

National Institute of Diabetes and Digestive and Kidney Disease - HNK

(1) Provides leadership for a national program in the three major disease categories of diabetes, endocrinology, and metabolic diseases; digestive diseases and nutrition; and kidney, urologic, and hematologic diseases; (2) plans, conducts, fosters, and supports an integrated and coordinated program of research, investigations, clinical trials, and demonstrations relating to the causes, prevention, methods of diagnosis, and treatment of categorical diseases through: research performed in its own laboratories and clinics, epidemiologic studies, research contracts and grants, and cooperative agreements to scientific institutions and to individuals; (3) supports training of personnel in fundamental sciences and clinical disciplines by individual and institutional research training awards; (4) conducts educational activities, including the collection and dissemination of educational materials on these diseases, with emphasis on the prevention thereof, for health professionals and the lay public; (5) coordinates, with the other research institutes and with all Federal health programs, relevant activities in the categorical diseases; and (6) maintains continuing relationships with institutions and professional associations and with international, national, State and local officials, and voluntary agencies and organizations working in these areas.

Office of the Director - HNK1

(1) Advises the Director, Division Directors, and other key officials on administrative policies and practices; (2) plans, coordinates, and directs management functions such as procurement and office services for the Institute; (3) interprets, analyzes, and implements any new legislation affecting administrative policy, administrative orders, and new concepts affecting the overall mission of the Institute; (4) develops policies on administrative management and prepares and issues procedures and guidelines for implementation; (5) provides staff assistance to Institute personnel in the planning, implementation, and subsequent transfer of records to and from the Federal Records Center; (6) coordinates and provides guidance for Institute Freedom of Information Act requests, in accordance with congressionally mandated provisions; (7) provides Project Clearance functions for the Institute, processing Federal Register notices as warranted and submission of ICB collection plan for OMB; (8) provides guidance to Institute staff on Privacy Act issues; (9) collects and coordinates information for Institute reorganizations as changes become necessary; (10) undertakes the technology transfer operations of the Institute; and (11) serves as liaison relating to the above functions with appropriate divisions and other organizations at the NIH as well as components within the Department.

Office of Communications and Public Liaison - HNK13

(1) Advises the Director, Deputy Director, Division Directors, and members of the Institute's scientific and administrative staff on plans to disseminate research results to the public, the news media, the medical community, the Congress, and professional and voluntary health organizations; (2) responds to public inquiries in areas encompassed by the Institute's mission; (3) provides advice to scientific and program staff engaged in research reporting to the public; (4) coordinates with voluntary and professional health organizations in planning publications and reports of research results as needed; (5) collects, translates, and disseminates scientific and technical information to the medical community; (6) manages and directs the operations and long-range plans of legislatively mandated clearinghouses for the collection, translation and dissemination of information to health professionals, patients, and the public; (7) designs and manages outreach activities to raise awareness of healthy behaviors among the public and awareness of research-based best medical practice among health care practitioners; (8) oversees the development of national education programs, which use a variety of communication techniques and outreach activities targeting specific audiences to support and achieve improvements in health outcomes; (9) manages, maintains, and oversees the news and health information for the public sections of the NIDDK website for effective dissemination of scientific and health information to the public; and (10) coordinates with the NIH Office of Communications and Public Liaison and the DHHS Assistant Secretary for Public Affairs, providing information and advice as needed.

Office of Scientific Program and Policy Analysis - HNK19

(1) Advises the Institute Director concerning emerging scientific and program policy issues of significance to the Institute and recommends options for their resolution; (2) develops and executes a program for the planning, assessment, and analysis of the Institute's policies, programs, and research accomplishments; (3) provides technical leadership, guidance, and analytic methods for program development and program planning, evaluation, and analysis related to the disease categories and relevant disciplines within the Institute's mission; (4) directs a program for coordination, review, analysis and presentation\ of Institute policies, programs, and research advances related to health promotion, disease prevention, technology assessment/transfer, consensus development, clinical trials, women's health issues and international activities; (5) assesses the total Institute program in terms of actual accomplishments vs. plans and recommends programmatic actions to correct discrepancies; (6) directs the compilation and analysis of program data and statistics for special studies and advises the Institute Director and his immediate staff concerning resultant operational and policy implications; and (7) in carrying out the above functions, collaborates with other institutes, the Department, and outside organizations.

Office of Minority Health Research Coordination - HNK1B

(1) Identifies, analyzes and assesses the presence and magnitude of health disparities in racial and ethnic minority populations in disease areas within the Institute's mission; (2) develops and recommends to the NIDDK Director research and funding strategies specifically targeted to these problem areas; (3) engages in a dialogue with health professional and lay leaders in local communities most impacted by the disparities to elicit their thoughts and ideas as well as share the Institute's current and projected research efforts; (4) engages in and develops collaborative efforts with other NIH Offices, Centers, and Institutes in developing plans and funding in areas of significant disparities of mutual interest; (5) tracks and evaluates the Institute's progress in training underrepresented racial and ethnic minorities in biomedical research, particularly the NIDDK Strategic Plan on Minority Health Disparities; (6) coordinates with NIH, national and international organizations, other educational institutions, and corporate entities in the development of programs to address the needs; (7) develops, coordinates, and evaluates outreach education and information dissemination programs; (8) develops and maintains database information on resources such as funding and manpower as well as trend and patterns unique to minority populations.

Executive Office - HNK1C

(1) Oversees the administrative management, computer technology, financial management, personnel management; (2) develops, administers, and directs the Institute's internal control processes; (3) oversees development of and administers Institute's policies and procedures for administrative and program management activities.

Administrative Management Branch - HNK1C2

(1) Serves as the NIDDK coordinating point in handling general administrative or management problems that cross Institute program lines and which cannot be resolved at program levels; (2) analyzes effects of changes in general administrative policies and practices by organizational echelons above the Institute level; (3) develops policies on administrative management and prepares and issues procedures and guidelines for implementation; (4) advises the Director, Division Directors and other key officials on administrative policies, practices and procedures; (5) provides overall administrative support services, including budget, personnel, procurement, travel, space management, and property accountability.

Extramural Administrative Management Branch (HNK1C2A)

(1) Addresses general administrative or management matters affecting the extramural programs; (2) analyzes effects of changes in general administrative policies and practices resulting from organizations above the Institute level; (3) develops and implements procedures related to administrative management; (4) advises the Director, Division Directors and other key officials on administrative policies, practices and procedures; (5) provides overall administrative support services, including budget, personnel, procurement, travel, space management, and property accountability.

Office of the Director Administrative Management Branch (HNK1C2B)

(1) Addresses general administrative or management matters affecting the Office of the Director programs; (2) analyzes effects of changes in general administrative policies and practices resulting from organizations above the Institute level; (3) develops and implements procedures related to administrative management; (4) advises the Director, Division Directors and other key officials on administrative policies, practices and procedures; (5) provides overall administrative support services, including budget, personnel, procurement, travel, space management, and property accountability.

Computer Technology Branch - HNK1C3

(1) Plans, designs, develops, and maintains comprehensive computerized management information, office automation and technology systems and networks for all computing within NIDDK; (2) maintains comprehensive help desk support for all NIDDK computer technology users; (3) studies feasibility of implementation of all new systems, system updates, enhancements, and replacements; (4) provides cost analysis of all changes and implementations; (5) consults on technology issues involving data-communications, interoperability and compatibility with other systems and networks at NIH.

Extramural Computer Support Section - HNK1C32

(1) Implements, plans, designs, develops, and maintains comprehensive computerized management information, office automation and technology systems and networks for all computing within NIDDK; (2) maintains comprehensive help desk support for all Extramural NIDDK computer technology users; (3) studies feasibility of implementation of all new systems, system updates, enhancements, and replacements; (4) provides cost analysis of all changes and implementations; (5) consults on technology issues involving data-communications, interoperability and compatibility with other systems and networks at NIH.

Intramural Computer Support Section - HNK1C33

(1) Implements, plans, designs, develops, and maintains comprehensive computerized management information, office automation and technology systems and networks for all computing within NIDDK; (2) maintains comprehensive help desk support for all Intramural NIDDK computer technology users; (3) studies feasibility of implementation of all new systems, system updates, enhancements, and replacements; (4) provides cost analysis of all changes and implementations; (5) consults on technology issues involving data-communications, interoperability and compatibility with other systems and networks at NIH.

Office of Financial Management and Analysis - HNK1C4

(1) Develops, together with top Institute staff, budget formulation proposals from initial submission to the NIH Director through the final President's Budget and Congressional Justification; (2) prepares background materials for appropriation hearings and assists in briefing Institute witnesses; (3) prepares the budget execution plan in conformance with limitations of the appropriation, DHHS and OMB guidelines, and congressional earmarks and directives; (4) formulates and monitors the Institute's financial management program and establishes systems for the effective control of funds utilized through the intramural research, grants, and contracts processes; (5) closely monitors use of special sources of funds outside the appropriation, including reimbursements from other agencies, gift funds, patent royalties, and CRADA funds; (6) monitors use of resources under special ceilings; (7) documents actual use of funds by award mechanisms, intramural laboratories and branches, and extramural program structure; (8) directs and performs financial management analysis of Institute scientific programs; (9) maintains and elaborates methodology for carrying out analysis through the CRISP and IMPAC computer systems and other available sources of data and information; (10) performs special financial analytical projects by request of leading Institute staff; (11) serves as the focal point to clear all fiscal information leaving the Institute in response to outside requests; and (12) serves as the financial management liaison with other institutes and agencies, to document transfers and collaborative uses of program funds.

Office of Management and Policy Analysis - HNK1C6

(1) Provides broad management advice to the Director, Deputy Director, EO and Division Directors on implementation and management of Federal, Departmental and NIH nondiscretionary administrative management requirements, conducting broad-based management assessment of program areas as appropriate; (2) is responsible for NIDDK-wide implementation, oversight and management of activities related to delegations of authority, organizational and functional analysis, records, regulations, and competitive sourcing; (3) provides leadership and guidance for NIDDK's business management planning efforts consistent with the Government Performance and Results Act and Office of Management and Budget program assessment requirements. This includes workforce planning and emergency planning; (4) develops and implements and/or provides advice for the development and implementation of general administrative management policies, programs, and procedures. Assures the dissemination and central codification of administrative policies and procedures to comply with federal, Departmental and NIH administrative requirements; (5) has overall responsibility for NIDDK's management control program, including assuring follow-up on external audit findings/recommendations; (6) provides a centralized management survey and review capability to promote program integrity which includes responsibility for conducting Institute reviews of alleged fraud, waste, abuse or mismanagement and/or employee misconduct; (7) designs and conducts management studies, surveys, and projects, including customer service surveys; (8) analyzes and provides advice on general management issues identified as a result of internal studies, requested by Institute managers and staff, and as required by NIH and DHHS; (9) manages the implementation of the Freedom of Information Act (FOIA) at NIDDK; (10) provides FOIA policy guidance, training, and advice to the IC; (11) responds to all FOIA requests; and (12) coordinates the response to FOIA requests involving more than one IC component.

Office of Workforce Development and Planning - HNK1C7

Provides business management, support and advisory services to the staff of the NIDDK in the areas of human resources management and workforce relations, including: (1) provides advice on and development of NIDDK policy related to staffing management, recruitment and retention planning, development of staffing plans and workforce analysis, and performance management; (2) manages special recognition and awards programs, including development of policy for bonus pools; (3) provides advice and oversight on the T42 appointments and pay adjustments for the IC; (4) manages training programs and provides advice to IC management on administrative and management training and executive development programs; (5) serves as liaison with OHR and with OEODM; (5) provides advice, consultation and training to NIDDK staff on ERILR issues; (6) coordinates quality of work life and IC leave programs and develops policy; and (7) handles oversight and analysis of FTE usage for NIDDK.

Intramural Administrative Management Branch - HNK1C8

(1) Coordinates the handling of Division administrative or management issues; (2) advises the Division Director and other key officials on administrative policies and practices; (3) provides overall administrative support services to the Division; and (4) provides Division administrative information and prepares or coordinates reports as requested.

Purchasing Office HNK1CA

(1) Provides overall guidance and advice related to all non-research and development procurement and delegated simplified acquisitions activities for NIDDK; (2) provides advice and assistance regarding all phases of the acquisition life cycle from planning to close out for all delegated acquisitions; (3) develops guidelines, standard operating procedures, and internal controls to ensure proper implementation of the NIH and other applicable procedures, policies, regulations, and law; (4) provides reports and statistics on the effectiveness and efficiency of the processes to the Executive Officer; (5) collaborates, at the NIH level, to develop, identify, and implement best practices; (6) provides Liaison support and representation within the NIH Acquisition Community.

Division of Digestive Diseases and Nutrition - HNK2

(1) Plans and directs a program of research grants and contracts, and training and fellowship awards for digestive diseases and nutrition to ensure maximum utilization of available resources to attain program objectives; (2) prepares analyses of national research efforts, collects appropriate data, and consults with experts individually and in groups, when appropriate, to assist staff, appropriate authorities, and advisory groups in recommending new and/or continuing program emphases; (3) maintains surveillance over developments in designated categorical areas and assesses need for research into the causes, diagnosis, prevention, and treatment of digestive diseases and nutrition and for training related thereto; (4) develops recommendations for presentation to the National Advisory Council, staff, and appropriate authorities, as to the modulating effect of categorical needs, desires, and demands on the priority judgments of the scientific merit of grant applications made by Initial Review Groups; (5) advises and participates with outside lay (voluntary health) and professional organizations in assessing and responding to the needs and requirements of digestive diseases and nutrition; (6) identifies research developments and determines where additional research and training efforts are required; (7) arranges workshops, conferences, seminars, and meetings, where appropriate, to stimulate or facilitate research in a specific area; (8) arranges for the initiation and monitoring of clinical trials of diagnostic or therapeutic techniques, where appropriate; (9) develops processes, programs, devices, or substances that are needed for research, diagnosis, or treatment of disease, through contracts, where appropriate; (10) sets up a facility to provide and distribute to investigators such needed substances as hormones, chemicals, or assay materials; (11) provides, where appropriate, consultation to investigators in the preparation of proposals for research; and (12) arranges, where appropriate, for the preparation, evaluation, and distribution of teaching materials to patients, the public, and medical professionals.

Digestive Diseases Program Branch - HNK2-2

(1) Plans, conducts, and directs a program of basic and applied, clinical and non-clinical research in digestive diseases, including esophageal, gastric, functional bowel, intestinal, and colonic disorders; inflammatory bowel and peptic ulcer diseases; diagnostic technology; gastrointestinal hormones; liver, biliary tract, and pancreas; diseases including salivary gland, biliary tract, and pancreatic disorders; general liver diseases; cirrhosis; hepatitis; exocrine pancreas diseases; and tissue transplantation through funding activities in extramural institutions and organizations (including grants, contracts, centers, and clinical trials); (2) reviews and evaluates national and international research developments in these program areas and stimulates research activity through appropriate mechanisms such as workshops; and (3) plans, conducts, and directs a program for the development of personnel trained in digestive diseases, liver, pancreas, and biliary tract research.

Nutritional Sciences Branch - HNK2-3

(1) Plans, conducts, and directs a program of basic and applied, clinical and non-clinical research on nutrition including research on obesity, appetite, and behavior; nutritional support systems in disease states; dietary \"fiber\"; nutrient requirements for minerals and vitamins; fatty acids and lipids; nutritional deficiencies; and metabolic regulation through funding activities in extramural institutions and organizations (including grants, contracts, centers, and clinical trials); (2) reviews and evaluates national and international developments and needs in these areas and through appropriate mechanisms such as workshops, and stimulates research activity; and (3) plans, conducts, and directs a program for the development of personnel trained in basic and clinical research in human nutrition.

Liver Diseases Branch - HNK2-4

(1) Plans and directs a program of research grants and contracts, and training and fellowship awards for liver and biliary diseases to ensure maximum utilization of available resources to attain program objectives; (2) prepares analyses of national research efforts, collects appropriate data, and consults with experts individually and in groups when appropriate, to assist staff, appropriate authorities, and advisory groups on recommending new and/or continuing program emphases; (3) maintains surveillance over developments in designated categorical areas and assesses need for research into the causes, diagnosis, prevention, and treatment of liver diseases related thereto; (4) develops recommendations for presentation to the National Advisory Council, staff, and appropriate authorities, as to the modulating effect of categorical needs, desires, and demands on the priority judgments of scientific merit of grant applications made by Initial Review Groups; (5) advises and participates with outside lay (voluntary health) and professional organizations in assessing and responding to the needs and requirements of liver disease; (6) identifies research developments and determines where additional research and training efforts are required; (7) arranges workshops, conferences, seminars, and meetings, where appropriate, to stimulate or facilitate research in a specific area; (8) arranges for the initiation and monitoring of clinical trials of diagnostic or therapeutic techniques, where appropriate; (9) develops processes, programs, devices, or substances that are needed for research, diagnosis, or treatment of disease, through contracts, where appropriate; (10) provides, where appropriate, consultation to investigators in the preparation of proposals for research; and (11) arranges, where appropriate, for the preparation, evaluation, and distribution of teaching materials to patients, the public, and medical professionals.

Special Hepatitis Program - HNK2-42

(1) Develops initiatives for research on viral Hepatitis, particularly in the areas of chronic Hepatitis B and C; (2) provides scientific direction for multicenter studies of the pathogenesis, natural history, therapy and prevention of viral hepatitis; and (3) initiates long-term strategic planning in the areas of viral hepatitis.

Clinical Liver Disease Program - HNK2-43

(1) Manages a portfolio of grants, cooperative agreements and contracts in the area of clinical research on liver diseases, including studies of epidemiology, natural history, therapy and prevention; and (2) manages initiatives in clinical and epidemiological research on liver disease, in areas such as pediatric liver disease, acute and chronic viral hepatitis, metabolic liver disease, non-alcoholic steatohepatitis, autoimmune liver diseases, liver transplantation, complications of end-stage liver disease and portal hypertension and cirrhosis-related liver cancer.

Liver and Biliary Diseases Program - HNK2-44

Supports basic and clinical research on both the normal function and the diseases of the liver and biliary tract. Areas of basic research include hepatic regeneration, gene therapy, and liver cell injury, fibrosis, and apoptosis; basic and applied studies on liver transplantation, including techniques of preservation and storage; metabolism of bile acids and bilirubin; physiology of bile formation; control of cholesterol levels in bile; and gallbladder and bile duct function. Areas of disease-oriented research include cholesterol and pigment gallstones; inborn errors in bile acid metabolism; chronic hepatitis that evolves from autoimmune, viral, or alcoholic liver disease; and various liver ailments such as Wilson's disease, primary biliary cirrhosis, primary sclerosing cholangitis, portal hypertension; hepatic encephalopathy, and Crigler-Najjar syndrome.

Nutrition Research Branch - HNK2- 5

(1) Represents NIH and NIDDK on broad scientific issues related to nutrition research and initiatives that impact the federal government; (2) leads and coordinates nutrition efforts in NIDDK; (3) manages complex programs in nutrition research, and participates in the development of new funding initiatives; (4) provides expert advice and guidance to NIDDK offices, the scientific community, voluntary health organizations and other lay audiences.

Division of Kidney, Urologic, and Hematologic Diseases - HNK3

(1) Plans and directs a program of research grants, training and fellowship awards, and contracts related to basic and targeted research, clinical trials, research centers, and technological research findings to kidney, urologic, and hematologic diseases, thus ensuring maximum utilization of available resources to attain program objectives; (2) develops, for presentation to the National Advisory Council, recommendations as to the modulating effect of categorical needs, desires, and demands on the priority judgments of scientific merit of grant applications made by the Initial Review Groups; (3) prepares analyses of national research efforts to assist advisory groups in recommending new and/or continuing program emphasis; (4) maintains surveillance over developments in categorical areas and assesses the need for research and training associated with the causes, diagnosis, prevention, and treatment of kidney, urologic, and hematologic diseases; and (5) advises and participates with outside lay (voluntary health) and professional organizations in assessing and responding to the needs and requirements of categorical diseases.

Kidney and Urology Branch - HNK3-2

(1) Plans, directs, and conducts a program of research grants and contracts for fundamental and applied research relating to the structure, function, and diseases of the kidney and urinary tract, as well as activities relating to dialysis and renal transplantation; (2) administers grants for program projects and for research centers; (3) plans and conducts a program for studying, developing, and monitoring specialized personnel requirements relating to research in and clinical care of kidney and urologic diseases; and (4) reviews and assesses national and international research developments in kidney and urologic research.

Hematology Branch - HNK3-3

(1) Plans, conducts, and directs a program of basic, applied, and clinical research in the areas of normal and pathologic blood cell formation and metabolism, genetic and acquired anemias (especially as associated with nutrition and chronic disease), and immunohematology particularly related to white cell function, autoimmune disease, and transplant biology through funding activities in outside institutions and organizations; (2) plans and directs a program of personnel development and training in areas of need associated with the goals of the supported research; and (3) reviews and evaluates national and international developments in the program area.

Division of Diabetes, Endocrinology, and Metabolic Diseases - HNK5

(1) Plans and directs the Institute's research grant, contract, training, and specialized programs in diabetes, endocrinology, and metabolic diseases including basic and applied research, training fellowships and institutional training awards, career development awards, multipurpose centers of research, clinical trials, technological development, and application of research findings; (2) maintains surveillance over developments in program areas and assesses the national need for research in the causes, prevention, diagnosis, and treatment of diabetes, endocrine, and metabolic diseases, in technological development, in the application of research findings, and for personnel training in these areas; (3) maintains the National Diabetes Data Group to collect and disseminate the data needed to address scientific and public health issues in diabetes; (4) plans and directs the National Hormone and Pituitary Program for the preparation and distribution of these special resources for research by qualified investigators; (5) maintains the necessary scientific management capability to foster and guide effective programs in diabetes, endocrine, and metabolic diseases; (6) collaborates with outside lay (voluntary health) organizations and professional organizations in identifying and assessing the needs and requirements for research and personnel development in categorical diseases; (7) provides administrative support to the Diabetes Mellitus Interagency Coordinating Committee and the Cystic Fibrosis Coordinating Committee; (8) coordinates division activities with other NIDDK divisions, NIH institutes, and Federal agencies; and (9) plans and directs a national diabetes outreach program to disseminate research advances to patients, practitioners and the lay public.

Research Programs - HNK5-5

Will be recognized by designation of experienced and productive health science administrators as "senior scientific advisors" responsible for development and coordination of specific area(s) of research.

Division of Intramural Research - HNK6

(1) Plans and conducts the Institute's laboratory and clinical research program which encompasses the various arthritic, rheumatic, and collagen diseases; the broad spectrum of metabolic diseases such as diabetes, other inborn errors of metabolism, digestive diseases, orthopedics, dermatology, hematology, nutrition, endocrine disorders, urology and renal disease mineral metabolism; and subjects related to the above to ensure maximum utilization of available resources in attainment of Institute objectives; (2) conducts basic research in biochemistry; nutrition; pathology; histochemistry; chemistry; physical, chemical, and molecular biology; pharmacology; and toxicology; (3) evaluates research efforts and establishes program priorities; (4) allocates funds, space, and personnel ceilings, and integrates new research activities into program structure; (5) collaborates with other Institute and NIH programs and maintains an awareness of national research efforts in program areas; and (6) advises the Director and staff on intramural research program and areas of science of interest to the Institute.

Section on Biological Chemistry – HNK6-2

Plans and conducts basic research on: 1) the structure, biosynthesis and function of complex glycoconjugates; 2) mimetic of complex glycoconjugate structure and function; and 3) proteomic discovery of novel glycosyltransferases and their substrates.

Metabolic Diseases Branch - HNK63

(1) Conducts clinical and laboratory investigations on nature, pathogenesis, diagnosis, natural history, and treatment of various disorders of metabolism and kidney diseases; (2) investigates metabolic effects and mechanisms of hormone-receptor interactions; (3) uses molecular biologic techniques to define the pathophysiology of human disorders of signal transduction; (4) performs research on immunological and pathological factors in glomerular diseases; (5) studies cystic fibrosis and related disorders; and (6) provides consultation service for patients with similar diseases in the Clinical Center.

Endocrine Signaling and Oncogenesis Section - HNK633

To elucidate the pathways and mechanisms involved in the regulation of cell metabolism and growth in response to extracellular signals and to understand how dysregulation of these pathways can lead to human disease including neoplasia. Basic scientific studies will employ animal model systems ranging from cultured cells to living organisms, and will include the study of phylogenetically distant models sharing evolutionarily-conserved pathways if appropriate. Patient studies will focus on the genes involved in endocrine neoplasia syndromes, their clinical manifestations, and the possible effect of particular gene mutations and gene penetrance on disease phenotype.

Signal Transduction Section - HNK634

(1) To investigate the role of normal and abnormal signaling on molecular, cellular and physiological processes; (2) conduct research on the organization and regulation of genes that are critical for signaling; and (3) perform clinical and genetic studies examining the pathogenesis, natural history, and therapy of patients with syndromes of hormone resistance and other abnormal hormone signaling.

Genetics and Endocrinology Section - HNK637

(1) Conducts research on organization and expression of genes that regulate processes in endocrinology and mineral metabolism; (2) investigates production and actions of hormones with emphasis on those regulating mineral metabolism; (3) conducts clinical research on abnormalities of hormone secretion and action with emphasis on calciotropic hormones.

Laboratory Animal Science Section – HNK6-4

(1) Provides services to intramural researchers for all phases of laboratory animal experimentation; (2) advises staff regarding practices of proper housing, handling, use, surveillance and health care of research animals to ensure compliance with DHHS, USDA, and AAALAC guidelines; (3) manages animal care facilities in order to maximize the use of animals, animal room space, and animal care resources; (4) implements and coordinates animal disease prevention, health monitoring, disease investigation and disease treatment; and (5) provides for the training of animal care personnel.

Laboratory of Biological Modeling - HNK65

- (1) Develops and applies methods of mathematical modeling to integrative problems at the molecular, cellular, and organism levels using ordinary, partial, integral, and stochastic differential equations, various simulation methods, and other tools as appropriate.
- (2) The applications focus on metabolism, inflammation, Type II diabetes, obesity, and other allied areas.
- (3) The work is carried out in collaboration with experimental groups in NIDDK and elsewhere.

Neural Dynamics Section – HNK652

(1) Develops and analyzes mathematical models for the basic biophysics of insulin secretion by pancreatic beta cells and the oscillations of membrane potential and calcium that underlie it; (2) Models endocrine cells in the pituitary that secrete growth hormone, prolactin, adrenocorticotrophic hormone; (3) Models exocytosis of hormones and neurotransmitter; (4) Models the pathogenesis and progression of type 2 diabetes and applies them to pre-clinical studies in rodents and clinical studies in humans.

Mathematical Biology Section – HNK653

(1) Simulates by mathematical approaches the signaling pathways in the beta cell of the Islet of Langerhans to develop a quantitative representation of intercellular communication amongst the hormone-producing cells of the pancreatic islet.

Computational Medicine Section - HNK654

(1) Integrates biological data from molecular to physiological scales using Bayesian model selection into predictive models; (2) uses information theory and theoretical physics to devise new algorithms for learning mechanisms from biological data; (3) models insulin action on free fatty acids in physiology; (4) models mitochondrial function, specifically as related to metabolism in obesity; (5) Models adipocyte development and differentiation in obesity; (6) models liver regeneration after live donor liver transplant surgery to improve understanding of physiological parameters for the success of the transplant; (7) models use of phylogenetic sequence information in predicting protein structure, function and stability.

Integrative Physiology Section - HNK655

(1) Investigates how metabolism and body composition adapt in response to a variety of interventions; (2) performs experiments in both humans and rodents to better understand the complex mechanisms regulating macronutrient metabolism, body composition, and energy expenditure; (3) develops mathematical models to quantitatively describe, explain, integrate, and predict the experimental results.

Genetics of Development and Disease Section - HNK6A8

(1) Performs laboratory and clinical investigations into the pathogenesis, natural history and treatment of diseases caused by impaired sphingolipid metabolism; (2) studies the functions of sphingolipids in development, differentiation, cell signaling and nervous system function.

Digestive Diseases Branch - HNK68

(1) Conducts clinical and laboratory research on the normal and pathological structure and functions of the esophagus, stomach, small and large intestine, pancreas and liver; (2) investigates the enzymes and metabolic pathways within these tissues; (3) elucidates the fundamental biochemical defects in diseases of the gastrointestinal tract; (4) studies the responses to therapy in diseases of the gastrointestinal tract; (5) studies the natural history of diseases that affect these tissues, as well as the long-term complications of these diseases; (6) studies the pathogenesis of diseases affecting these tissues; (7) attempts to develop new therapies for treating various diseases affecting these tissues; and (8) plans and conducts basic and clinical vitamin nutrition research.

Gastroenterology Section - HNK684

(1) Plans and conducts investigations on the mechanism of transport of electrolytes and nutrients particularly with reference to the gastrointestinal tract; (2) investigates hormonal control of gastrointestinal function; and (3) studies pathology of diseases of the gastrointestinal tract.

Gastrointestinal Cell Biology Section - HNK685

(1) Plans and conducts investigations on the mechanisms through which various agonists and antagonists interact with specific receptors on various gastrointestinal cells; (2) prepares homogenous suspensions of dispersed cells from various gastrointestinal tissues; and (3) examines the regulation of gastrointestinal cell functions in vitro.

Molecular and Clinical Nutrition Section - HNK687

(1) Plans and conducts basic and clinical vitamin nutritional research to determine recommendations for optimal vitamin ingestion; (2) studies vitamin function, biochemistry and physiology; (3) investigates molecular biology of vitamin action; and (4) conducts clinical studies regarding vitamin ingestion and application, benefits, adverse effects, and outcomes.

Diabetes, Endocrinology, and Obesity Branch - HNK69

Conducts basic, translational and clinical research: (1) to understand glucose homeostasis, beta cell function and growth, insulin resistance, and the abnormalities that are found in type 1 and type 2 diabetes; (2) to understand energy homeostasis, fat cell development and function, and the abnormalities that are found in obesity; (3) to understand immune tolerance induction in the context of autoimmune diabetes (4) to understand thyroid hormone physiology in normal and disease states; (5) to develop and validate animal models to study endocrinology and glucose and energy homeostasis; (6) to understand endocrinology, neuroendocrinology and metabolism through investigation of human subjects in pharmacologic intervention trials, physiologic and observational studies; (7) to train physicians in the subspecialty of endocrinology, diabetes, and metabolism, and the conduct of clinical research.

Energy Homeostasis Section - HNK69C

Conducts laboratory and clinical research to better understand 1) body weight homeostasis, 2) regulation of metabolic rate and body temperature, 3) physiology and pathophysiology of metabolic substrate handling, and 4) pharmacologic treatment of obesity and diabetes. Additional interests are the genetic contributions to these topics.

Immune Tolerance Section - HNK69E

We utilize mouse models and human samples to study the role of dendritic cells and regulatory T cells in peripheral T cell tolerance induction. We are specifically interested in how tolerance is altered or deficient in the context of autoimmune diabetes with the goal of learning how to use dendritic cells to induce autoantigen-specific tolerance for treatment of human type 1 diabetes.

Regenerative Biology Section - HNK69G

Conducts research on organ systems that influence glucose tolerance and energy homeostasis with the aim to better understand, (1) mechanisms of cell growth, division, differentiation, and apoptosis, (2) regeneration potential, and (3) develop new small molecule target-based therapeutics for diabetes and obesity.

Section on Pediatric Diabetes & Metabolism - HNK69I

Conducts studies in the field of diabetes in youths and young adults to investigate effects of nutrition, medical and surgical interventions with the ultimate goal to achieve diabetes resolution. Additional projects focus on rare genetic and acquired conditions associated with insulin resistance and diabetes. Celi: Clinical and experimental thyroidology conducts clinical, translational, and bench research to characterize 1) The relevance of thyroid hormone action at the various end-organ targets. 2) The role of thyroid hormone metabolism in the time- and tissue-specific modulation of hormonal message. 3) The role of mutations and common genetic polymorphisms in the modulation of thyroid hormone action. Additional interest is devoted to the teaching of clinical thyroidology with particular focus on the diagnosis and management of functional and neoplastic diseases of the thyroid gland.

Energy Metabolism Section - HNK69J

(1) to develop the instruments and methods for improved quantification of whole-body energy expenditure, substrate oxidation, physical activity, and composition, both under laboratory and free-living conditions; (2) to investigate the dynamic changes in energy metabolism under non-steady state conditions such as caused by environmental stimuli, behavioral intervention, diet manipulation, exercise, and bariatric surgery; and (3) to explore the energy metabolic regulations in genetic diseases.

Ethnicity and Health Section - HNK69K

- 1) Identify factors promoting obesity, cardiovascular disease and type 2 diabetes mellitus in Africans and people in the African Diaspora with a particular emphasis on African Americans.
- 2) Study the epidemiological, metabolic and genetic differences in triglyceride levels
- 3) Train fellows at all levels of education from post-doctoral level to physician/endocrinologist on the conduct of clinical investigation including statistics.

Clinical and Cellular Biology Section - HNK69L

(1) Plans and conducts clinical investigations to elucidate mechanism of hormonal resistance in human disease states; and (2) studies the effect of several biologic agents on the clinical course of patients with insulin-resistant syndromes.

Clinical Endocrine Section - HNK69M

(1) Conducts clinical research in the areas of endocrinology, neuroendocrinology and metabolism through investigation of human subjects in pharmacologic intervention trials, physiologic and observational studies; (2) investigates human endocrine diseases and neoplasia and their response to therapy to elucidate the molecular pathophysiology and to develop novel therapeutic approaches; (3) trains physicians in the subspecialty of endocrinology, diabetes and metabolism and the conduct of clinical research.

Eating and Addiction Section- HNK69P

(1) Studies the impact of diet and obesity on brain dopamine systems and behavior, to test the hypothesis that diets high in fat negatively impact dopaminergic function; (2) studies how high-fat diets affect corticostriatal plasticity and function, to test the hypothesis that diets high in fat can alter information flow between these structures; (3) studies basic mechanisms of corticostriatal plasticity and cortical function to better understand where diet can impact this system; (4) builds new tools for monitoring the behavioral function of mice in a home-cage setting, with the goal of better understanding behavioral changes in obesity.

Translational Physiology Section - HNK69Q

(1) Collaborates with intramural and extramural investigators to develop translational research models to study the mechanism and treatment of metabolic diseases from the perspective of adipose tissue dysfunction; (2) establishes the physiological roles of human brown adipose tissue; (3) refines imaging methodologies to study human brown and white adipose tissue structure and function, focusing on PET/CT; (4) conducts early phase, proof-of-concept clinical trials with β 3-adrenergic receptor agonists to regulate brown adipose tissue and other organs; (5) helps develop PET/CTultrasound fusion technology required for studying human brown and white adipose tissue; (6) uses in vitro and preclinical in vivo models to study adipocyte cellular physiology; (7) develops a structural and functional anatomical map of human adipose tissue; and (8) incorporates stable isotopic labeling to characterize adipose tissue growth and fuel utilization.

Section on Translational Diabetes and Metabolic Syndromes - HNK69R

- (1) Conducts translational and clinical research in insulin resistance and the metabolic syndrome;
- (2) focuses on pathophysiology and clinical therapeutics for rare disorders of severe insulin resistance, including lipodystrophy and genetic or acquired disorders of the insulin receptor.

Section on Translational Endocrinology - HNK69S

(1) Conducts translational and clinical research on the physiology and pathophysiology of the hypothalamic-pituitary-adrenal (HPA) axis and its role in obesity; (2) uses clinical trial and translational techniques to develop new diagnostic and therapeutic methods for human diseases of the HPA axis.

Section on Motivational Processes Underlying Appetite - HNK69T

(1) Studies obesity and dissecting the neural systems controlling food intake beyond metabolic need—including higher-order cognitive factors; (2) using rodents as a model, research examines how the rodent brain integrates peripheral senses, internal states, and experiences to orchestrate feeding.

Genetics and Biochemistry Branch - HNK6A

(1) Performs clinical and basic investigations on inherited diseases (including diseases of connective tissue) to determine basic molecular defects, and to develop effective procedures for diagnosis and therapy; (2) investigates, using methods of molecular biology, the organization and function of genes, and the regulation of genes in processes such as differentiation and hormone action; (3) using methods of cell biology, biochemistry, and genetics, studies the movement of specific proteins, including enzymes and receptors, between cellular organelles; and (4) conducts research on the chemical nature, biosynthesis, and metabolism of hormones.

Genetics and Biochemistry Section - HNK6A3

(1) Studies the nature of the molecular defect in patients with selected genetic diseases; (2) investigates the mechanisms of genetic recombination and gene expression in higher organisms and their cells in culture; and (3) studies the transfer and integration of genetic information into the genome of higher eukaryotes, particularly of mammals.

Protein Biogenesis Section - HNK6A6

To study the folding and intracellular trafficking of proteins in both eukaryotic and prokaryotic cells. We are especially interested in elucidating the mechanisms by which (1) the ultimate fate of nascent (or newly synthesized) polypeptides is determined by interactions with the translational machinery and molecular chaperones and (2) proteins are transported across or integrated into biological membranes.

Genome Dynamics Section - HNK6A7

To probe molecular mechanisms involved in such essential functions as DNA repair, genetic recombination, and cellular responses to genotoxic stress using a variety of experimental approaches including biochemistry, genetics, cell biology and structural biology.

Genetics of Development and Disease Section - HNK6A8

(1) Performs laboratory and clinical investigations into the pathogenesis, natural history and treatment of diseases caused by impaired sphingolipid metabolism; (2) studies the functions of sphingolipids in development, differentiation, cell signaling and nervous system function.

Laboratory of Molecular Biology - HNK6C

(1) Conducts the exploration of biological events at the molecular level; and (2) carries out theoretical, biochemical, and biophysical studies on various genetic and physiological problems.

Molecular Genetics Section - HNK6C2

Conducts research on enzymes involved in genetic recombination and DNA replication, and on genetic control of these enzyme activities.

Physical Chemistry Section - HNK6C4

(1) Investigates physical properties of such macromolecules that are considered important in genetic machinery and relates these properties to biological functions; and (2) carries out research on physical chemistry of polynucleotide interaction and kinetics and thermodynamics of reactions between polynucleotides and other charged molecules.

Molecular Virology Section - HNK6C8

Conducts theoretical studies of various problems in biochemistry and physiology at the molecular level specifically investigating methods or subjects in theoretical chemistry and physics which may be useful in future applications in biology.

Genetic Mechanisms Section - HNK6C9

(1) Investigates mechanisms of DNA transposition and site-specific recombination, both in intact cells and in reactions with purified proteins; and (2) studies bacteria, bacterial virus, and eukaryotic cell systems.

Protein Homeostasis Networks Section - HNK6CB

(1) Conducts mechanistic studies on various protein quality control pathways that are required to maintain protein homeostasis in eukaryotic cells, focusing research on intercellular transmission of aberrant neurotoxic proteins, degradation of unassembled cytosolic proteins, and protein homeostasis regulation in erythroid development; (2) develops cell-based assays that allow dissecting the molecular mechanisms underlying several protein quality control processes including misfolding-associated protein secretion (MAPS), ribosome quality control and quality control of unassembled protein complexes; (3) designs and carries out in vitro assays to address the molecular mechanisms of protein quality control processes; (4) designs molecular probes and tools to evaluate the role of DNAJC5 in misfolding-associated protein secretion (MAPS); (5) investigates the role of protein translocation across the membranes of endolysosomes in intercellular transmission of neurotoxic proteins; (6) identifies and characterizes cell surface molecules that promote intercellular transmission of neurotoxic proteins; (7) establishes animal models to evaluate the role of MAPS and other protein quality control processes in intercellular transmission of neurotoxic proteins in vivo.

Structural Biology of Noncoding RNAs and Ribonucleoproteins Section- HNK6CD

(1) Conducts basic scientific investigations related to bacterial and viral homeostasis, pathogenesis and host immune defense; (2) investigates the structure and function of a number of structured noncoding RNAs in bacteria, viruses, and eukaryotes; (3) understands the fundamental principles that govern RNA structure formation, folding, and interactions with other RNAs and proteins; (3) investigates the molecular mechanisms by which bacteria sense and respond to nutrient limitation; (4) probes the molecular mechanisms by which eukaryotes detect and respond to nutrient limitation and other types of stresses; (5) investigates the structure and mechanisms of viral and cellular noncoding RNAs that manipulate the host immune system; (6) designs and develops RNA-based and RNA-targeted tools to counteract bacterial and viral infections.

Developmental Biology Section - HNK6CE

To study the developmental gene regulation in metazoans with an emphasis on molecular and genetic approaches.

Structure and Mechanism of DNA Repair, Replication & Recombination Section - HNK6CG

To use x-ray crystallography, molecular and cellular biology, and biochemical tools to elucidate mechanisms of DNA repair, replication and recombination. These three metabolic processes of genetic materials are closely linked to various malignant growth and genetic diseases.

Structural Biochemistry Section - HNK6CH

Conducts research on the regulation of activity of macromolecular complexes, such as those involved in DNA mobility, using x-ray crystallography in combination with biochemical and biophysical methods.

Structural Biology of Membrane Proteins Section - HNK6CI

Structural Biology of Membrane Proteins Section will run an active program of basic science experimentation into the function of membrane proteins, primarily using X-rays crystallography and related structural tools.

Laboratory of Biochemistry and Genetics - HNK6E

(1) Plans and conducts research on cellular components important in growth, development, and disease processes; (2) investigations on the macromolecular metabolism of yeast and their viruses and prions, including molecular biology, biochemistry, and genetics of these systems, (3) conducts studies related to structure, function, and synthesis of polyamines, bacteriophage and viral DNA and RNA, and proteins; (4) investigates mechanisms of enzyme catalysis; (5) develops experimental and theoretical methods for the characterization of interactions between biological macro molecules in solution and on surfaces; (6) conduct studies on tubulin and the structural and solvent factors that regulate its polymerization and its residence on membranes; and (7) conducts studies on the biosynthesis of cell surface components and their role in morphogenesis.

Pharmacology Section – HNK6E2

(1) Conducts research on the functions of polyamines in both prokaryotes and eukaryotes including their involvement in DNA, RNA and protein biosynthesis; (2) studies the structure and function of various proteins, such as adenosylmethionine decarboxylase, and methionine adenosyltransferase; (3) investigates the mechanism of action of enzymes involving carbonyl cofactors, such as pyridoxal phosphate and pyruvate; (4) studies the biosynthesis of bacterial cell surface components; (5) conducts research on the mechanisms regulating the incorporation of amino acids into proteins, especially those relating oxidoreduction processes involving sulfur containing substances; (6) studies growth and therapy of murine leprosy; (7) uses methods for these studies which include molecular cloning, nucleic acid sequencing, mutant isolation, genetic analysis, enzyme purification, and chemical modification of proteins.

Genetics of Organelle Biogenesis Section - HNK6E4

Created to understand the molecular mechanisms the cell uses to control the number and size of centrosomes. A growing number of human disease have been linked to centrosome or centriole defects. These include cancer, autosomal recessive primary microcephaly, primordial dwarfism, and a large number of so called ciliopathies such as polycystic kidney disease and BardetMBiedl Syndrome. The section aims to understand how the cell normally regulates the number and size of centrosomes and how defects in these regulatory processes lead to disease.

Genetics of Early Development Section – HNK6E5

Created to identify regulators and interactors of conserved genes that, when mutated, can cause human disease. Understanding the genes that interact with a disease-causing gene will shed light on the genetic pathway in which that disease gene acts. By modulating the activity of interacting genes, it may be possible to alleviate symptoms of the disease. Thus, genetic screens to identify interacting genes may lead to novel therapeutic targets.

Genetics of Simple Eukaryotes Section – HNK6E7

(1) Plans and conducts investigations of the genetics and biochemistry of simple eukaryotes such as Saccharomyces cerevisiae (yeast) and of other organisms including Drosophila (fruit fly) utilizing cloning and various molecular approaches, as well as mutant isolation and genetic characterization; (2) studies problems related to viral infection, cell development, neurobiology, and hormone action in these populations; and (3) studies problems related to the killer virus plasmid systems of Saccharomyces cerevisiae using genetic, cloning, enzymological and molecular biological techniques.

Section on mRNA Regulation and Translation - HNK6E9

Created to discover how cells control the expression of genes during translation by the ribosome. The section is interested in both the mechanisms that underlie basic steps in translation, such as termination and recycling, and how these processes are regulated to carry out cellular function. The ribosome is central to gene expression so the section's basic work on ribosome function is critical for developing models of disease. In particular, the section is examining how changes in the translational machinery during viral infection lead to the production of non-canonical peptides that can be used during the innate immune response. The section is also looking at how translational changes in cancer cells allow them to proliferate rapidly. Outcomes of this research will help guide the development of new therapies.

Protein Chaperones and Amyloid Section - HNK6EA

(1) Performs research using model systems to uncover molecular bases of how misfolded amyloid forms of proteins become established, propagate, and are eliminated from cells; (2) studies cooperative and regulatory interactions among diverse families of protein chaperones to understand how they cooperate and regulate each others' functions; (3) integrate functions (1) and (2) above to determine how protein chaperones inhibit or promote amyloid propagation; (4) uses information obtained from functions itemized above to develop strategies to alter amyloid propagation in defined ways; (5) supports the development of research trainees for a career in scientific or biomedical pursuits.

Cell Cycle Regulation and Nuclear Structure Section - HNK6EB

(1) Studies the mechanisms that determine nuclear size and shape, in an effort to understand the physiological consequences of altered nuclear morphology as seen in cancer cells; (2) Studies the mechanisms by which parental chromosomes mix after fertilization, and in particular the regulation of nuclear envelope reconfiguration during the first mitotic division

Laboratory of Cellular and Developmental Biology - HNK6G

(1) Studies the molecular events involved in development and cellular differentiation; (2) identifies and defines the effects of hormones on membrane regulated systems and studies the packaging and metabolism of intracellular neutral lipids; (3) conducts research on molecular mechanisms of development in experimental model systems; (4) performs research designed to understand how development is orchestrated on a genome-wide scale; and (5) applies the results of such laboratory studies to the clinic.

Gene Regulation and Development Section - HNK6G4

(1) Performs research designed to understand the molecular events involved in cellular development and differentiation; (2) studies long-range remodeling of chromatin structure by genetic regulatory elements; (3) studies the macromolecular architecture and composition of DNA-protein and protein-protein complexes in differentiating systems; and (4) determines structure-function relationships in biologically important nucleic acid-protein interactions.

Nuclear Organization and Gene Expression Section - HNK6G5

We seek to understand how higher-order chromatin structure influences gene expression. Our main goal is to elucidate mechanisms and regulation of chromatin insulators, which are DNA-protein complexes situated throughout the genome that define distinct transcriptional domains. One area of particular interest is the contribution of RNA and RNA-related mechanisms to chromatin organization. Our work promotes understanding of the intricately orchestrated transcriptional program needed for proper development and differentiation.

Mammalian Development Biology Section - HNK6G6

(1) Investigates molecular mechanisms of development in mammals; (2) defines genetic hierarchies involved in ovarian organogenesis and folliculogenesis; (3) investigates macromolecule required for successful gamete interaction and reproduction; (4) investigates the role of maternal genes on events of early mammalian development; and (5) develops transgenic mouse models in conjunction with the aforementioned studies.

Molecular Mechanisms of Development Section - HNK6G7

(1) Plans and conducts research to define mechanisms involved in the development of simple eukaryotes, primarily *Dictyostelium discoideum*; (2) studies transduction pathways that lead from extracellular signals or cell-cell interaction to differential gene expression; (3) defines control mechanisms for genes which are temporarily and/or spatially regulated during development; and (4) collaborates with other research groups in cloning and characterization of genes of importance in differentiation.

Developmental Genomics Section - HNK6G8

(1) Performs research designed to understand how information encoded in the genome is deployed during development; (2) works towards generation of a full verified parts-list of structural, regulatory, and instructional DNA elements; (3) performs genetic and molecular assays to validate DNA element function during development; and (4) uses functional information to model gene networks used to specify sperm versus egg development.

Nuclear Organization and Gene Expression Section - HNK6G9

We are interested in how microRNAs control the process of embryogenesis and how microRNAs are regulated over the course of animal development. Because of the contribution of microRNAs to gene regulation in normal physiology and disease, our basic research program has the potential for therapeutic application.

Laboratory of Cell and Molecular Biology - HNK6H

The Laboratory of Cell and Molecular Biology conducts laboratory investigations on the organization, compartmentalization and biochemistry of eukaryotic cells and the pathology associated with human disease. The laboratory uses molecular genetics and biochemical approaches to understand the mechanisms of intracellular trafficking of lipids, nuclear proteins, and other factors regulating transcription, replication and signal transduction. The lab explores the chemistry and biology of glycoproteins and the role of glycobiology in development and epigenetics. The lab investigates the fundamental processes involved in genome replication in prokaryotic and eukaryotic cells and the control of gene expression. The lab examines the nature, organization and function of genomic structures and DNA elements.

Cell Biochemistry Section - HNK6H2

(1) Plans and conducts research on biogenesis of membranes and cellular organelles; (2) examines the mechanism of signal transduction from the cell surface to the nucleus; (3) studies biochemical modifications and biological roles of cellular glycoconjugates; (4) examines the role of signaling molecules in initiation and maintenance of the cell cycle; (5) examines the role of glucose sensing in the pancreatic islet cell and peripheral tissues; and (6) performs electrophysiologic measurements of ion channel activity in excitable cells.

Structural Cell Biology Section - HNK6H4

To focus on the structural and functional analysis of macromolecular complexes involved in protein trafficking and membrane fission/fusion events. This work will include examining protein complexes by biochemical and biophysical methods, negative stain and high resolution cryo-electron microscopy techniques and relating the findings to in vivo cellular studies.

RNA Biology Section - HNK6H5

(1) Studies the molecular mechanisms underlying a small RNA based defense system that guard the genomic integrity of germline stem cells; (2) characterizes the complexity of Piwi-interacting small RNAs with respect to sequence preferences, genomic origin and length using next-generation sequencing; (3) investigates the impact of the aberrant expression of piRNA pathway components on genomic stability in disease.

Lipid Trafficking and Organelle Biogenesis Section - HNK6H6

The Lipid Trafficking and Organelle Biogenesis Section strives to further understand organelle biogenesis in cell biology. Very little is known about how the lipid composition, shape, and intracellular distribution of organelles are determined. The Cell Biochemistry Section studies these questions in the model organism *S. cerevisiae*. The laboratory focuses on how cells regulate the intracellular distribution of lipids in membranes and, in particular, the role of nonvesicular lipid trafficking in organelle biogenesis and lipid metabolism. The lab also studies how the characteristic shape of an organelle is generated and how this shape contributes to optimal organelle function.

Genomic Structure and Function Section - HNK6H7

Investigates the factors that affect the integrity of genetic information in humans including the effects of autonomously replicating genetic elements (transposons) by analyzing their evolutionary history, and biological and biochemical properties.

Gene Structure and Disease Section - HNK6H8

Plans and conducts basic research on human genetic disorders that have an unusual etiology and pathology including Repeat Expansion Diseases like the Fragile X syndrome, Fragile X-associated tremor and ataxia syndrome, Fragile X-associated primary ovarian insufficiency and Friedreich ataxia. In particular, this section studies: 1) the molecular basis of the responsible mutations and their associated chromosome abnormalities; 2) the molecular mechanisms responsible for disease pathology; and 3) approaches to the prevention or treatment of these diseases.

Gene Expression and Regulation Section - HNK6H9

Investigates the molecular mechanisms of transcription and gene regulation using bacterial and bacteriophage model systems

Section of Genetics and Physiology- HNK6HB

(1) Conducts genetic studies to understand how hormones control genes in the mammary gland; (2) uses genome-wide technologies to investigate the activation of chromatin; (3) uses advanced genetic engineering to investigate regulatory elements that control genes in mammals; (4) investigates the accuracy of novel gene editing technologies in mammals.

Molecular Medicine Branch - HNK6K

(1) Plans, conducts, and analyzes research and training related to the diagnosis, pathophysiology, and treatment of human disease, especially the genetic diseases involving hemoglobin and the erythrocyte; (2) investigates basic human physiological and molecular processes, especially those related to nitric oxide and other signaling molecules; (3) studies effects of hormones, such as erythropoietin, on cellular processes; (4) uses genomic and molecular genetic techniques to study human hematopoietic stem cell differentiation and function; and (5) performs clinical studies of patients with sickle cell anemia and other genetic and hematological diseases.

Molecular Biology and Genetics Section - HNK6K4

(1) Plans and conducts research on macromolecular structure in order to explain biological function; (2) studies cell structure and function using biophysical, biochemical and genetic approaches; (3) investigates gene expression and differentiation in cells using molecular genetic approaches; (4) studies abnormal molecular and cellular function, including chromosomal changes, in genetic diseases; and (5) develops therapies for genetic diseases using biochemical and genetic approaches.

Molecular Cell Biology Section - HNK6K5

(1) Plans and conducts research on molecular structure related to cellular function and differentiation; (2) studies molecular structure and function using biophysical, biochemical and molecular biology approaches; (3) investigates differential and developmental gene expression and processing in cells using genetic approaches; and (4) studies genetic control elements for tissue specific processes in normal and pathological cells.

Laboratory of Chemical Physics - HNK6L

(1) Plans and conducts research in structural biology and biophysical chemistry; (2) specifically, develops new methods in nuclear magnetic resonance and applies them to the determination of the three-dimensional structure of biological macromolecules in solution; investigates structure-function relations; and studies the dynamics, assembly, and function of proteins, membranes, and nucleic acids using experimental, theoretical, and computational biophysical methods.

Computational and Theoretical Biophysics Section- HNK6L2

((1) Develops novel computational and theoretical methods to study protein folding and misfolding; (2) develops simulation methods to extend time scales accessible by molecular simulation; (3) improves and optimizes energy functions for use in all-atom and coarse-grained molecular simulations of proteins and nucleic acids; (4) studies the mechanism of aggregation of proteins involved in amyloid diseases; (5) develops methods for building statistical models of protein sequences from existing sequence databases; (6) utilizes sequence-based models for protein design, and for the creation of 'switch' proteins bridging between different protein folds; (7) uses molecular simulations and theory to investigate the relation between sequence and structural properties of intrinsically disordered proteins; (8) develops computational models for studying protein phase behavior underlying formation of protein 'droplets' or 'granules' in cells.

Solid State Nuclear Magnetic Resonance and Biomolecular Physics Section - HNK6L6

(1) Conducts basic research on the structural and physical properties of biological molecules, using modern solid state nuclear magnetic resonance and other spectroscopic techniques; (2) develops new solid state nuclear magnetic resonance methods for probing the properties of biological molecules, including both the experimental and theoretical aspects of these methods; (3) applies concepts and techniques of condensed matter physics and physical chemistry to problems in biomolecular structure and dynamics.

Biophysical Nuclear Magnetic Resonance Spectroscopy Section - HNK6L8

(1) Develops improved NMR pulse schemes for obtaining both structural and dynamic information on molecular conformation with emphasis on biological macromolecules and (2) develops new computational methods for analysis of NMR data.

Section of Molecular and Structural Biophysics- HNK6L9

- (1) Plans and conducts studies on the determination of high resolution three-dimensional structures of proteins in solution by multi-dimensional nuclear magnetic resonance spectroscopy;
- (2) investigates the detailed internal dynamics of proteins using NMR spectroscopy;
- (3) investigates the relationship between structure, physical properties and function of these proteins;
- and (5) applies these results to the development of new concepts of rational drug design.

Theoretical Biophysical Chemistry Section - HNK6LC

(1) Plans and conducts theoretical research in the general area of chemical physics, focusing on problems that have immediate or potential biological interest; (2) devises theoretical procedures required to interpret biophysical experiments; and (3) develops the theoretical framework required to understand a variety of dynamical processes, including kinetics of ligand binding to macromolecules, tertiary and quaternary conformational transitions in macromolecules and chemical reaction in solution.

Biophysical Chemistry Section - HNK6LE

(1) Plans and conducts research on the physical basis of the function of biological macromolecules and their self-assembly; (2) utilizes special experimental and computational techniques which include simulations of molecular processes using molecular dynamics calculations, and steady state –and time-resolved optical spectroscopy with continuous wave and pulsed lasers; and (3) investigates the mechanism of sickle hemoglobin polymerization, aiming at the development of therapeutic approaches to sickle cell disease.

Ultrafast Biophysical Chemistry Section - HNK6LG

(1) Investigates relationships between protein structure, dynamics, and function using ultrafast time-resolved laser spectroscopy and x-ray crystallography; and (2) develops new time-resolved methodologies for probing dynamical processes in proteins.

Laboratory of Bioorganic Chemistry - HNK6M

(1) Plans and conducts research on the mechanism of interaction of pharmacologically active substances with biological systems to discover and develop new chemical agents as tools for the study of membrane and cytosol functions of cells; (2) investigates new mechanisms of action or metabolism of such agents and their potential use as therapeutics; (3) develops and applies modern techniques of organic chemistry for the synthesis, separation and spectral investigation of new chemical agents with emphasis on their interactions with macromolecule; (4) investigates the normal and pathological function of biological systems and further delineates the metabolic formation, fate, and action of a variety of physiologically active agents; (5) develops new approaches to drug delivery, affinity labeling, enzyme catalysis and receptor activation and new concepts of drug design; (6) designs, develops and conducts nuclear magnetic resonance experiments to elucidate structures of small bio molecules; (7) develops and publishes mass spectrometry techniques as required to obtain analytical results; (8) analyzes the molecular mechanism that govern the function of drug receptors by molecular biological techniques; (9) pathogenesis of hepatic encephalopathy; and (10) pathogenesis of AIDS dementia complex.

Molecular Recognition Section – HNK6M6

(1) Studies the structure and function of cell surface receptors, focusing on receptors for purines, i.e. both adenosine receptors (ARs) and P2 receptors (including both P2Y receptors, which are GPCRs, and P2X ligand-gated ion channels); (2) explores the indirect modulation of receptor action by targeting allosteric sites and enzymes associated with the action of purines; (3) uses receptor structures characterized by X-ray crystallography and molecular modeling to guide small molecule design; (4) uses chemical synthesis of new drug molecules to act as agonists or antagonists of G protein-coupled receptors (GPCRs), or of the enzymes that control endogenous purine levels, to define structure activity relationships; (5) carries out in vitro pharmacology using their molecular toolbox of chemical probes for adenosine receptors, P2 receptors and other proteins; (6) uses chemical probes to define the role of the receptors in the body and in disease models, to explore their potential for treating diseases of the nervous, immune, musculoskeletal, renal, endocrine and cardiovascular systems, and (7) advances selective receptor agonists and antagonists, towards clinical trials, e.g. for autoimmune inflammatory diseases, liver conditions, chronic neuropathic pain, asthma, heart failure and other conditions

Molecular Signaling Section - HNK6M7

(1) Studies cellular signal transduction pathways by using a combined molecular genetic/biochemical/pharmacologic approach; (2) examines the molecular basis underlying the selectivity of cellular signaling by systematic structure-function relationship studies; (3) analyzes the mechanisms governing the structure and activity of drug receptors by molecular biological techniques; (4) develops new methods to study the assembly, dynamics, and cellular trafficking of drug receptors and their associated effector proteins; (5) examines the molecular basis of disease-causing receptor mutations; (6) uses gene targeting technology to delete receptor genes in mice in order to elucidate the biological functions of the encoded receptor proteins; (7) evaluates phenotypes of mutant mice lacking individual receptor genes in pharmacologic, physiologic, and behavioral tests.

Natural Products Chemistry Section – HNK6M8

To discover and identify natural products that effect biological processes to fully elucidate their chemical structures, determine their mechanisms of action and ideally the atomic basis for biological activity using NMR or x-ray crystallography. Compounds of interest include small organic molecules/natural products as well as macromolecules derived from natural sources such as exogenous proteins

Synthetic Bioactive Molecules Section - HNK6MA

The primary goal of the laboratory is to bring out the long-term and development of new molecules with potential diagnostic and therapeutic value and collaborate within the NIH framework to move the molecules from the lab into applications that would improve human health.

Laboratory of Endocrinology and Receptor Biology - HNK6N

(1) Performs basic and clinical investigations relating to the molecular and cellular aspects of endocrinology, neuroendocrinology, and other metabolic diseases and studies human endocrine and metabolic diseases to elucidate the molecular pathophysiology and to develop novel therapeutic approaches; (2) investigates the mechanisms of receptor-mediated cellular regulation by hormones, growth factors, neurotransmitters and developmental factors; and (3) investigates the growth and developmental factors that regulate pancreatic precursor cell differentiation into hormone-expressing cells of the islets of Langerhans.

Nuclear Receptor Biology Section - HNK6N2

Performs research in the following areas: (1) receptors of the thyroid and steroid hormone families; (2) co-activators and co-receptors; and (3) molecular mechanisms of receptor-mediated regulation of gene expression, including developmental processes.

Receptor and Hormone Action Section - HNK6N4

(1) Studies the signal recognition properties and the signal transduction cascades of G protein- coupled receptors for polypeptide ligands; (2) uses transgenic animals to study the physiology and pathophysiology of endocrine systems; and (3) studies the development of beta cells of the Islets of Langerhans and the potential for use of islet stem cells or beta cell progenitor cells in the treatment of type 1 diabetes mellitus.

Adipocyte Biology and Gene Regulation Section - HNK6N8

Studies the epigenetic regulation of PPAR γ and adipogenesis. The nuclear receptor PPAR γ is the master regulator of adipogenesis (generation of fat). Understanding how epigenetic mechanisms regulate PPAR γ and adipogenesis may provide new ways to treat obesity and lipodystrophy, the two diseases that are tightly associated with type-II diabetes.

Phoenix Epidemiology and Clinical Research Branch - HNK6P

(1) Develops and applies epidemiological methodologies in the investigation of arthritis, diabetes, digestive, and kidney diseases; (2) plans and conducts field studies and clinical and laboratory research in these diseases; (3) provides epidemiological assistance to the intramural programs of the Institute and collaborating scientists and physicians engaged in diabetes, digestive, and kidney diseases research in the Institute and elsewhere; and (4) conducts field studies (including collaborative clinical investigation on selected populations in the United States and other countries).

Diabetes Epidemiology and Clinical Research Section - HNK6P2

(1) Plans and conducts epidemiologic and clinical research (including genetics, clinical trials, and health services research) to determine the risk factors and health consequences of diabetes, obesity, and complications of diabetes, especially kidney, eye, and heart disease; (2) develops and evaluates methods to prevent or treat these diseases; and (3) assists various American Indian communities in implementing research findings.

Diabetes Molecular Genetics Section - HNK6P3

Plans, directs and conducts research into the genetic determinants of type 2 diabetes mellitus and its complications in humans.

Obesity and Diabetes Clinical Research Section - HNK6P4

(1) Plans and conducts clinical and laboratory research in disease processes of diabetes and various other metabolic diseases, with particular emphasis on those more prevalent among American Indians than among the general population of the United States; and (2) utilizes research results whenever possible to throw new light on similar diseases in the general American population.

Diabetes Genetic Epidemiology Section - HNK6P5

(1) Conducts epidemiologic investigations of genetic determinants of diabetes, obesity and complications of diabetes; (2) conducts epidemiologic studies of epigenetic, transcriptional and other molecular determinants of diabetes and related disorders among American Indians from the southwestern United States.

Chronic Kidney Diseases Section - HNK6P6

(1) Conducts epidemiologic investigations of genetic determinants of diabetes, obesity and complications of diabetes; (2) conducts epidemiologic studies of epigenetic, transcriptional and other molecular determinants of diabetes and related disorders among American Indians from the southwestern United States.

Liver Disease Branch - HNK6R

Develops integrated, multidisciplinary approaches to the study of liver pathophysiology; bridges clinical medicine and basic science with translation of fundamental knowledge to prevention, diagnosis and treatment of liver diseases, and trains and fosters the growth of future scientists and clinical investigators in the field of hepatology. Fulfills three principal roles: (1) Conducts translational research on hepatic physiology and disease with focus on coordinating and integrating clinical and basic investigations. The overall research goal underscores the multidisciplinary approaches to understand basic molecular mechanisms and genetic basis of disease, to investigate pathophysiological processes, to develop appropriate animal models, to study the natural history of disease, and to formulate effective preventive and therapeutic modalities in the area of liver diseases; (2) provides a clinical consultative service for patients with hepatobiliary diseases in the Clinical Center of the National Institutes of Health and referrals from outside physicians. The clinical service manages and treats a large number of patients with a variety of liver diseases and collaborates with other clinical services in the Clinical Center on numerous clinical research studies; (3) trains and educates clinical and/or research fellows in clinical hepatology and research related to liver disease. The liver program is also an integral part of the joint gastroenterology program with the Digestive Diseases Branch.

Immunology Section - HNK6R2

Conducts clinical and basic immunology research on the pathogenesis and treatment of immune-mediated diseases of the liver and gastrointestinal tract. A major aspect is the study of hepatitis Band C virus infection. Clinical immunological studies are designed to analyze the immune response of patients who are followed in the Liver Diseases Branch. The aim of these studies is to identify immunological correlates of spontaneous and treatment-induced recovery; to elucidate mechanisms of disease pathogenesis and disease progression; and to develop clinical protocols for immunomodulatory therapies. Basic immunological studies are designed to uncover mechanisms of virus-host interaction using cellular, molecular and biochemical techniques and experimental animal models.

Genetics and Metabolism Section - HNK6R3

Investigates the mechanisms by which cells take up and utilize essential nutrients, such as iron. Studies the coordinated genetic and metabolic responses that enable cells to survive changes in iron availability and evaluates the impact of these systems on human health.

Translational Hepatology Section - HNK6R6

(1) Studies liver disease progression, testing hypotheses in clinical situations that can be translated into laboratory projects; (2) conducts clinical observations and bench investigations of human diseases leading to fundamental biologic insights, improved disease management and ultimately the prevention of disease progression; (3) uses a core approach through direct study of authentic biology; (4) studies liver diseases for rare, resultant concepts leading to a broader understanding of biologic principles, which may lead to treatments and cures with implications beyond hepatology.

Liver and Energy Metabolism Section - HNK6R7

(1) Applies genetic and functional studies to identify novel targets for the treatment of nonalcoholic fatty liver disease (NAFLD) and non-alcoholic steatohepatitis (NASH); (2) studies the mechanisms that lead to liver injury in NASH, using basic and clinical studies; (3) utilizes clinical trials to understand the mechanism of action of therapies for NAFLD/NASH and how they can lead to better understanding of the disease.

Clinical Hepatology Section - HNK6R8

(1) Studies the natural history of chronic viral hepatitis; (2) evaluates novel approaches to treatment of chronic viral hepatitis including hepatitis B; (3) examines the role of host and viral genetic polymorphisms on outcome of chronic viral hepatitis.

Kidney Diseases Branch - HNK6U

To promote fundamental understanding of renal function in health and disease, and to undertake research that will improve the diagnosis, treatment and prevention of kidney diseases in clinical practice. Specifically, (1) conducts clinical and laboratory studies on the nature, pathogenesis, diagnosis, natural history, treatment and prevention of kidney diseases in man and experimental models; (2) investigates the pathogenesis, diagnosis, treatment and prevention of acute renal failure in man and experimental animal models; and (3) conducts laboratory investigations into kidney physiology, with particular emphasis on the mechanisms for the regulation of salt and water balance, glomerular filtration rate, and the rennin-angiotensin system.

Kidney Disease Section - HNK6U3

The Kidney Disease Section of KDB conducts clinical and laboratory studies on the nature, pathogenesis, diagnosis, natural history, treatment and prevention of chronic kidney diseases in man and experimental models. Specifically, it (1) investigates the pathogenesis of immunologic renal diseases, including lupus nephritis and membranous nephropathy, and develops new therapeutic approaches to these disorders; (2) investigates the pathogenesis of focal segmental glomerulosclerosis and related pathologies of the podocytes, including the role of genetic variation, cytokines, viruses, and environmental toxins, and develops new therapeutic approaches to these disorders; (3) provides renal consultation and dialysis support to the NIH Clinical Center.

Renal Diagnostics and Therapeutics Unit - HNK6U4

(1) Conducts clinical and laboratory studies on the pathogenesis, diagnosis, treatment, and prevention of acute kidney injury and chronic kidney disease in man and in experimental animal models.

Polycystic Kidney Disease Section - HNK6U5

(1) Studies the function of genes that cause polycystic kidney disease (PKD) when mutated using cell culture and animal model systems; (2) develops new cell and animal model systems to study PKD gene functions; (3) determines the pathophysiologic consequences resulting from mutation of PKD genes using methods from various scientific disciplines including cell biology, molecular biology, biochemistry, and systems biology; (4) studies the role of PKD genes in the molecular processes and signaling pathways that regulate tubular morphology..

Biomedical and Metabolic Imaging Branch - HNK6Z01

(1) Provides NIDDK investigators with a variety of CT and MR and molecular imaging techniques to identify and validate biomarkers that will be used: a. for early detection of various metabolic disorders, b. for therapeutic monitoring of disease progression, and c. as endpoints in novel therapeutic clinical trials; (2) Discovers and develops novel biomedical imaging and bioengineering techniques/modalities that will ultimately result in a better understanding of the pathophysiology of disease and increased diagnostic accuracy, applicable to a broad spectrum of metabolic disorders; (3) Improves and maximizes the usefulness of existing imaging modalities currently used in the assessment of atherosclerosis, kidney, diabetes, digestive and other metabolic disorders; (4) Performs independent basic, translational, and clinical imaging investigations relating to the molecular, anatomical, and functional aspects of atherosclerosis, kidney, diabetes, digestive and other metabolic disorders; and (5) Establishes the most suitable imaging techniques for the study of metabolic disorders and optimizes the different existing imaging protocols for NIDDK studies. Services will also include managing, operating, addressing the purchasing needs and providing physics and technical support to NIDDK diagnostic imaging equipment including MRI and CT.

Biotechnology Core - HNK6Z02

The Biotechnology Core specializes in the production and purification of biological materials. The Core undertakes a wide array of tasks such as large scale growth of prokaryotes (e.g. *E. coli*,) and eukaryotes (e.g. yeast, mammalian cells, insect cells, filamentous fungi) and the production and purification of biological compounds, especially proteins. These products, not available from commercial sources, are needed for clinical, biological and structural studies. The Core is capable of handling such tasks by implementing both physiological and technical approaches. The Core possesses two integrated elements: a fully operational multi-purpose pilot production facility, and the ability to conduct research and process development. The current focus of research and development work is on evaluation and improvement of expression strategies, efficient protein recovery techniques, and understanding of the genetics and physiology of the various microorganisms and cells used for recombinant protein production.

Core for Clinical Laboratory Services - HNK6Z03

The primary goal for the Core for Clinical Laboratory Services is to provide laboratory infrastructure services that support the development and implementation of clinical trials within the intramural program.

Human Energy and Body Weight Regulation Core - HNK6Z04

The primary goal of this section is to develop and integrate technologies for measuring whole-body energy metabolism, physical activity, cardio-respiratory fitness, and body composition in healthy and diseased subjects.

Office of the Clinical Director - HNK6Z05

(1) Provides administrative oversight of NIDDK clinical activities for the intramural program; (2) plans, supports, coordinates, and monitors Institutional clinical research program activities encompassing the broad spectrum of diseases such as endocrine disorders including diabetes, inborn errors of metabolism, digestive diseases, hepatic disease, hematology, nutrition, renal disease, and mineral metabolism to ensure maximum utilization of available resources in attainment of Institute objectives; (3) supervises medical staff appointments, fellowship programs, and other clinical training programs; (4) plans and directs programs of clinical care, management, and support services in the operation of the Clinical Center, and represents interests for Institutional objectives to senior NIH leadership offices; and (5) to provide infrastructure services that support the development and implementation of clinical trials within the intramural program.

Fellowship Office - HNK6Z06

The NIDDK Fellowship Office is dedicated to meeting the needs and providing outstanding service and support to the students, postdoctoral fellows, clinical fellows and other trainees in the intramural research program. By assisting in recruitment, serving as an advocate for all Fellows, providing administrative support, creating educational and learning opportunities, and acting as a liaison between Fellows and their Mentors, the Fellowship Office broadens and enhances the research experience at NIDDK. The Fellowship Office promotes professional growth and development of our Postdoctoral and Post baccalaureate Fellows as they prepare for the transition to the next stage of their careers.

Mouse Knockout Core - HNK6Z07

The mission of MKC is to provide technical assistance needed for generating gene targeting in embryonic stem cells and generate chimerical mice through blastocyst injection.

Advanced Mass Spectrometry Core - HNK6Z08

The Advanced Mass Spectrometry Core assists NIDDK investigators in a wide group of applications of mass spectrometry in their research including basic quality control, general problem solving during the development of complex experimental approaches and, discovery where mass spectrometry data provide direct support.

Genomics Core - HNK6Z09

The Genomics Core will provide innovative, genome-scale technology services to NIDDK investigators. Core staff will advise and operate common equipment and be tasked to generate high quality data to customers using a cost-recovery model for consumable reagents.

Mouse Metabolism Core - HNK6Z10

The primary objective of the Mouse Metabolism Core is to support research in the area of obesity and diabetes by providing standardized, high quality phenotyping services for mouse models of diabetes, obesity and related disorders. Services include analysis of body composition and energy balance, euglycemic-hyperinsulinemic clamp, analyses of fatty acid oxidation in vivo and in isolated muscle, as well as isolation and transplantation of pancreatic islets. The Mouse Metabolism Core Laboratory also performs measurements of major metabolites and hormones in mouse serum and provides hands-on training in methods commonly used for analyses of energy and glucose metabolism in rodents.

Mass Spectrometry Clinical Core - HNK6Z11

The primary goal for the Mass Spectrometry Clinical Core is to develop stable isotopes mass spectrometry methods to monitor stable isotope metabolic tracers of doubly labeled water in clinical studies.

Division of Extramural Activities - HNK7

(1) Advises the Institute Director concerning Institute extramural program policies related to research contracts, grants, and training programs; (2) identifies areas for increased efforts and advises the three categorical programs of the development of funding levels; (3) provides scientific merit review of applications for special grant programs and research contract proposals; (4) provides Institute programs with grant and contract management and processing services; (5) maintains a system for operational control of funds for numerous individual program budgets; (6) provides reports and statistics related to Institute grant and contract programs through operational and technical support activities in programs analysis; (7) represents the Institute on overall NIH extramural and collaborative program policy committees and coordinates such policy within the Institute; (8) coordinates the presentation of Institute research grant and training programs to the National Diabetes and Digestive and Kidney Diseases Advisory Council; (9) coordinates program planning in the extramural activities program area and assesses progress toward objectives within the broad field represented by the categorical diseases programs; (10) designs and executes internal evaluations of the NIDDK committee management function which relates to multiple independent scientific advisory groups; and (11) serves as Institute liaison with NIH and HHS offices performing committee management functions.

Grants Management Branch - HNK7-3

(1) Interprets and applies existing grants management policies and participates in the development of Institute policies and procedures relating to the business management of grants programs; (2) provides fiscal and administrative policy review of grant applications; (3) assists program staff in analyzing and negotiating grant budgets as well as in proposing a grant payment hierarchy; (4) determines the amount and terms of grant awards; (5) awards and encumbers funds; (6) maintains records of grant expenditures and balances on hand and provides this information to program scientific staff and other Institute officials; (7) responds to requests from grantees for re-budgeting; (8) reviews proposed audit exceptions and establishes the Institute's recommendation regarding their resolution; (9) provides liaison with other components of DHHS, NIH, and officials of grantee institutions; (10) maintains an official grant file system of all documents as required by DHHS, PHS, and NIH policy; (11) collaborates with the Review Branch to achieve efficient and effective execution of the NIDDK grants program; and (12) prepares and distributes grant-related materials that are required by review committee meetings, the National Diabetes and Digestive and Kidney Diseases Advisory Council, and staff in the extramural branches.

Review Branch - HNK7-4

(1) Provides policy direction and coordination for the planning and execution of initial scientific and technical review conducted within the Institute; (2) maintains uniform policies and procedures governing technical and scientific review of grant applications and contract proposals within the NIDDK; (3) identifies and selects qualified non-government experts to serve on review committees; (4) manages the NIDDK ad hoc and review committees; (5) provides executive secretaries and other supporting staff for the initial scientific merit review of applications for support of multi-disciplinary and comprehensive grant programs, training programs, and contract proposals pending review; (7) coordinates scientific review activities with staff of Institute programs, other extramural activities branches, and the Division of Research Grants, NIH; and (8) provides grant application guidelines, related information and, as appropriate, assistance to potential applicants interested in program projects, core, comprehensive, or SCOR center programs.

Chartered Subcommittees Review Section - HNK7-42

(1) Coordinates the review activities of the three NIDDK chartered subcommittees which review grant applications for training and career awards (K08, KII, TI2, KI2, and F32), conferences (R13), and others (R03 and multiple site clinical trials) as required; (2) coordinates the review activities for special reviews, as dictated by Branch workload; (3) identifies and nominates qualified members to serve on chartered review committees; (4) recruits consultants having special expertise for review meetings as required; (5) manages chartered and special initial review groups; (6) arranges for meeting facilities, conference rooms, and travel as necessary for review meetings; and (7) ensures the timely completion and release of summary statements.

Special Emphasis Panels Review Section - HNK7-43

(1) Coordinates the review activities of special NIDDK committees which review grant applications submitted in response to requests for applications (R01, P30, P50, P60, U01, and R21); (2) coordinates review activities for proposals submitted in response to Institute requests for proposals (research, support, and Small Business Innovation Research contracts); (3) organizes review activities for other special reviews, as dictated by Branch workload; (4) selects qualified consultants to serve on initial review groups; (5) manages special initial review groups; (6) arranges for meeting facilities, conference rooms, and travel as necessary for review meetings; and (7) ensures the timely completion and release of summary statements.

Special Emphasis Panel II Section - HNK7-44

Main focus will be on the scientific merit assessment of clinically oriented grant applications and contract proposals. This will include dealing with multi-center clinical trials, tissue repositories, epidemiology research (prospective, retrospective, and meta-analysis of clinical research), translational research, and behavior modification research. Clinical research is supported in the areas of diabetes, obesity, endocrine and metabolic diseases, digestive diseases, nutrition, and kidney, urologic, and hematologic diseases. It is anticipated that the Review Branch will also become responsible for the review of single-site clinical trials, which will be coordinated through this Section.

Technology Advancement Office-HNKIE

The Technology Advancement Office (TAO) facilitates the utilization and further development of innovative technologies within the global scientific community to advance the programmatic goals of the Institute, to further scientific knowledge, and to benefit public health. The office strives to achieve its mission by facilitating: (1) basic and clinical research and development through formal partnerships with external organizations; (2) the exchange of research materials with the global research community; (3) the identification, evaluation and advancement of the Institute's inventions; (4) the appropriate protection of intellectual property through patenting and contracts; and (5) the promotion and licensing of innovative Institute technologies to the global scientific community. In addition, TAO acts as a technology transfer service center to provide the above services to other institutes by mutual agreement.