Приложение 7 к Протоколу заочного голосования Организационного комитета Международной олимпиады Ассоциации «Глобальные университеты» для абитуриентов магистратуры и аспирантуры от 20.06.2023 № 1-з

**Структура научного профиля (портфолио) потенциальных научных руководителей участников трека аспирантуры Международной олимпиады Ассоциации «Глобальные университеты» для абитуриентов магистратуры и аспирантуры.**

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| --- | --- |
| University | Sechenov University |
| Level of English proficiency | B2 |
| Educational program and field of the educational program for which the applicant will be accepted | *3.02 Clinical medicine*  *BA, ANESTHESIOLOGY*  *DS, CRITICAL CARE MEDICINE* |
| List of research projects of the potential supervisor (participation/leadership) | Nitric oxide, Hypoxic and Hyperoxic Preconditioning for multiorgan protection agains Ischemia-Reperfusion Injury in patients undergoing cardiac surgery with Cardiopulmonary Bypass and non-cardiac surgery (long-term abdominal surgery). |
| List of the topics offered for the prospective scientific research | 1. Endothelial dysfunction and oxygen dys/balance as a causes of multiorgan dysfunction after cardiac surgery  2. Cardiorenal protection in cardiac surgery based on nitric oxide inhalation in the perioperative period.  3. Cardiorenal protection based on inhalation of nitric oxide in the perioperative period during long-term laparoscopic surgery in patients with cardiovascular pathology.  4. Gastrointestinal protection against ischemia-reperfusion injury in cardiac surgery based on insufflation of nitric oxide into the cardiopulmonary bypass circuit.  5. Nephroprotection in abdominal surgery based on intraoperative inhalation of nitric oxide.  6. Protection of abdominal organs based on perioperative inhalation of nitric oxide during long-term laparoscopic surgery.  7. Cerebroprotection based on perioperative inhalation of nitric oxide during long-term abdominal surgery  8. Hypoxic-hyperoxic preconditioning for neuroprotection in the perioperative period during long-term surgical procedures (cardiac and non-cardiac).  9. A preventive organoprotective methods by enhancing respiratory and metabolic adaptation to stress based on hypoxic, hyperoxic gas mixtures and inhalation of nitric oxide during elective long-term surgical interventions. |
| Research supervisor:  Irina A. Mandel, C a n d i d a t e o f S c i e n c e (Academician E. N. Meshalkin Novosibirsk Research Institute of Circulatory Pathology for the Ministry of Health of the Russian Federation) | 3. MEDICAL AND HEALTH SCIENCES  3.02 Clinical medicine  *BA, ANESTHESIOLOGY*  *DS, CRITICAL CARE MEDICINE* |
| Supervisor’s research interests  Mechanisms of organ damage, endothelial dysfunction and oxygen balance as causes of multiple organ failure in cardiac surgery and laparoscopic surgery. Organoprotection based on hypoxic, hyperoxic gas mixtures and inhalation of nitric oxide in cardiac and non-cardiac surgery. Dysfunction of the right heart and protection against ischemia-reperfusion injury in cardiac surgery. Preventive organ protection by increasing respiratory and metabolic adaptation to stress based on hypoxic, hyperoxic gas mixtures and inhalation of nitric oxide. |
| Research highlights *(при наличии)*  *Необходимо указать отличительные особенности данной программы, которые бы выделяли её перед остальными. (Использование уникального оборудования, взаимодействие с зарубежными учеными и исследовательскими центрами, финансовая поддержка аспиранта и т.д.)* |
| Supervisor’s specific requirements:  Basic Biomedical statistics |
| Supervisor’s main publications   1. *Influence of Hypoxic and Hyperoxic Preconditioning on Endothelial Function in a Model of Myocardial Ischemia Reperfusion Injury with Cardiopulmonary Bypass (Experimental Study). Mandel, I.A.; Podoksenov, Y.K.; Suhodolo, I.V.; An, D.A.; Mikheev, S.L.; Podoksenov, A.Y.; Svirko, Y.S.; Gusakova, A.M.; Shipulin, V.M.; Yavorovskiy, A.G.* ***International Journal of Molecular Sciences*** *2020 Jul 27;21(15):E5336. doi: 10.3390/ ijms21155336. PMID: 32727110* 2. *Nitric oxide provides myocardial protection when added to the cardiopulmonary bypass circuit during cardiac surgery: Randomized trial / Kamenshchikov N.O., Mandel I.A., Podoksenov Y.K., Svirko Y.S., Lomivorotov V.V., Mikheev S.L., Kozlov B.N., Shipulin V.M., Nenakhova A.A., Anfinogenova Y.J. //* ***Journal of Thoracic and Cardiovascular Surgery*** *2019; 157: 2328–2336. DOI:* [*https://doi.org/10.1016/j.jtcvs.2018.08.117*](https://doi.org/10.1016/j.jtcvs.2018.08.117) 3. *Endothelial Function and Hypoxic–Hyperoxic Preconditioning in Coronary Surgery with a Cardiopulmonary Bypass: Randomized Clinical Trial. Mandel, I.A.; Podoksenov, Y.K.; Mikheev, S.L.; Suhodolo, I.V.; Svirko, Y.S.; Shipulin, V.M.; Ivanova, A.V.; Yavorovskiy, A.G.; Yaroshetskiy, A.I. //* ***Biomedicines*** *2023, 11(4):1044.* [*https://doi.org/10.3390/biomedicines11041044*](https://doi.org/10.3390/biomedicines11041044) 4. *Low Circulating Vitamin D in Intensive Care Unit-Admitted COVID-19 Patients as a Predictor of Negative Outcomes. Bychinin MV, Klypa TV, Mandel IA, Andreichenko SA, Baklaushev VP, Yusubalieva GM, Kolyshkina NA, Troitsky AV.* ***Journal of Nutrition*** *2021 Aug 7;151(8):2199-2205. doi: 10.1093/jn/ nxab107. PMID: 33982128; PMCID: PMC8194597.* 5. *Potential for the lung recruitment and the risk of lung overdistension during 21 days of mechanical ventilation in patients with COVID-19 after noninvasive ventilation failure: the COVID-VENT observational trial / Andrey I. Yaroshetskiy, Sergey N. Avdeev, Mikhail E. Politov, Pavel V. Nogtev, Victoria G. Beresneva, Yury D. Sorokin, Vasily D. Konanykhin, Anna P. Krasnoshchekova, Zamira M. Merzhoeva, Natalia A. Tsareva, Natalia V. Trushenko, Irina A. Mandel and Andrey G. Yavorovskiy* ***BMC Anesthesiology*** *(2022) 22:59* [*https://doi.org/10.1186/s12871-022-01600-0*](https://doi.org/10.1186/s12871-022-01600-0) 6. *Effect of vitamin D3 supplementation on cellular immunity and inflammatory markers in COVID-19 patients admitted to the ICU. Bychinin, M.V., Klypa, T.V., Mandel, I.A., Yusubalieva, G. M., Baklaushev, V.P., Kolyshkina, N.A., Troitsky, A.V. //****Sci Rep.*** *2022 Nov 3;12(1):18604.* [*https://doi.org/10.1038/s41598-022-22045-y*](https://doi.org/10.1038/s41598-022-22045-y) |
|  | Results of intellectual activity *(при наличии)*   1. Influence of Hypoxic and Hyperoxic Preconditioning on Endothelial Function in a Model of Myocardial Ischemia Reperfusion Injury with Cardiopulmonary Bypass (Experimental Study). 2. Nitric oxide provides myocardial protection when added to the cardiopulmonary bypass circuit during cardiac surgery: Randomized trial 3. Endothelial Function and Hypoxic–Hyperoxic Preconditioning in Coronary Surgery with a Cardiopulmonary Bypass: Randomized Clinical Trial. 4. Effect of vitamin D3 supplementation on cellular immunity and inflammatory markers in COVID-19 patients admitted to the ICU. Randomized Clinical Trial. |