synergies on the cortical level”

- *2016-2017:* Personal SKOLKOVO grant “Umnik” “Development of the software for the analysis of the results of functional TMS brain mapping”