

ERACOL| Rosario university, Colombia

Updated 2010-04-23

General information

Institution:	Rosario University
City:	Bogotá
Country:	Colombia

CONTENT

Medical Entomology	2
Endothelial dysfunction.....	3
Tropical forest dynamics along gradients of resource availability	4
Spatial and temporal scaling of photosynthesis	5
Biomarkers in cancer.....	6
Cellular death.....	7
Cost-effectiveness analysis of health interventions to reduce the risk of chronic diseases (added 2010-04-23)	8
Socioeconomic determinants of health (added 2010-04-23).....	9
Equity in the access and efficiency of integrated health services networks (IHSN) in Colombia and Brazil. (on going EU funded, FP7 project) (added 2010-04-23).....	10
Medical genetics and dysmorphology (added 2010-04-23).....	11
Pharmacogenetics in health (added 2010-04-23)	12
Functional genomics and molecular genetics of selected diseases (added 2010-04-23)	13
Studies on Mental Health (added 2010-04-23)	14
Biomedical-Clinical Engineering (added 2010-04-23)	15

1. research line 1:
Medical Entomology
2. general description of the research line:
The main objective of this research line is to study arthropods of public health importance, based in basic and applied biological characteristics, such as: life cycle and population parameters, cell cultures derived from embryonic tissues, characterization and susceptibility of cell lines to infections with viruses and parasites, inter-relation between cell from vectors and pathogens; variability and genetic heterogeneity and insect control strategies.
2. specific subtopics within the research line:
<ul style="list-style-type: none"> • Cell cultures of vector insects and susceptibility to infections with arboviruses • Colonization, life cycle and population parameters of vector insects • Genetics of vector insects.
4. contact person for interested students/teaching staff:
Felio Bello García, MSc, PhD.
5. field of research (for example: epidemiology, public health, statistics, medicine):
Entomology
6. for which levels is the research line applicable (undergraduate, master, doctorate, post-doctorate/teaching staff)
Undergraduate, master and doctorate.

1. research line 2:
Endothelial dysfunction
2. general description of the research line:
<p>a. Our goal is to assess the molecular mechanisms occurring in the endothelial tissue that promote alterations in its permeability, angiogenic processes and evolution of diseases such as cancer and atherosclerosis. Therefore our purpose is to evaluate signal transduction involved in those events.</p> <p>b. Indeed we are interested in evaluating factors associated to morbidity and mortality fetal-maternal due to hypoxia perinatal and neuroprotective drugs effects associated with neurodevelopment evolution in infants suffering this noxa.</p>
3. specific subtopics within the research line:
<p>Signal transduction Cancer Hypoxia Angiogenesis Atherosclerosis Membrane proteins</p>
4. contact person for interested students/teaching staff:
<p>Ruth Garzón Fernández e-mail: ruth.garzon@urosario.edu.co</p>
5. field of research (for example: epidemiology, public health, statistics, medicine):
<p>Biochemistry Biotechnology Public health Medicine</p>
6. for which levels is the research line applicable (undergraduate, master, doctorate, post-doctorate/teaching staff)
<p>Master Doctorate</p>

1. research line 3:
Tropical forest dynamics along gradients of resource availability
2. general description of the research line:
Our research has concentrated on studying the proximal and distal effects of high precipitations on the functioning of tropical rain forests. Studies in montane ecosystems indicate that carbon and nutrient cycles are altered in forests exposed to excess precipitation (i.e., above plant demand). High rainfall is related to poor oxygen availability to soil organisms, lower decomposition and mineralization rates of soil organic matter, reduced soil fertility and lower forest productivity. Yet, the effects of high precipitations on ecosystem dynamics are very poorly known, particularly in species rich tropical rainforest where plants may have evolved mechanisms to cope with deficiencies in resource availability. To address these questions we work on some of the wettest forests on Earth (ca. 11,000 mm per year) and use conventional and state-of-the-art methodological approaches to get a better understanding of processes underlying ecosystem dynamics.
3. specific subtopics within the research line:
These are some specific topics we work on: - Estimation of ecosystem carbon turnover time using stable (¹³ C) and radioactive isotopes (¹⁴ C) - Temporal changes in forest productivity in everwet tropical forests - Ecological stoichiometry (e.g., ratios of nitrogen, carbon and phosphorous in plant tissues and soils) - Forest structure and allometric relationships - Plant community ecology
4. contact person for interested students/teaching staff:
Juan M. Posada juan.posada@urosario.edu.co , posadaj@gmail.com
5. field of research (for example: epidemiology, public health, statistics, medicine):
Ecosystem ecology, tropical plant ecology, plant physiological ecology
6. for which levels is the research line applicable (undergraduate, master, doctorate, post-doctorate/teaching staff)
Master, doctorate, post-doctorate, teaching staff

1. research line 4:
Spatial and temporal scaling of photosynthesis
2. general description of the research line:
Our second line of research focuses on identifying key principles of organization of plants and their application to the scaling of photosynthesis from leaves to ecosystems. We are testing the hypothesis that plants are organized to maximize photosynthetic light use efficiency at the leaf and canopy scale. Our research is based on detailed measurements of light and gas exchange in leaves of canopy tree species. We also use the functional-structural tree model LIGNUM (http://www.metla.fi/metinfo/kasvu/lignum/index-en.htm) to simulate tree growth and find optimal distributions of leaf angles and leaf photosynthetic capacity along light gradients. In addition, we have recently developed a new model to simulate the acclimation of leaves in different light environments.
3. specific subtopics within the research line:
Here is a list of some specific topics we work on: - Application of functional-structural plant models to understand the principles of organization of plants and their evolution - Gas exchange at the leaf and ecosystem scale - Stress physiology - Acclimation and phenotypic plasticity of leaves to different environmental conditions - Plant architecture
4. contact person for interested students/teaching staff:
Juan M. Posada juan.posada@urosario.edu.co , posadaj@gmail.com
5. field of research (for example: epidemiology, public health, statistics, medicine):
Plant physiological ecology, physiological evolution
6. for which levels is the research line applicable (undergraduate, master, doctorate, post-doctorate/teaching staff)
Master, doctorate, post-doctorate, teaching staff

1. research line 5:
Biomarkers in cancer
2. general description of the research line:
<p>Our research has concentrated in the identification of molecular biomarkers useful in early diagnosis, monitoring and treatment of cancer.</p> <p>Cancer is a disease caused by multiple factors and when it is detected on time it may be curable. While breast cancer is most common in women from undeveloped countries and lung cancer is predominant in men worldwide, melanoma and ovarian cancer are the most aggressive. Great progress in prevention programs and early diagnosis of cancer can be made with a new knowledge of the genetic components present in the different populations. Those components are associated with the disease; in some populations these genetic variants may represent a risk factor for one population while these same components are a protective factor for another population. Research has being conducted to identify genetic factors associated with breast cancer, melanoma and ovarian cancer in Colombian individuals from tissue and blood samples.</p>
3. specific subtopics within the research line:
<p>These are some specific topics we work on:</p> <ul style="list-style-type: none"> - Genetic factors associated with breast cancer in Colombian population. - Analysis of the expression of biomarkers of breast cancer from Colombian samples. - Polymorphisms of genes associated with response to UV radiation and its relationship to development of malignant melanoma skin. - Relation between the dynamic of telomeres, Telomerase expression and activity, and TRF-2 expression with the cellular senescence on a tissue with sensitivity to develop ovarian cancer (ESO)
4. contact person for interested students/teaching staff:
<p>Sandra Ramírez sandra.ramirez@urosario.edu.co</p>
5. field of research (for example: epidemiology, public health, statistics, medicine):
Biomedicine
6. for which levels is the research line applicable (undergraduate, master, doctorate, post-doctorate/teaching staff)
Doctorate and post-doctorate

1. research line 6:
Cellular death
2. general description of the research line:
The aims of this research line are to study the molecular mechanisms of cellular death associated to neurodegenerative diseases and sepsis and to evaluate anti-apoptotic strategies with therapeutic potential
3. specific subtopics within the research line:
<ul style="list-style-type: none"> - Endothelium apoptosis induced by endotoxins (ceramide) - Endothelial apoptosis induced by <i>Staphylococcus aureus</i> infection - Anti-apoptotic strategies and activation of PI3K/Akt survival pathway
4. contact person for interested students/teaching staff:
Luisa Matheus luisa.matheus@urosario.edu.co
5. field of research (for example: epidemiology, public health, statistics, medicine):
Molecular biology
6. for which levels is the research line applicable (undergraduate, master, doctorate, post-doctorate/teaching staff)
doctorate

1. research line 7:
Cost-effectiveness analysis of health interventions to reduce the risk of chronic diseases (added 2010-04-23)
2. general description of the research line:
Chronic diseases are a main health problem in Latin America. Given the limited resources health care systems face in developing countries, including Colombia, evidence on the cost-effectiveness of interventions to reduce their risk, is useful to prioritize those that have the largest impact on population health at the lowest cost. For this research line, there's currently a particular interest in the field of cardiovascular diseases in Colombia. Diabetes and asthma are other fields of interest.
3. specific subtopics within the research line:
<ul style="list-style-type: none"> • disease modeling • cost-effectiveness analysis • budget impact on health premiums
4. contact person for interested students/teaching staff:
Mónica Ortegón.,MD;DSc monica.ortegon@urosario.edu.co
5. field of research (for example: epidemiology, public health, statistics, medicine):
Health Economics, Public Health, Epidemiology
6. for which levels is the research line applicable (undergraduate, master, doctorate, post-doctorate/teaching staff)
Master and Doctoral students

1. research line 8:
Socioeconomic determinants of health (added 2010-04-23)
2. general description of the research line:
Inequalities among socioeconomic groups are one of the main challenges of public health. The solution to health inequalities demands the formulation and implementation of policies that cover society as a whole, and are capable of influencing social determinants of health. A previous step to policy formulation is the description and quantification of health inequalities. This research line aims at describing and analysing the magnitude of health inequalities in Colombia. A primary source of information is Colombia's recent National Health Survey (2008).
3. specific subtopics within the research line:
* Magnitude of health inequalities in Colombia
4. contact person for interested students/teaching staff:
Mónica Ortegón.,MD;DSc monica.ortegon@urosario.edu.co
5. field of research (for example: epidemiology, public health, statistics, medicine):
Public Health, Epidemiology, Health Economics,
6. for which levels is the research line applicable (undergraduate, master, doctorate, post-doctorate/teaching staff)
Master and Doctoral students

1. Research line 9:
Equity in the access and efficiency of integrated health services networks (IHSN) in Colombia and Brazil. (on going EU funded, FP7 project) (added 2010-04-23)
2. General description of the research line:
The purpose of this project is to assess the impact of different types of integrated health networks in a) health care access and b) the efficiency in health care provision in Colombia and Brazil.
3. Specific subtopics within the research line:
<ol style="list-style-type: none"> 1. The approach of policies concerning IHSN and its objectives (policy analysis and the opinion of stakeholders about these policies). 2. The continuum of health care access in IHSN from the perspective of stakeholders 3. Health care coordination from the perspective of stakeholders 4. The continuum of health care in patients with breast cancer 5. The continuum of health care in patients with diabetes mellitus 6. Efficiency in IHSN 7. Context and organizational factors of the IHSN 8. Equity in health care access
4. contact person for interested students/teaching staff:
Amparo Susana Mogollón Pérez, PhD. Coordinator, Equity LA Project for Colombia. Amparo.mogollon@urosario.edu.co
5. field of research (for example: epidemiology, public health, statistics, medicine):
Public Health
6. for which levels is the research line applicable (undergraduate, master, doctorate, post-doctorate/teaching staff)
Master, Doctorate

1. research line 10:
Medical genetics and dysmorphology (added 2010-04-23)
2. general description of the research line:
Diagnosis and management of hereditary disorders and all kind of applications of genetics to medical care, diagnosis, management and genetic counseling, as well as research on the causes and inheritance of genetic disorders.
3. specific subtopics within the research line:
<ul style="list-style-type: none"> Congenital anomalies Nomenclature Nosology Genes Proteins Chromosomes Neurological diseases Management Genetic counseling
4. contact person for interested students/teaching staff:
Carlos M. Restrepo, MD, PhD. carlosmrestrepo@gmail.com
5. field of research (for example: epidemiology, public health, statistics, medicine):
Human and medical genetics
6. for which levels is the research line applicable (undergraduate, master, doctorate, post-doctorate/teaching staff)
<ul style="list-style-type: none"> Undergraduate Master Doctorate Post-doctorate Teaching staff

1. research line 11:
Pharmacogenetics in health (added 2010-04-23)
2. general description of the research line:
Study of genetic variation related with drug response.
3. specific subtopics within the research line:
Population studies Adverse reactions Poor metabolizers
4. contact person for interested students/teaching staff:
Dora J. Fonseca, Biol. MSc. dfonseca@urosario.edu.co
5. field of research (for example: epidemiology, public health, statistics, medicine):
Human and medical genetics
6. for which levels is the research line applicable (undergraduate, master, doctorate, post-doctorate/teaching staff)
Undergraduate Master Doctorate Post-doctorate Teaching staff

1. research line 12:
Functional genomics and molecular genetics of selected diseases (added 2010-04-23)
2. general description of the research line:
Functional genomics is involved in the use of information obtained by genome projects and <i>in vitro</i> , <i>in silico</i> or <i>in vivo</i> knowledge, to describe gene function, protein function and interactions between them. Functional genomics attempts to answer questions about the function of DNA at gene, transcripts and protein levels, using both low or high-throughput methods.
3. specific subtopics within the research line:
Human reproduction Craneofacial disorders
4. contact person for interested students/teaching staff:
Paul Laissue, MD, PhD. paullaissue@yahoo.com
5. field of research (for example: epidemiology, public health, statistics, medicine):
Human and medical genetics
6. for which levels is the research line applicable (undergraduate, master, doctorate, post-doctorate/teaching staff)
Master Doctorate Post-doctorate

1. research line 13:
Studies on Mental Health (added 2010-04-23)
2. general description of the research line:
Our research line is to develop research in the field of mental health mainly based on a clinical approach. The epistemological, theoretical and practical references of our investigations come from social studies, psychology (including different approaches in psychology as systemic, humanistic, psychodynamic, cognitive, behavioral and integral models). Our goal is to stimulate a permanent discussion between different perspectives of contemporary psychology in order to find best answers in the analysis of mental health. Even if, the psychology is the principal reference of our works, we share research topics and methods with other disciplines as social sciences, public health, psychiatry, medicine and biological sciences. Our interest is to study human individual as an entity which results and develops itself in the intersection of external (social, political, economical, cultural, environmental) and internal (psychological and biological) forces and conditions. In this terms, our regard over human being is established over the dimension of particularity; a position which can be used as an initial and transitory viewpoint always demanding an extension of the subject of human nature, over sociocultural reflections concerning the collectivities.
3. specific subtopics within the research line:
<ul style="list-style-type: none"> - Positive Psychology (humanistic and integral approach) - Family and Communitarian Mediation (systemic approach) - Mental Health and Cultural Studies (psychodynamic approach) - Health and Clinical Psychology (cognitive, behavioral approach) - Clinical Psychology (psychodynamic approach)
4. contact person for interested students/teaching staff:
Silvia Rivera Largacha, PhD
5. field of research (for example: epidemiology, public health, statistics, medicine):
Psychology, Cultural and Social Studies, Public Health
6. for which levels is the research line applicable (undergraduate, master, doctorate, post-doctorate/teaching staff)
Undergraduate and master

1. research line 14:
Biomedical-Clinical Engineering (added 2010-04-23)
2. general description of the research line:
<p>Clinical engineers maintain a large amount of information about their health care institution's medical devices. Maintenance histories, breakdowns, safety protocols, risks to patients and staff associated with device or system misapplication. The Clinical engineer is a biomedical engineer who works in hospital to maintain technology in optimal conditions.</p> <p>Our research line develops technology management programs included: Development and Implementation of computers algorithm for Decision making in biomedical technology acquisition processes; Failure mode and survival analysis for biomedical technology; Evaluation of contract maintenance provider's performance using statistical survival analysis; the development of risk priority level calculation of medical devices used for work orders dispatching and prioritization; development of application service providers information platforms for technology management.</p>
3. specific subtopics within the research line:
<ol style="list-style-type: none"> 1. Decision making in biomedical technology acquisition processes 2. Failure mode and survival analysis for biomedical technology 3. Evaluation of contract maintenance provider's performance using statistical survival analysis 4. Development of application service providers information platforms (ASP multi tier multiplatform, Multilanguage (ORACLE-J2EE))
4. contact person for interested students/teaching staff:
<p>Prof. Antonio Miguel Cruz, PhD</p> <p>Antonio.miguel@urosario.edu.co</p> <p>Phone: 316-572-5891</p>
5. field of research (for example: epidemiology, public health, statistics, medicine):
<ol style="list-style-type: none"> 1. Operational research 2. Mathematics and Statistic 3. Biomedical Engineering 4. Computer Sciences (Software engineering and Artificial intelligence)
6. for which levels is the research line applicable (undergraduate, master, doctorate, post-doctorate/teaching staff)
<ol style="list-style-type: none"> 1. Master (for receiving in Colombia) 2. Doctorate (for receiving in Colombia) 3. Post-Doctorate/Teaching staff (mobility to Europe)