Portfolio of potential scientific advisors of participants of the international Olympiad Open Doors: Russian Scholarship Project of the Association "Global Universities" on the track of postgraduate studies in 2021-2022.

The university	Novosibirsk State University (NSU)
English proficiency	Free
The direction of training, on which will be accepted a graduate student	01.04.05 Optics
The code of the direction of training, for which a graduate student will be accepted	03.06.01 Physics and Astronomy
List of research projects of a potential supervisor (participation / leadership)	RFBR 15-02-05754 "Kinetics of Bose-Einstein condensates in double wells" - participation RFBR 16-02-00329 "Spectroscopy of individual atoms in a quantum feedback circuit" – participation RFBR 19-32-80018 "Coherent interferometric feedback in the problem control of Bose-Einstein atomic condensate "- leadership
List of possible research topics	Quantum feedback control in quantum-optical systems
 Research supervisor: Vladimir A. Tomilin, Candidate of Science (NSU)	
Title (research area of the supervisor in one phrase)	Theoretical Quantum Optics, quantum feedback control
Supervisor's research interests (more detailed description of scientific interests):	• Theoretical studies of quantum feedback control schemes in quantum-optical systems • Decoherence theory • Quantum geometric phase in non-standard settings
Research highlights (if available): *It is necessary to indicate the distinctive features of this program, which would distinguish it from the rest. (Use of unique equipment, interaction with*	

foreign scientists and research centers, financial support for a graduate student, etc.) _____ _____	
Supervisor's specific requirements: The section is filled in if there are requirements for a graduate student (mandatory background of the candidate / discipline that he must have mastered / methods that he must own / be able to use some specific software, etc.) • _____ • _____ _____	• Knowledge of English • Background in Quantum Optics (graduate level) • Knowledge of basic numerical techniques • Interest in theoretical research
Supervisor's main publications (indicate the total number of publications in journals indexed by Web of Science or Scopus over the past 5 years, write up to 5 most significant publications, indicating the output data): • _____ • _____ _____	1. V.A. Tomilin, L.V. Il'ichov 'Correlations of photoemissions in a multiatomic ensemble driven by a cat-state field', Phys. Rev. A. **96**, 063805 (2017). https://doi.org/10.1103/PhysRevA.96.063805 2. V.A. Tomilin, L.V. Il'ichov 'Λ-scheme feedback spectroscopy', Opt. Commun. **391,** 57 (2017). https://doi.org/10.1016/j.optcom.2017.01.009 3. V.A. Tomilin, L.V. Il'ichov 'Solvable model of quantum-optical feedback', Phys. Lett. A **384**, 126718 (2020). https://doi.org/10.1016/j.physleta.2020.126718 4. V.A. Tomilin, L.V. Il'ichov 'Control of atomic Bose – Einstein condensate with interferometric feedback probing', Quantum Electron. **50**, 337 (2020). https://doi.org/10.1070/QEL17334 5. V.A. Tomilin, L.V. Il'ichov 'Hybrid atom-optical quantum gyrometry', JETP Letters **113**, 207 (2021). https://doi.org/10.1134/S0021364021030103 Total number of publications indexed in WoS/Scopus in 2016-2021: 14
Results of intellectual activity (if available) (The most significant results of intellectual activity)	