International Health

Global Health Policy

http://www.ghp.m.u-tokyo.ac.jp

Our mission is to improve population health by enhancing accountability and improving evidence base of global (both domestic and international) health programmes through the provision of best possible information and rigorous monitoring and evaluation. The department's members generate knowledge and ideas through their research, strengthen technical and leadership skills through educational programs, and enhance national capacities through collaborative projects, especially in the developing world.

The priority areas of research are:

1. Health outcome research (mortality, morbidity and disability, health services, cost-effectiveness of interventions, disease modeling, resource flows, and impact evaluation, including tracking the progress towards the Millennium Development Goals and contribution to the Global Burden of Disease study);
2. Health system performance assessment, including the analysis of health system inputs (evidence on financing and human resources), outputs (service delivery, effective coverage), and impact (health status); and
3. Health and foreign policy (e.g. global health architecture and governance, G8 and global health, donor commitments).

Finally, the fundamental role of the Department is to produce the next generations of leaders in global health.

Community and Global Health

http://www.ich.m.u-tokyo.ac.jp/

Our Department aims at bringing together clinical, public health and social science research to address following aspects of international health. We also conduct international cooperation activities with the U.N., JICA, local government and NGOs in developing countries. Our educational activities provide practical trainings for students, who are enthusiastic about contributing to research in international health and to international cooperation.

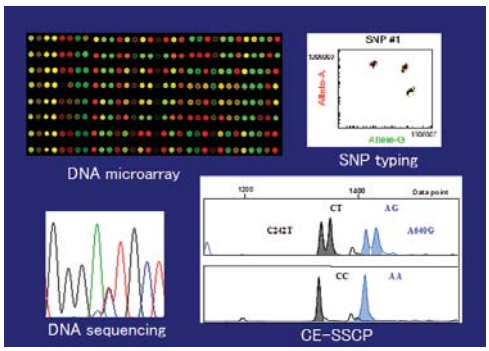
- Health promotion in developing countries
- Health and human rights
- Conflicts and health
- School health
- Infectious diseases (HIV/AIDS, TB, Malaria etc.)
- Nutrition
- Health policy and its impact on health of community people
- Global health workforce policy

Human Genetics

http://www.humgenet.m.u-tokyo.ac.jp/

Department of Human Genetics is broadly interested in the human genome diversity, especially in the Asian populations. Specifically, we are using genomic research tools including SNP and microsatellite analyses, as well as gene expression profiling, to better understand the genetic background of a variety of complex diseases, especially bone and joint diseases, infectious diseases and sleep disorders.

- Theoretical and experimental analyses on the genetics of complex diseases
  - Development of statistical approaches for susceptibility gene mapping in complex diseases
  - Comprehensive genetics of bone and joint diseases
  - Host susceptibility factors to infectious diseases
  - Molecular mechanisms of sleep disorders
- Development of new methodologies for genomic polymorphism and gene expression analyses
- Analysis on the genome diversity of Asia-Pacific populations
- Development of methodologies for the analysis of protein interactions

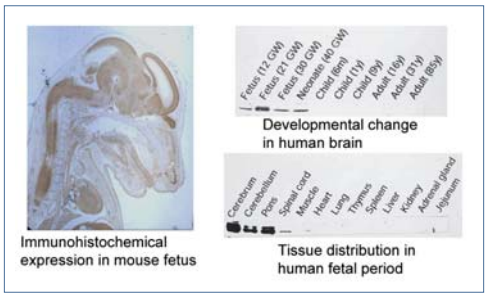


Tools for genomic analyses

Developmental Medical Sciences

Founded in 1966 as the Department of Maternal and Child Health, this department has devoted itself to the research and education on the maintenance and promotion of mothers' and children's health, including studies of infectious diseases, nutritional disorders and congenital anomalies. At present, the main research activities are experimental and epidemiological studies on the etiology (genetic and environmental factors), pathogenesis, prevention and treatment of various childhood brain disorders (congenital and acquired) that cause mental and motor disabilities and epilepsy, from the viewpoint of international health science and developmental neuroscience.

- Studies on developmental brain disorders
  - Abnormal neuronal differentiation and size control (tuberous sclerosis)
  - Neuronal migration disorders (lissencephaly, polymicrogyria)
  - Perinatal brain injury (periventricular leukomalacia)
  - Postnatal brain injury (acute encephalopathy)
  - Inherited metabolic disorders (peroxisomal and mitochondrial disorders)
- Molecular epidemiology of infectious diseases (diarrheal viruses)
- Field studies of maternal and child health (malnutrition, obesity)



Time- and space-specific expression of doublecortin, a protein regulating neuronal migration

Human Ecology

http://www.humeco.m.u-tokyo.ac.jp/

Ecological understanding of health and survival of contemporary human populations through the analyses of nutritional, demographic, and environmental aspects of each population is our primary goal. Both fieldworks on various Asia-Oceania populations as well as experimental studies dealing with nutrition and environmental chemicals are conducted, which would serves as the basis in challenging the International Health issues.

- Mechanistic analyses of the effect of subsistence transitions on the health and environment in rural and urban communities in developing countries
- Application of GPS, GIS, and remote sensing to health ecology and international health
- Exposure-effects evaluation of chemical pollution of watershed in rural Indonesian children
- Nutritional ecology, subsistence ecology, medical anthropology and biological demography in Asia-Oceania populations
- Development effects of perinatal exposures to heavy metals, pesticides, or endocrine disrupting chemicals
- Modulating effects of nutrients and nutritional status on environmental hazardous chemicals
- Sustainable society and health

At a school in a survey area, West Java, Indonesia

Biomedical Chemistry

The aim of our department is to contribute to the overall global health and welfare through basic research. Our current interests are: the energy metabolism of humans, parasites, and bacteria; and RNA and RNA-binding proteins.

- Human succinate dehydrogenase complex and mitochondrial myopathy
- *Ascaris suum* and *Caenorhabditis elegans*
- Molecular mechanism of adaptation to low oxygen tension
- Mitochondrial quinol-fumarate reductase
- *C. elegans* as a model system of parasitic nematodes and ageing
- Malaria and Trypanosome: characterization of mitochondria as a target for chemotherapy
- *Escherichia coli* and *Mycobacterium*: respiratory enzymes and regulation of energy supply
- RNA and RNA-binding proteins
- Mitochondriral translation system
- RNA biogenesis of Eukarya and Archaea

Free-living nematode Caenorhabditis elegans expressing a recombinant green fluorescent protein inside the body under the control of the promoter of the iron-sulfur subunit (Ip) gene of succinate-ubiquinone reductase (complex II)