

## **NATIONAL CENTER FOR ENVIRONMENTAL HEALTH (CUG)**

Plans, directs, and coordinates a national program to maintain and improve the health of the American people by promoting a healthy environment and by preventing premature death and avoidable illness and disability caused by non-infectious, non-occupational environmental and related factors. In carrying out this mission, the Center: (1) Assists in increasing the capacity of States to prevent and control environmental public health problems through training, technology transfer, grants, cooperative agreements, contracts, and other means; (2) provides services, advice, technical assistance, and information to State and local public health officials, other Federal agencies, academic, professional, international, and private organizations, and the general public; (3) plans for and provides emergency response assistance to States, localities, other Federal agencies, and international organizations; (4) identifies, designs, develops, implements, influences, and evaluates interventions to reduce or eliminate environmental hazards, exposures to these hazards, and adverse health outcomes resulting from exposure to these hazards; (5) measures, estimates, and predicts the incidence of adverse health outcomes through surveillance, surveys, and registries; (6) measures, estimates, and predicts the incidence of exposure to substances, conditions, or forces in the environment through surveillance, surveys, and registries; (7) describes and evaluates associations between environmental exposures and adverse health outcomes by using information from surveillance systems, surveys, registries, epidemiologic and laboratory studies, and by developing and maintaining a broad base of normative and diagnostic laboratory data; (8) develops and validates advanced laboratory technology for diagnosing selected chronic diseases and for assessing exposure and health effects in persons exposed or potentially exposed to environmental toxicants or other environmental agents; (9) develops and validates new epidemiologic techniques for use in study of the effects of exposure to environmental hazards; (10) provides leadership in coordinating efforts in States and in national and international organizations concerned with standardizing selected laboratory measurement systems; (11) conducts special programs, e.g., coordination and review of Environmental Impact Statements; (12) in carrying out the above functions, collaborates, as appropriate, with other Centers/Institute/Offices of CDC.

### Office of the Director (CUG1)

(1) Manages, directs, coordinates, and evaluates all health-related programs of NCEH and ATSDR; (2) provides overall leadership in health-related activities for hazardous substances, hazardous waste sites and chemical releases; (3) provides overall coordination for the research programs and science policies of the agencies; (4) develops goals and objectives and provides leadership, policy formulation, scientific oversight, and guidance in program planning and development; (5) provides overall programmatic direction for planning and management oversight of allocated resources, human resource management and administrative support; (6) provides information, publication and distribution services to NCEH/ATSDR; (7) maintains liaison with other Federal, State, and local agencies, institutions, and organizations; (8) coordinates NCEH/ATSDR program activities with other CDC components, other Federal, State and local Government agencies, the private sector, and other nations; and (9) directs and coordinates activities in support of the Department's Equal Employment Opportunity program

and employee development. (Approved 11/5/2010)

### Office of Communication (CUG12)

The Office of Communication (OC): (1) Serves as the principal advisor to the center director and divisions on communication and marketing science, research, practice, and public affairs; (2) leads center strategic planning for communication and marketing science and public affairs programs and projects; (3) analyzes context, situation, and environment to inform center-wide communication and marketing programs and projects; (4) ensures use of scientifically sound research for marketing and communication programs and projects; (5) ensures accurate, accessible, timely, and effective translation of science for use by multiple audiences; (6) leads identification and implementation of information dissemination channels; (7) provides communication and marketing project management expertise; (8) collaborates with external organizations and the news, public service, and entertainment and other media to ensure that scientific findings and their implications for public health reach the intended audiences; (9) collaborates closely with divisions to produce materials tailored to meet the requirements of news and other media channels, including press releases, letters to the editor, public service announcements, television programming, video news releases, and other electronic and printed materials; (10) coordinates the development and maintenance of accessible public information through the Internet, social media and other applicable channels; (11) provides training and technical assistance in the areas of health communication, risk communication, social marketing, and public affairs; (12) manages or coordinates communication services such as broadcast, graphics, photography, writing, and editing; (13) provides editorial services, including writing, editing, and technical editing; (14) facilitates internal communication to center staff and allied audiences; (15) supervises and manages OC activities, programs, and staff; (16) serves as liaison to internal and external groups to advance the center's mission; (17) collaborates with the CDC Office of the Associate Director for Communication on media relations, electronic communication, health media production, and brand management activities; (18) collaborates with the Office of Public Health Preparedness and Response and other NCEH/ATSDR entities to fulfill communication responsibilities in emergency response situations; (19) collaborates with other CDC Centers/Institute/Offices in the development of marketing communications targeted to populations that would benefit from a cross-functional approach; and (20) ensures NCEH/ATSDR materials meet CDC and Department of Health and Human Services standards. (Approved 9/27/2010)

### Office of Policy, Planning, and Evaluation (CUG13)

(1) Coordinates, develops, recommends and implements strategic planning and tracking for NCEH/ATSDR; (2) develops and manages an evaluation program to ensure adequacy and responsiveness of NCEH/ATSDR activities; (3) participates in reviewing, coordinating, and preparing legislation, briefing documents, Congressional testimony, and other legislative matters; (4) maintains liaison and coordinates with other Federal agencies for program planning and evaluation; (5) assists in the development of NCEH/ATSDR budget and program initiatives; (6) provides liaison with staff offices and other officials of CDC; (7) monitors and prepares reports on health-related activities to comply with provisions of relevant legislation;

(8) coordinates the development, review, and approval of Federal regulations, Federal Register announcements, request for OMB clearance, and related activities; (9) develops and strengthens strategic partnerships with key constituent groups; and (10) facilitates communication between NCEH/ATSDR and its partners. (Approved 12/16/2003)

#### Office of Financial and Administrative Services (CUG14)

(1) Plans, manages, directs, and conducts the administrative and financial management operations of NCEH/ATSDR; 2) reviews the effectiveness and efficiency of administration and operation of all NCEH/ATSDR programs; (3) develops and directs systems for human resource management, financial services, procurement requisitioning, and travel authorization; (4) provides and coordinates services for the extramural award activities of NCEH/ATSDR; (5) formulates and provides overall programmatic direction for planning and management oversight of allocated resources, human resource management and administrative support; and (6) develops and directs a system for cost recovery. (Approved 9/29/2004)

#### Division of Emergency and Environmental Health Services (CUGB)

(1) Provides national and international leadership for the coordination, delivery, and evaluation of emergency and environmental health services, with emphasis on uniquely exposed or susceptible populations; (2) ensures the participation and involvement of the public and other stakeholders in the Division's programs, as appropriate; (3) maintains liaison with, and serves as a primary Federal resource for, emergency and environmental health service delivery to Federal, state, and local agencies; national, international, and private organizations; and academic institutions; (4) works in collaboration with other NCEH Divisions and CIOs throughout CDC to respond to, and where designated, coordinate PHS activities associated with international complex humanitarian emergencies, and with emergency response to technological and environmental disasters; (5) serves as the national focus for conducting cruise-line vessel sanitation inspections and maintaining sanitation standards including conducting diarrheal disease surveillance and disease outbreak investigations on vessels; (6) coordinates the reviews of Federal Environmental Impact Statements for HHS; (7) serves as the HHS and CDC focus for ensuring public health protection associated with chemical demilitarization processes and activities conducted by the Department of Defense and its contractors; (8) plans, develops, implements, and evaluates training programs, workshops, technical manuals and guidelines, and model standards to strengthen the technical capacity of environmental health practitioners in constituent agencies and organizations; (9) serves as the lead agency for coordinating efforts designed to achieve national program objectives and performance standards related to the elimination and prevention of childhood lead poisoning; and (10) coordinates Division activities with other CDC organizations and HHS agencies, as appropriate. (Approved 12/16/2003)

#### Office of the Director (CUGB1)

Plans, directs and manages the activities of the Division. (Approved 12/16/2003)

#### Environmental Public Health Readiness Branch (CUGBB)

(1) Serves as the HHS and CDC focus for chemical demilitarization-related activities; (2) conducts reviews of Department of Defense (DOD) chemical demilitarization plans, calling on appropriate experts within and outside PHS; (3) reviews air monitoring and analytical plans and performance for demilitarization of chemical weapons; (4) ensures that adequate provisions are made for public health and worker safety during chemical demilitarization activities; (5) coordinates with DOD agencies and state and local health and environmental agencies activities concerning chemical demilitarization plans and operations, including the evaluation of medical readiness; (6) performs site visits prior to, and during, chemical demilitarization operations; (7) reviews and provides relevant public health information to health professionals and the public, and ensures the participation and involvement of the public and other stakeholders, as appropriate; (8) reviews on-site emergency response plans for chemical demilitarization activities; (9) coordinates the reviews of Federal Environmental Impact Statements for HHS; (10) coordinates Branch activities through the Division and other CDC organizations; other Federal, state, and local government agencies; and other public and private organizations, as appropriate; (11) provides public health guidance and resources based on scientific evidence to state, local and international public health departments so that they may prepare and respond to the environmental public health impact caused by intentional or unintentional events; (12) develops capacity within the states to integrate new and existing epidemiological and scientific principles into operational and programmatic expertise in emergency preparedness; (13) identifies and shares best practices from all academic and operational fields to develop appropriate technical assistance for state and local departments of health for all-hazards preparedness and response; (14) works in collaboration with other NCEH Divisions and CIOs throughout CDC to respond to, and, where designated, provide technical assistance on PHS activities associated with emergency response to technological and environmental disasters; (15) provides technical assistance, as appropriate, on health consultations and assistance in the medical care and testing of exposed individuals to private or public health care providers in cases of public health emergencies; (16) serves as the focal point for technical assistance related to the development of contingency plans, training, and operational liaison activities with other agencies and response teams engaged in emergency responses; and (16) develops, implements, and manages programs to enhance the emergency response readiness of CDC and other national, regional, state, local, and international public health organizations. (Approved 12/16/2003)

#### Environmental Health Services Branch (CUGBC)

(1) Develops methods and conducts activities to ensure the translation of new technology and prevention research findings into prevention and control programs and activities at the state and local levels; (2) develops, implements, and evaluates training programs and workshops, and develops model performance standards to strengthen professional competency among environmental health practitioners at the state and local levels; (3) develops technical guidelines and model standards for environmental health program areas addressed at the state and local levels; (4) supports state and local environmental health programs through information exchange, direct technical assistance, and evaluation of existing programs; (5) supports the professional development of environmental health practitioners through collaboration with undergraduate and

graduate schools of public and environmental health, state and local health agencies, and others; and (6) promotes and assists in the determination and investigation of environmental antecedents and solutions to disease problems. (Approved 12/16/2003)

#### Vessel Sanitation Branch (CUGBE)

(1) Conducts comprehensive sanitation inspections on vessels that have a foreign itinerary, call on U.S. ports, and carry 13 or more passengers; (2) ensures and coordinates epidemiologic investigations of diarrheal disease outbreaks occurring aboard vessels within the Branch's jurisdiction; (3) conducts ongoing surveillance of diarrheal diseases reported on vessels under the Branch's jurisdiction; (4) plans, implements, and evaluates sanitation training courses and workshops to help strengthen the technical capacity of shipboard management personnel; (5) reviews plans for vessel renovations and new vessel construction, and conducts construction inspections; (6) disseminates information on vessel sanitation inspections and other related information to the traveling public; and (7) provides direct technical assistance to cruise lines, other U.S. government agencies, foreign governments, and others on the development and maintenance of vessel sanitation standards and policies. (Approved 12/16/2003)

#### Healthy Homes and Lead Poisoning Prevention Branch (CUGBG)

(1) Establishes goals and objectives for a national healthy homes/lead poisoning prevention program for CDC, with emphasis on home health hazard reduction and childhood lead poisoning prevention; (2) works with the U.S. Department of Housing and Urban Development, U.S. Environmental Protection Agency, U.S. Department of Agriculture, U.S. Department of Energy, National Institute of Standards and Technology and other agencies to develop and implement an integrated national program to reduce home health hazards and eliminate childhood lead poisoning; (3) provides consultation and assistance to Federal agencies, State and community health agencies, and others, in planning, developing, and evaluating healthy homes and childhood lead poisoning prevention programs; (4) develops, conducts, and evaluates epidemiologic research on home health hazards and childhood lead poisoning, their causes, geographic distribution, trends and risk factors; (5) assists State and local government agencies as well as the international community, by providing epidemiologic assistance for special studies and investigations; (6) develops and maintains a system for the collection and dissemination of information on program issues, research findings and health communications related to program activities; (7) develops and helps implement, in concert with other Federal agencies, national organizations, and other appropriate groups, a training agenda for health professionals and workers in healthy homes and childhood lead poisoning prevention activities; (8) serves as the lead agency for coordinating efforts designed to achieve national program objectives and performance standards related to the reduction of home health hazards and prevention of childhood lead poisoning; (9) coordinates Branch activities through the Division with other components of CDC, other Federal, State, and local government agencies; and other public and private organizations, as appropriate; and (10) provides support to the Advisory Committee on Childhood Lead Poisoning Prevention in planning meetings, staffing members, drafting policy statements, and developing an agenda of issues to be addressed by the Committee. (Approved 11/10/2009)

### Division of Environmental Hazards and Health Effects (CUGC)

(1) Conducts and disseminates findings of surveillance, epidemiologic research, and other scientific investigations of human exposure to environmental hazards, including radiation, man-made and naturally occurring physical, chemical, and biological (noninfectious) agents, and resultant and presumed health effects, including environmentally-related syndromes of unknown etiology; (2) develops methods and conducts activities to assess risk to human populations from exposure to environmental hazards; (3) plans, develops, implements, and maintains surveillance systems, including registries relating to exposure to environmental hazards, e.g., lead, radiation, weather phenomena, and natural hazards, and to resultant diseases or syndromes; (4) provides epidemiologic emergency response to natural and other environmental disasters; (5) maintains liaison with and serves as a primary Federal resource of specialized technical and managerial assistance and consultation to Federal, State and local agencies, and other national, international, and private organizations on a wide range of environmental health issues including natural and other environmental disasters; (6) provides consultation and technical assistance on the development and implementation of environmental health programs addressing the prevention of human health problems associated with environmental toxicants, climate extremes, lead hazards, radiation hazards, and other health hazards; (7) develops mechanisms to disseminate information on environmental health risks and technologies to State and local health departments, and to other agencies with related responsibilities; (8) assists States and local governments in the development of personnel, training programs, and other services to deal with chemical and other environmental health hazards; (9) coordinates Division activities with other CDC organizations and PHS agencies, as appropriate.

### Radiation Studies Branch (CUGCB)

(1) Develops methods and conducts community-based, nonworker studies through an interdisciplinary approach linking the fields of environmental dosimetry, radiation epidemiology, and risk assessment to establish the risk and potential health effects from exposure to ionizing radiation and concomitant toxins released from energy-related enterprises; (2) develops quantitative methods and applications for use in environmental dose reconstructions, epidemiologic studies, and risk assessment; (3) develops methods to effectively communicate results of environmental dose reconstruction and epidemiologic and risk assessment studies to the public; (4) develops a public involvement program that provides for effective participation by the public in Department of Energy (DOE) site-specific studies; (5) develops methods and conducts studies to determine the possible health effects from exposure to radon and non-ionizing radiation; (6) provides funding mechanisms for extramural research activities; (7) provides consultation and technical assistance to State and local governments, including health departments, on the potential health effects of exposure to radiation; (8) collaborates with other Federal and international agencies on radiation-related health research; (9) coordinates Branch activities through the Division with other CDC organizations; other Federal, State, and local government agencies; and other public and private organizations, as appropriate.  
(Approved 6/15/1993)

### Air Pollution and Respiratory Health Branch (CUGCC)

(1) Conducts epidemiologic research and investigations of non-occupational human exposure to airborne environmental agents and their potential health effects; (2) conducts epidemiologic research and investigations of respiratory diseases, such as asthma, and other illnesses related to air pollutants, and outbreaks of acute respiratory diseases related to environmental hazards; (3) conducts epidemiologic research into the potential health effects of phenomena that may occur as the result of changes in atmospheric composition; (4) develops methods for assessing risk to human health from both airborne environmental agents and changes in atmospheric composition, and, in selected circumstances, conducts actual risk assessments; (5) designs and evaluates public health intervention strategies for reducing the effect of air pollution on health, including the development of surveillance mechanisms for non-occupational respiratory diseases; (6) provides consultation to state, local, private, international, and other Federal agencies on non-occupational environmental issues related to airborne agents or atmospheric composition; (7) coordinates activities through the Division with other components of CDC; other Federal, state, and local government agencies; and other public and private organizations, as appropriate.

### Environmental Health Tracking Branch (CUGCD)

(1) Coordinates development of training, capacity, and infrastructure to support and sustain the national environmental public health tracking network; (2) develops and maintains quality partnerships with key stakeholders; (3) facilitates communication and coordination of environmental public health tracking activities across and within health and environmental agencies; (4) facilitates and conducts scientific activities for environmental public health tracking; (5) disseminates, communicates, and promotes use of environmental public health tracking information to diverse audiences; and (6) conducts continuous quality improvement for environmental public health tracking activities. (Approved 12/16/2003)

### Health Studies Branch (CUGCE)

(1) Conducts epidemiologic research and investigations of human exposure and health effects related to environmental hazards of the following types: (a) physical agents (except radiation), including heat, cold, and other acute climatic conditions; (b) chemical and metal agents (except lead and its compounds and air pollutants), including those causing acute effects and other more long-term effects such as carcinogenesis, mutagenesis, and teratogenesis; (c) biological agents, including both technologic and natural toxins and/or allergens but specifically excluding airborne pollutants and infectious disease-causing agents; (d) natural and technologic disasters, including natural events such as floods, tornadoes, cyclones, earthquakes, and volcanic eruptions, and disasters resulting from the activities of man; and (e) diseases and syndromes of uncertain etiology and/or potentially related to environmental hazards; (2) develops appropriate methods and activities directed toward assessing risk to human populations from exposure to environmental hazards; (3) provides epidemiologic emergency response for and epidemiologic study of natural and other environmental disasters; (4) provides consultation to state, local, and other Federal agencies as well as to international and private organizations on a wide range of environmental health issues; (5) coordinates Branch activities through the Division with other

components of CDC; other Federal, state, and local Government agencies; and other public, private, and international organizations, as appropriate.

#### Division of Laboratory Sciences (CUGD)

(1) Develops and maintains a national laboratory response capability for applying state-of-the-art biomonitoring technology to improve the detection, prevention, and public health management of chemical terrorism emergencies and emergencies resulting from human exposure to toxic chemicals; (2) develops and applies biomonitoring methods for environmental chemicals that identify chemicals to which people are exposed and measures individual exposure levels; (3) applies biomonitoring measurements to determine the exposure of the general U.S. population to selected environmental chemicals, to assess the exposure of special population groups that are known or suspected to be at high-risk of excessive exposure, and to study the relationship between level of exposure and adverse health effects; (4) provides technical assistance, technology transfer, reference laboratory measurements, laboratory standardization programs, and external quality assurance to State and local public health laboratories and health officials; Federal agencies; international organizations; academic, international, and private laboratories; and professional organizations to improve laboratory science and laboratory capacity in the fields of environmental health and selected chronic diseases; (5) develops and validates advanced laboratory technology to assess nutritional and genetic risk factors for environmental disease and selected chronic diseases; and (6) collaborates with other CDC organizations; Federal, State, and local agencies; and private and professional organizations to investigate new or emerging health problems known or potentially related to exposure to environmental chemicals.

#### Inorganic and Radiation Analytical Toxicology Branch (CUGDC)

(1) Develops, maintains, and distributes, as appropriate, analytical methods to measure trace essential and toxic elements in human specimens; (2) applies analytical methods to assess human exposure to chemicals, including surveillance of levels in the population, epidemiologic studies, and emergency-response investigations; (3) provides training, guidance, and assistance to state and local governments, and domestic and international laboratories in the development, maintenance, and technology transfer of analytical capability for measuring trace-essential and toxic elements in specimens from people and animals; (4) develops and maintains analytical capability and expertise, and distributes, as appropriate, standards, reference materials, and protocols for measuring chemicals in response to both terrorist and non-terrorist events; (5) distributes, as appropriate, standards, reference materials, and protocols to assist state, international, and other laboratories in transferring laboratory technology for urine iodine biomonitoring, blood metals biomonitoring, and radiologic analyses; and (6) provides technical assistance and guidance to governmental agencies, academia, and professional societies regarding quality control issues related to biomonitoring for inorganic and radiologic chemicals. (Approved 3/13/2007)

#### Clinical Chemistry Branch (CUGDD)

(1) Provides statistical consultation in areas of research, study design, analysis, reporting, and quality control development for laboratory investigations and environmental health studies to NCEH staff, other Federal agencies, State and local public health departments, and other national and international organizations; (2) provides system analysis, computer programming and interfacing, technical support, and application of computerization and other advanced technology to the resolution of laboratory problems and data analysis, management, reporting, and presentation; (3) maintains reference methods for lipids and lipoproteins that serve as the international point of accuracy and reference for epidemiologic studies and clinical trials which provide the basis for public health strategies to reduce morbidity and mortality due to cardiovascular disease. In this capacity, serves as the WHO Collaborating Center for Reference and Research in Blood Lipids; (4) develops, evaluates, and standardizes analytical methods for the measurement of biochemical markers for assessing disease status and risk for selected chronic diseases; (5) designs and implements collaborative programs with appropriate agencies or professional groups to effect technology transfer, improvement of proficiency and quality, and the standardization of analytical performance among health laboratories involved in clinical and epidemiologic investigations; (6) provides technical assistance and guidance to governmental agencies, professional societies, and the general clinical laboratory community on pre-analytical issues, measurement problems, study design, and reference and quality control material preparation, storage, and handling; and (7) develops, prepares, and distributes purified and biological reference materials used for standardization programs, quality control assessment, and calibration of analytical methods in research.

#### Organic Analytical Toxicology Branch (CUGDE)

(1) Develops and maintains analytical methods to measure selected synthetic and naturally occurring organic chemicals, their metabolites, and reaction products (adducts) in human specimens; (2) applies these analytical methods to assess human exposures to these chemicals for many purposes, including surveillance of levels in the population, epidemiological studies, and emergency response investigations; (3) aids in transferring these methods within Division laboratories and to state, local and other public health laboratories; (4) develops and prepares various matrix-based quality control materials for use in such analyses; and (5) provides review, expert consultation, and original scientific publications/information to Federal, state, local, and international governments and health organizations on topics related to human exposure assessment, organic analytical methodology, high technology analytical instrumentation, preparation and analysis of biological specimens, quality control procedures, laboratory safety, and medical interpretation of laboratory findings.

#### Newborn Screening and Molecular Biology Branch (CUGDG)

(1) Provides leadership, technical consultation and assistance in laboratory testing for newborn screening, genetic and other diseases of public health importance to State Public Health laboratories, Federal agencies, academic centers, professional organizations, international laboratories, and manufacturers of diagnostic products involved in performing relevant laboratory measurements; (2) provides leadership in addressing gene-environment interactions with other DLS and CDC researchers in areas such as environmental health, nutrition, smoking,

etc. to develop or refine tests and conduct assessments; (3) provides leadership, oversight and support for maintaining a dried-blood spot (DBS) and other matrices quality assurance programs for laboratories worldwide that screen for disorders including newborn metabolic conditions as well as genetic-related and other adverse conditions in newborn or that emerge in subsequent life stages; (4) collaborates in the development and implementation of large, population-based genetic repositories of specimens from nationally representative samples of health people, patients, unaffected family members, or unrelated control subjects and disease-based repositories used to study and establish prevalence of genetic risk factors for disease and gene-environment interactions; (5) develops, evaluates, standardizes, and maintains laboratory methods for genetic assays for disease of public health significance, diabetes auto-antibody measurements, immune disorders, DBS assays, and other matrices utilized by newborn screening programs worldwide; and (6) evaluates and refines existing and emerging laboratory technologies for measurement and study of biomarkers for clinical applications and population-based screening for diseases and genetic risk factors of public health importance. (Approved 10/31/2007)

#### Emergency Response and Air Toxicants Branch (CUGDH)

(1) Develops and maintains analytical methods to measure, in human specimens, toxic substances that are known or potential agents for use in chemical terrorism; (2) applies these measurements in response to chemical terrorism emergencies and, as part of a coordinated Federal response, deploys a rapid response laboratory team to assist in obtaining human specimens for analysis; (3) transfers technology, provides training, and provides technical assistance for measurement of chemical agents in human specimens to a network of laboratories that provide additional capacity for responding to chemical terrorism; (4) provides review and expert consultation to Federal, state, local and international governments and health organizations on assessing and interpreting biomonitoring measurements of chemical agents likely to be used in terrorism; (5) for toxic substances of public health concern but unlikely to be involved in chemical terrorism, transfers biomonitoring technology, provides biomonitoring training, and provides technical assistance in biomonitoring to state laboratories, including methods for analyzing both inorganic and organic toxic substances in human specimens; (6) develops and maintains analytical methods to measure organic toxic substances that contaminate air (air toxicants) in human specimens and applies these analytical methods to assess human exposures to these chemicals for many purposes, including surveillance of levels in the population, epidemiological studies, and emergency response investigations; and (7) develops and maintains analytical methods to assess human exposure to tobacco smoke and its chemical constituents and applies these methods to epidemiologic studies of tobacco smoke exposure and related disease.

#### Nutritional Biomarkers Branch (CUGDJ)

(1) Develops and maintains analytical methods and expertise in the measuring and interpreting of physiologic levels of essential nutrients, nonessential nutrients, and relevant metabolites; (2) develops and maintains analytical methods to measure bioactive dietary compounds, other than those needed to meet basic human nutritional needs, that are responsible for changes in health status; (3) applies analytical methods to assess human nutritional status or exposure to

bioactive dietary compounds for purposes including surveillance of levels in the population, epidemiological studies, intervention trails, and emergency-response investigations; (4) provides technical assistance, training, and guidance to national, state, international, and local investigations, surveys, food fortification and clinical studies of nutritional status, prevalence, risk factors, and treatment of chronic diseases; and (5) develops, maintains, and distributes, as appropriate, standards, reference materials, protocols, standardization programs, and external quality assessment programs to assist state, international, and other laboratories in transferring laboratory technology and in establishing and maintaining quality control and calibration of methods for nutritional biomarkers and markers of physiologic changes. (Approved 3/13/2007)