

## Two Way Bridges of Pharmacology and Biomedicine

**Bungay Larisa\***

Department of Biomedical, Immanuel Kant Baltic Federal University, Kaliningrad Oblast, Russia

\*Corresponding author: Bungay Larisa, Department of Biomedical, Immanuel Kant Baltic Federal University, Kaliningrad Oblast, Russia,  
E-mail: larisa@gmail.com

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### Description

Compared with other biomedical disciplines, the boundaries of pharmacology are not sharply defined but they are constant. Its exponents are as benefits pragmatists, the territory and techniques of other disciplines, if it ever had a conceptual and technical core that it could really call its own, this has now dwindle almost to the point of extinction, and the subject is defined by its purpose to understand what drugs do to living organisms, and more particularly how their effects can be applied to therapeutics rather than by its scientific coherence and the structure of pharmacology as it appears today. Within the main subject fall a number of compartments immune pharmacology, pharmacokinetics, etc., which are convenient, if not watertight, sub-divisions. These topics form the main subject matter of this content. Around the edges are several interface disciplines which form important two-way bridges between pharmacology and other fields of biomedicine.

### Biotechnology

Originally this was the production of drugs or other useful products by biological means e.g. antibiotic production from micro-organisms or production of monoclonal sphere, biotechnology refers mainly to the use of recombinant DNA technology from a wide variety of purpose, including the manufactures of therapeutic proteins, diagnostics, genotyping of transgenic animals etc. The many non-medical applications include agriculture, forensics, environmental sciences, etc.

### Pharmacogenetics

This is the study of genic influence on responses to drugs. Originally, pharmacogenetics focused on familial idiosyncratic drug reactions, where affected individual shown an abnormal usually adverse response to class of drug. It covers broader variations in drug response, where the genetic basics are more complex.

### Pharmacogenomics

This recent term overlaps with pharmacogenetics, describing the use of genetic information to guide the choice of drug therapy on an individual basis. The underlying principal is that differences between individuals in their response to therapeutic drugs can be predicted from their genetic makeup. On far they mainly involve genetic polymorphism of drug-metabolizing. Variations with variations in therapeutic or unwanted effects of a particular drug should enable the tailoring of therapeutic choices on the basis of an individual's genotype. Steady improvements in the cost and feasibility of individual genotyping will increase its applicability, with far-reaching consequences for therapeutics.

### Pharmacoepidemiology

This is the study of drug effects at the population level. It is concerned with the variability of drug effects between individuals in a population, and between populations. It is an increasingly important topic in the eyes of the regulatory authorities who decide whether or not new drugs can be licensed for therapeutic use. Variability between individuals or populations has an adverse effect on the utility of a drug, even though its mean effect level may be satisfactory. Pharmacoepidemiological studies also take into account patient compliance and other factors that apply when the drug is used under real-life conditions.

### Pharmacoeconomics

This branch of health economics aims to quantify in economic terms the cost and benefit of drugs used therapeutically. It arose from the concern of many governments to provide for health care from tax revenues, rising questions of what therapeutic procedures represent the best value for money. This of course raises fierce controversy, because it ultimately comes down to putting monetary value on health and longevity. As with pharmacoepidemiology regulatory authorities.