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**Federal State Autonomous Educational Institution of Higher Education
"Peoples' Friendship University of Russia"**

Medical Institute

(name of the main educational unit (PMO) - the developer of the postgraduate program)

**Department of Internal Diseases with a course of cardiology and functional
diagnostics named after academician V.S. Moiseev**

(name of the basic educational unit (BUE) - the developer of the postgraduate program)

SCIENTIFIC ACTIVITY PLAN

Scientific specialty:

3.1.18 Internal diseases

(code and name of scientific specialty)

**Scientific research is carried out as part of the implementation of the postgraduate
program:**

Internal diseases : Heart failure

(name of postgraduate program)

2023

1. PURPOSE OF RESEARCH

The purpose of performing scientific research [carrying out scientific (research) activities] is the preparation of a dissertation for the scientific degree of a candidate of medical sciences (hereinafter referred to as the dissertation) for defense.

The tasks of performing scientific research [carrying out scientific (research) activities] in the direction 3.1.18. Internal diseases : Heart failure is an:

- ensuring the formation of professional research thinking of graduate students, the formation of a clear idea of the main professional tasks, ways to solve them;

- formation of skills to develop work plans and programs for scientific research;

- creation of a list of planned results based on the results of scientific research;

- preparation of data for compiling reviews, reports, scientific reports and publications;

- the formation of skills and abilities to conduct a scientific discussion, present the results of research in various forms (presentation, abstract, essay, analytical review, critical review, report, message, speech, scientific article of a review, research and analytical nature, etc.);

- acquisition of experience in independent organization of research activities;

- determination of the scope of scientific research;

- drawing up an approximate plan for the implementation of scientific research;

- preparation of a dissertation plan and publications that outline the main scientific results of the dissertation;

- determination of the list of stages in the development of the scientific component of the postgraduate program, the distribution of these stages and the final certification of postgraduate students.

2. PLANNED RESULTS OF SCIENTIFIC RESEARCH

Solving a scientific problem that is important for the development of a branch of science 3.1.18. Internal diseases : Heart failure .

Preparation of a dissertation for defense includes the implementation of an individual plan of scientific activity, writing, design and submission of a dissertation for final certification.

The plan of scientific activity includes an approximate plan for the implementation of scientific research, a plan for preparing a dissertation and publications that set out the main scientific results of the dissertation, as well as a list of stages for mastering the scientific component of the postgraduate program, the distribution of these stages and the final certification of postgraduate students.

As a result of the training, the graduate student must:
know:

- methodology for conducting scientific research;

- modern technologies for searching and processing information;

- requirements for the quality, completeness and reliability of sources of scientific information used in scientific research;

- requirements for the presentation of the results of scientific research;

be able to:

- organize independent research work;

- identify, formulate actual problems in the area under study, set goals, determine the subject and objectives of the study;
- collect, systematize and study scientific literature in the field of the topic under study;
- conduct clinical trials;
- analyze medical documentation on the research topic;
- argue the results of their own scientific research and draw reasonable conclusions;
- present the results of scientific research in the form of completed research works: reports, abstracts, papers, theses, scientific articles;

own:

- skills of independent research work;
- methods of research and experimental work and the rules for using research tools;
- methods of analysis and processing of experimental and empirical data, means and methods of data processing;
- skills in the use of modern software for statistical data processing;
- scientific and theoretical approaches of domestic and foreign scientists on the problem under study, methods of analyzing data accumulated in the scientific industry on the research topic;
- methods of organization, planning, and implementation of scientific work, knowledge of the design of the results of research work;
- public speaking skills;
- skills in preparing presentations and scientific reports, designing scientific articles and scientific work.

The plan of scientific activity of a particular student is approved in the individual plan of scientific activity of a postgraduate student, the requirements for which are established by the relevant local normative act of the RUDN University.

3. SCOPE OF RESEARCH

The total labor intensity of scientific research is 150 credits (5400 academic hours).

4. STAGES OF PERFORMING RESEARCH *

Table 5.1. Stages of scientific research

| Stage name | Stage content (topics, activities) | intensity , acc.h. |
|--|--|--------------------|
| Course 1 | | |
| Section 1. Scientific activity of a postgraduate student aimed at preparing a dissertation for defense | The study of methodological recommendations for the organization and passage of research work. Receiving individual assignments. Individual consultations with the supervisor. | 1548 (43 SG) |
| | Development of an individual program for writing a dissertation research. Development of the theoretical | |

| Stage name | Stage content (topics, activities) | intensity , acc.h. |
|--|--|---------------------|
| | <p>concept of clinical scientific research. Development of the conceptual scheme of the study, the study protocol.</p> <p>Discussion of the topic of dissertation research. Formulation of the goal, objectives, prospects of the study. Determining the relevance and scientific novelty of the work. Formulation of the topic and structure of scientific work (together with the supervisor)</p> <p>Acquaintance with scientific methods, the technology of their application, methods of processing the obtained empirical data and their interpretation. The choice of optimal methods of statistical analysis, the determination of the sample size.</p> <p>Writing an annotation for a dissertation research</p> <p>Approval of the topic at a meeting of the department. Approval of the topic at the Academic Council of the MI RUDN University.</p> <p>Defense of the dissertation research project (topic, relevance, research design, materials and methods, expected results)</p> <p>Writing the first chapter of the dissertation "Literature Review" on the research topic.</p> | |
| Section 2. Preparation of publications, which set out the main scientific results of the dissertation and patent applications, certificates of state registration of programs. | <p>Preparation of a plan for a review article on the topic of a dissertation research (submission for verification to the curator)</p> <p>Preparation of a plan for publications on the topic of CI for at least 2 scientific articles included in the list of RUDN University (VAK), RSCI, SCOPUS, Wos (supply to the curator for verification)</p> <p>Studying the requirements for submitting grant applications on the research topic</p> | 216 (6 SU) |
| Intermediate certification | | 72 (2 SG) |
| | TOTAL: | 1836 (51 GE) |
| 2 course | | |
| Section 1. Scientific activity of a postgraduate student aimed at preparing a dissertation for defense | <p>Conducting scientific research on the topic of research work.</p> <p>Collection and synthesis of material</p> <p>Statistical processing and analysis of the obtained data</p> <p>Presentation at scientific conferences, congresses, seminars with obligatory publication of abstracts</p> <p>Defense of the preliminary results of the dissertation research (topic, relevance, research design, materials and methods, results, conclusions, practical significance)</p> | 1332 (37 GE) |
| Section 2. Preparation of publications, which set out the main scientific results of the dissertation | Preparation of publications on the topic of DI at least 2 scientific articles included in the list of RUDN University (VAK), RSCI, SCOPUS, Wos (supply to the curator for verification) | 216 (6 SU) |

| Stage name | Stage content (topics, activities) | intensity , acc.h. |
|--|---|----------------------|
| and patent applications, certificates of state registration of programs. | Submission of grant applications on the topic of research | |
| Intermediate certification | | 72 (2 SG) |
| TOTAL: | | 16g0 (45 GE) |
| 3 course | | |
| Section 1. Scientific activity of a postgraduate student aimed at preparing a dissertation for defense | Interpretation of the obtained results, formulation of conclusions, conclusions, practical recommendations based on the results of research work. | 1656 (46 GE) |
| | Completion of the dissertation work. | |
| | Approbation of the obtained results of research work. Preparation of a scientific report and presentation on the results of the study. | |
| | Discussion of the results of the study at a meeting of the department. | |
| | Writing a dissertation abstract. Dissertation recommendation for official defense. | |
| Section 2. Preparation of publications that present the main scientific results of the dissertation | Preparation of publications on the topic of DI at least 2 scientific articles included in the list of RUDN University (VAK), RSCI, SCOPUS, Wos (supply to the curator for verification) | 216 (6 SU) |
| Intermediate certification | | 72 (2 SG) |
| TOTAL: | | 1944 (54 SG) |
| Total: | | 5400 (150 GE) |

* - the stages of scientific research are FULLY reflected in the review of the student's supervisor.

6. LOGISTICS AND TECHNICAL SUPPORT OF SCIENTIFIC RESEARCH

| Audience type | Audience equipment | Specialized educational / laboratory equipment, software and materials for mastering the discipline (if necessary) |
|---------------|--|---|
| Lecture | An auditorium for lecture-type classes, equipped with a set of specialized furniture; board (screen) and technical means of multimedia presentations. Lecture hall of the therapeutic building of the State Budgetary Institution of Health "GKB im. V.V. Vinogradov DZM, Moscow, st. Vavilova, d. 61 | A set of specialized furniture; technical means: a multimedia projector, a laptop, a plasma panel, a screen, a magnetic board, a set of dummies, a set of educational videos and presentations, a set of analog and digital radiographs, educational posters and tables. Software: Microsoft products (OS, office suite, incl. MS Office / Office 365, Teams, Skype). |
| Lecture | An auditorium for lecture-type classes, equipped with a set of specialized furniture; board (screen) and technical means of multimedia presentations. | A set of specialized furniture; technical means: a multimedia projector, a laptop, a plasma panel, a screen, a magnetic board, a set of dummies, a set of educational videos and |

| Audience type | Audience equipment | Specialized educational / laboratory equipment, software and materials for mastering the discipline (if necessary) |
|----------------------------------|--|---|
| | Lecture halls No. 1 and 2 of the therapeutic and administrative building of the State Budgetary Institution of Health "GKB im. A.K. Eramishantseva DZM", Moscow, st. Lenskaya, 15 | presentations, a set of analog and digital radiographs, educational posters and tables. Software: Microsoft products (OS, office suite, incl. MS Office / Office 365, Teams , Skype . |
| Laboratory | Audience for laboratory and research work. Laboratory No. 545, GBUZ "GKB im. V.V. Vinogradov DZM, Moscow, st. Vavilova, d. 61 | ECG, EchoCG , BIVA, VEXUS devices, fibroscan , functional diagnostics laboratory, general clinical laboratory |
| Seminar | An auditorium for conducting seminar-type classes, group and individual consultations, current control and intermediate certification, equipped with a set of specialized furniture and technical means for multimedia presentations. Room No. 543 of the therapeutic building of the State Budgetary Institution of Health "GKB them. V.V. Vinogradov DZM, Moscow, st. Vavilova, d. 61 | A set of specialized furniture; technical means: a multimedia projector, a laptop, a set of educational videos and presentations, a set of radiographs, an ECG, educational posters and tables. Software: Microsoft products (OS, office suite, including MS Office / Office 365, Teams . |
| Seminar | An auditorium for conducting seminar-type classes, group and individual consultations, current control and intermediate certification, equipped with a set of specialized furniture and technical means for multimedia presentations. Lecture hall No. 2 of the administrative building of the GBUZ "GKB im. A.K. Eramishantseva DZM", Moscow, st. Lenskaya, 15 | A set of specialized furniture; technical means: a multimedia projector, a laptop, a set of educational videos and presentations, a set of radiographs, an ECG, educational posters and tables. Software: Microsoft products (OS, office suite, including MS Office / Office 365, Teams . |
| For independent work of students | An auditorium for independent work of students (can be used for seminars and consultations), equipped with a set of specialized furniture and computers with access to the EIOS. | A set of specialized furniture; technical means: multimedia projector, laptop. Software: Microsoft products (OS, office suite, including MS Office / Office 365, Teams . |

7. RESEARCH METHODS

Scientific research can be carried out both in structural subdivisions of RUDN University or in organizations of Moscow (stationary), and at bases located outside of Moscow (exit).

Conducting scientific research on the basis of an external organization (outside RUDN University) is carried out on the basis of an appropriate agreement, which specifies the terms, place and conditions for performing scientific research in the base organization.

The deadlines for the implementation of scientific research correspond to the period indicated in the calendar academic schedule of the postgraduate program. The timing of the internship can be adjusted upon agreement with the Department for the Training of Highly Qualified Personnel of the RUDN University.

8. EDUCATIONAL-METHODOLOGICAL AND INFORMATION SUPPORT FOR SCIENTIFIC RESEARCH

Main literature:

1. Federal Law of August 23, 1996 No. 127-FZ "On Science and State Science and Technology Policy"
2. Decree of the Government of the Russian Federation of September 24, 2013 No. 842 "On the procedure for awarding academic degrees"
3. Volkov Yu.G. Thesis. Preparation, protection, registration. M., 2012.
4. Kuzin F.A. Thesis. Writing technique. Design rules. Protection order. M., 2013.
5. Novikov A.M. Methodology of scientific research [Text]: textbook-method. allowance / A. M. Novikov, D. A. Novikov. – M.: LIBROKOM, 2010. – 280 p.
6. Martin Bland. An Introduction to medical statistics. OU Oxford . 2015: 447.
7. Ramakrishna HK Medical Statistics: For Beginners. Springer. 1st Ed. 2017.
8. Glantz S. Medico-biological statistics. Per. from English. - M., Practice. 1999: 459 p.
9. Rebrova O.Yu. Statistical analysis of medical data. Moscow. "Media Sphere". 2000: 312 p.

Additional literature:

1. Raizberg B.A. Dissertation and academic degree. M., 2011.
2. Yarskaya V.N. Methodology of dissertation research. How to defend a dissertation. M., 2011.
3. Medical dissertation: modern requirements for content and design / under. ed. Denisova I. N. - M. : GEOTAR-Media, 2007. - 364 p.
4. Greenhalgh , Trisha . Fundamentals of Evidence -Based Medicine: A Textbook for University Students and Systems of Postgraduate Professional Education / Trisha Greenhalch . - M. : GEOTAR-MED, 2006. - 240 p.

Software:

1. Office software package (OpenOffice , MsOffice);
2. Software package for statistical data processing (Statistics 6.2-7.0 , StatSoft , Stata).

Resources of the information and telecommunications network "Internet":

1. RUDN ELS and third-party ELS, to which university students have access on the basis of concluded agreements:

- RUDN Electronic Library System - RUDN EBS <http://lib.rudn.ru/MegaPro/Web>
- ELS "University Library Online" <http://www.biblioclub.ru>
- EBS Yurayt <http://www.biblio-online.ru>
- ELS "Student Consultant" www.studentlibrary.ru
- EBS "Lan" <http://e.lanbook.com/>
- EBS "Trinity Bridge"

2. Databases and search engines:

- electronic fund of legal and normative-technical documentation <http://docs.cntd.ru/>
- Higher Attestation Commission (HAC) - <http://vak.ed.gov.ru/>
- Yandex search engine <https://www.yandex.ru/>
- Google search engine <https://www.google.ru/>
- abstract database SCOPUS <http://www.elsevierscience.ru/products/scopus/>
- Ebscohost database : <http://search.ebscohost.com>
- Other databases: PubMed , CDSR, GoogleScholar , Cyberleninka
- Medical online library MedLib (<http://med-lib.ru/>).
- Scientific electronic library (<http://elibrary.ru/>);
- Universal library ONLINE (<http://biblioclub.ru/>);
- Library of electronic journals BENTHAM OPEN
(<http://www.benthamscience.com/open/az.htm>);
- Elsevier Electronic Journal Library
(<http://www.elsevier.com/about/openaccess/open-archives>)
- Medical online library MedLib (<http://med-lib.ru/>).
- EBS publishing house " Urayt " (<http://www.biblio-online.ru>)
- Electronic library system "Znaniy.com" <http://znaniy.com/>
- U. S. National Library of Medicine National Institutes of Health:
<http://www.ncbi.nlm.nih.gov/pubmed/>
- Virtual Reading Room of the Russian State Library <https://www.rsl.ru>
- PROQUEST Dissertation and Theses Global <http://search.proquest.com/>
- National Library of Canada Open Access Dissertation Database:
ThesesCanadaPortal <http://www.nlc-bnc.ca/thesescanada/>
- Scientific electronic library of dissertations and abstracts Dissercat
<https://www.dissercat.com/>
- Dissertations - foreign collections in open access DARTEurope , Dialnet , HAL,
OATD(OpenAccessThesesandDissertations), PQDTopen , dissertations.se, theses.fr ,
CiNiiDissertations , NDLTD
- Scientometric database Web of Science <http://www.webofknowledge.com/>;
- Scopus scientometric database : <https://www.scopus.com>

Educational and methodological materials for scientific research:*

1. Guidelines for the preparation of dissertations, scientific publications.

* - all educational and methodological materials for scientific research are posted in accordance with the current procedure on the practice page in TUIS!

8. EVALUATION MATERIALS AND ASSESSMENT SYSTEM OF STUDENTS ON THE RESULTS OF THE PERFORMANCE OF SCIENTIFIC RESEARCH

Mandatory activities of the student:

1 year of study:

- independent study of the recommended methodological literature necessary for the implementation of research work, familiarization with the research program;
- together with the supervisor, drawing up a work plan for conducting scientific research;
- formulation of the goal, objectives, prospects of the study. Determining the relevance and scientific novelty of the work. Formulation of the topic and structure of scientific work (together with the supervisor);
- preparation and discussion at the department of the concept of the dissertation and approval of the topic;
- study and review of scientific literature (foreign and domestic) on the topic of the dissertation work;
- familiarization with scientific methods, technology of their application, methods of processing the obtained empirical data and their interpretation;
- writing the first chapter of the dissertation "Literature Review" on the research topic;
- participation in the research work of the specialized department
- presentation at a scientific conference;

2nd year of study:

- p conducting scientific research on the topic of research work;
- collection and generalization of material;
- statistical processing and analysis of the obtained data;
- preparation and discussion at the department of part of the dissertation;
- presentation at scientific conferences, congresses, seminars with the obligatory publication of abstracts;
- publication of at least two scientific articles, including one scientific article on the research topic in a publication included in the list of the Higher Attestation Commission and / or RUDN University or SCOPUS, Web of Science and others equivalent to them and / or approved by the RUDN Academic Council;
- participation in the research work of the specialized department.

3rd year of study:

- interpretation of the obtained results, formulation of conclusions, conclusions, practical recommendations based on the results of research work;
- preparation of the entire dissertation and presentation to the supervisor;
- publication of at least three scientific articles, including two scientific articles on the research topic in publications included in the list of the Higher Attestation Commission and / or RUDN University and SCOPUS, Web of Science and others equivalent to them and / or approved by the RUDN Academic Council;
- speaking at conferences;

- participation in the research work of the department;
- summing up the results of research work;
- preparation of a scientific report and presentation;
- discussion of the results of scientific research at a meeting of the department;
- writing a dissertation abstract.

Based on the results of the stages of identifying scientific research, the graduate student submits a detailed oral or written report to the supervisor or to the meeting of the PMU. The report includes information characterizing the content of the postgraduate student's work and reflecting the implementation of scientific research.

The report should include information about:

- about the degree of readiness of the dissertation;
- on the preparation and publication of articles in journals included in the list of VAK, RSCI, Scopus, Web of Science and others equivalent to them and / or approved by the RUDN University Academic Council;
- about the participation of a graduate student in scientific and technical events on the topic of his research;
- on participation in the research work of the department (with participation);
- other.

During the period of interim certification, the supervisor provides feedback on the quality, timeliness and success of the postgraduate student's stages of scientific (research) activities.

The results of scientific research for each year of study are determined by conducting an intermediate certification with the marks "excellent", "good", "satisfactory", "unsatisfactory" and in the ECTS system (A, B, C, D, E). The basis for their nomination is the point-rating system adopted at the University.

DEVELOPERS:

Head of Internal Medicine with a Course in Cardiology and Functional Diagnostics named after Academician V.S. Moiseeva, Doctor of Medical Sciences, Professor, Corresponding Member of RAS

Position, BUP


Signature

Kobalava Zh.D.

Surname I.O.

Associate Professor, Department of Internal Medicine with a course of cardiology and functional diagnostics named after Academician V.S. Moiseeva, Ph.D.

Position, BUP


Signature

Kotova E.O.

Surname I.O.

HEAD OF BUP:

Head of Internal Medicine with a Course in Cardiology and Functional Diagnostics named after Academician V.S. Moiseeva, Doctor of Medical Sciences, Professor, Corresponding Member of RAS


Signature

Kobalava Zh.D.