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THE APPLIED SCIENTIFIC RESEARCHES DIRECTION  
“APPLICATIONS OF PHARMACOLOGY AND PHARMACEUTICS” (“APPHARMAC AND PHARMAC”)  
OF “SEC “SFA CMT” OF “RA(M)S” N. A. ACAD. BURDENKO N.N.”

The developed “The applied scientific researches direction “Applications of pharmacology and pharmaceutics”” (“APPHARMAC and PHARMAC”) treats to the applied scientific researches divisions of “The scientific-educational centre “System and financial analysis based on cognitive modeling technology” of “RA(M)S” named after acad. Burdenko N.N.” (“SEC “SFA CMT” of “RA(M)S” n. a. acad. Burdenko N.N.” – SEC) as the first SEC in the structure of “SIO “Academy of cognitive natural sciences”” (“SIO “ACNS””) as the add. component of the system of science and education of the modern country for the creation, distribution and use of the main and derivative scientific results of the cognitive modeling technology (CMT) (www.vetrovan.(spb.)ru) [see the applied scientific researches directions and departments of SEC]:

- 1) it is executed by the principle of “administrative-economy submission”;
- 2) works in the several main directions, which allow to provide the development of the applied main and derivative scientific results (my second report on SRW from 2006-2008(9) y. was submitted to “SPbSETU “LETI”” and “The Government of RF” for the translation, carrying out of int. action and receiving of “The Nobel prize”);
- 3) includes the several various main divisions:  
I. “The applied scientific researches department “Applications of pharmacology, pharmaco-epidemiology, pharmacy, bio-chemical pharmacology, clinical pharmacology, molecular pharmacology, pharmaco-genomics and experimental pharmacology”” (“APPHPH-EPPHB-CHPHCLPHMPHPH-G and EXPPH”) (\*)  
*[the applied scientific researches in area “Applications of pharmacology”* – the medical-biological science about the medicinal substances and their action on the organism (the science about the physiologically active substances), usage of the theoretical bases of pharmacology, usage of theory of pharmacology, methods and equipment for the pharmacological researches, usage of theory of pharmaco-kinetics and pharmaco-dynamics of the drugs and substances, usage of theory of molecular pharmacology, usage of theory of bio-pharmacology, usage of theory of cytological pharmacology, usage of theory of embryological pharmacology, usage of theory of genetic pharmacology, usage of theory of virological pharmacology, usage of theory of micro-biological pharmacology, usage of theory of botanical pharmacology, usage of theory of physiological pharmacology of the plants, usage of theory of zoological pharmacology, usage of theory of ecological pharmacology, usage of theory of anthropology of pharmacology, usage of theory of physiological pharmacology of the person and animals, usage of theory of immunological pharmacology, usage of theory of toxicological pharmacology, usage of theory of radiation pharmacology, usage of theory of space pharmacology, usage of theory of bio-engineering pharmacology usage of the cognitive modeling technology in the applications of pharmacology;

*the applied scientific researches in area “Applications of pharmaco-epidemiology”* – the synthetic area of knowledge for the studying of the application and action of the medicinal drugs on the large groups of people, usage of the theoretical bases of pharmaco-epidemiology, usage of theory of studying of the application and action of the medicinal drugs on the large groups of people, usage of theory of the methodological apparatus of pharmaco-epidemiology (pharmacology and epidemiology), usage of theory of pharmaco-supervision and usage of the cognitive modeling technology in the applications of pharmaco-epidemiology;

*the applied scientific researches in area “Applications of pharmacy”* – the complex of scientific-practical disciplines, studying the problems of creation, safety, research, storage, manufacture, dispensing and marketing of medicinal drugs, and also the search of the natural sources of the medicinal substances, usage of the theoretical bases of pharmacy, usage of theory of pharmaceutical chemistry, usage of theory of the technology of synthesis of the pharmaceutical drugs and medicinal forms, usage of theory of judicial chemistry, usage of theory of pharmaco-gnosy, usage of theory of the organization and economics of pharmacy, usage of theory of military pharmacy and usage of the cognitive modeling of technology in the applications of pharmacy;

*the applied scientific researches in area “Applications of bio-chemical pharmacology”* – the direction in the modern clinical medicine, which is engaged in the creation of the genetic and metabolic certification of the impact of chemical compounds, including the drugs, on the biological organisms with the purpose of development of the principles of individual prevention and therapy, usage of the theoretical bases of bio-chemical pharmacology, usage of theory of system biology, usage of theory of mathematical bio-physics, usage of theory of regulation of hemostasis and thrombosis, usage of theory of intra-cellular signaling, usage of theory of self-organization, usage of theory of regulation of mitosis, usage of theory of development of protein micro-arrays, usage of theory of devices for the diagnostic usage of the cognitive modeling technology in the applications of bio-chemical pharmacology;

*the applied scientific researches in area “Applications of clinical pharmacology”* – the direction in the modern clinical medicine, which studying the impact of medicinal drugs on the organism of the sick person, usage of the theoretical bases of clinical pharmacology, usage of theory of the requirements to the testing of new pharmacological drugs, usage of theory of development of the principles and methods of comprehensive study of the action of pharmacological drugs, usage of theory of pharmaco-dynamics (the studying of a set of effects of the medicinal substance and its mechanisms of action), usage of theory of pharmaco-kinetics (the studying of the ways of admission, distribution, bio-transformation and removal of medicinal drugs from the organism of the patient), usage of theory of adverse reactions, usage of theory of the features of action of the medicinal substances in the various conditions, usage of theory of the interaction of drugs at their together application, usage of theory of impact of the food on the pharmaco-kinetics of medicinal drugs, usage of theory of pharmaco-genetics (the determining of the genetic bases of reactions of the organism on the medicinal drugs) and usage of the cognitive modeling technology in the applications of clinical pharmacology;

*the applied scientific researches in area “Applications of molecular pharmacology”* – the modern medical-biological scientific direction about the medicinal substances and their action on the organism on the molecular level (the scientific direction about the physiologically active substances, acting on the molecular level), usage of the theoretical bases of molecular pharmacology, usage of theory of molecular pharmacology, methods and equipment for the pharmacological researches on the molecular level, usage of theory of pharmaco-kinetics and pharmaco-dynamics of the drugs and substances on the molecular level, usage of theory of molecular pharmacology, usage of theory of molecular bio-pharmacology, usage of theory of cytological molecular pharmacology, usage of theory of embryological molecular pharmacology, usage of theory of genetic molecular pharmacology, usage of theory of virological molecular pharmacology, usage of theory of micro-biological molecular pharmacology, usage of theory of botanical molecular pharmacology, usage of theory of physiological molecular pharmacology of the plants, usage of theory of zoological molecular pharmacology, usage of theory of ecological molecular pharmacology, usage of theory of anthropology of molecular pharmacology, usage of theory of physiological molecular pharmacology of the person and animals, usage of theory of immunological molecular pharmacology, usage of theory of toxicological molecular pharmacology, usage of theory of radiation molecular pharmacology, usage of theory of space molecular pharmacology, usage of theory of bio-engineering molecular pharmacology and usage of the cognitive modeling technology in the applications of molecular pharmacology;

*the applied scientific researches in area “Applications of pharmaco-genomics”* – the branch of pharmaceutics and pharmacology, which researching the impact of genetic variation of each person in his response on the certain medicinal drug (pharmaco-genomics links the expression of the particular gene or single-nucleotide polymorphism in the genome of person with the efficiency or toxicity of the medicinal drug in order, that to develop the rational means of optimizing of pharmaco-therapy), usage of the theoretical bases of pharmaco-genomics, usage of theory of pharmaco-genomics, usage of theory of the genotypes of people, usage of theory of providing of the maximal efficiency at the minimal side effects, usage of theory of creation of “the personified medicine”, usage of theory of optimizing of the genetic characteristics of person, usage of theory of applied application of the genome of person, usage of theory of research of the interaction of the single gene with the medicinal drugs, usage of theory of treatment of the cancer of mammary gland, usage of theory of treatment of the virus of deficiency of the immune system, usage of theory of treatment of leukemia, theory of revealing of the potential adverse reactions in the response to the action of medicinal drugs and usage of the cognitive modeling technology in the applications of pharmaco-genomics;

*the applied scientific researches in area “Applications of experimental pharmacology” – the modern medical-biological scientific direction about the experimental medicinal substances and their action on the organism (the scientific direction about the experimental physiologically active substances), usage of the theoretical bases of experimental pharmacology, usage of theory of experimental pharmacology, methods and equipment for the pharmacological experimental researches, usage of theory of pharmaco-kinetics and pharmaco-dynamics of the experimental drugs and substances, usage of theory of experimental molecular pharmacology, usage of theory of experimental bio-pharmacology, usage of theory of cytological experimental pharmacology, usage of theory of embryological experimental pharmacology, usage of theory of genetic experimental pharmacology, usage of theory of virological experimental pharmacology, usage of theory of micro-biological experimental pharmacology, usage of theory of botanical experimental pharmacology, usage of theory of physiological experimental pharmacology of the plants, usage of theory of zoological experimental pharmacology, usage of theory of ecological experimental pharmacology, usage of theory of anthropology of experimental pharmacology, usage of theory of physiological experimental pharmacology of the person and animals, usage of theory of immunological experimental pharmacology, usage of theory of toxicological experimental pharmacology, usage of theory of radiation experimental pharmacology, usage of theory of space experimental pharmacology, usage of theory of bio-engineering experimental pharmacology and usage of the cognitive modeling technology in the applications of experimental pharmacology].*

The applied scientific researches directions and departments of SEC allow to develop the main and derivative scientific results of CMT.