Message from the Director

The research mission of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) encompasses a wide array of diseases and conditions affecting tens of millions of Americans. Our overarching goal is to conduct and support research that will uncover the biological bases for health and disease, and to encourage rapid translation of this knowledge into clinical interventions to treat, prevent, or cure diseases within the NIDDK's purview. This document is our fourth annual compendium of highlights of NIDDK-supported basic and clinical research. It provides an overview of the strides we have made over the past year toward reaching our goals.

The examples of research advances collected in this booklet represent a substantial return on the significant investment that has been made in research over the past several years. In 2003, public policy makers completed the effort to double the NIH budget over five years. For the NIDDK, this expanded NIH support has meant greater opportunities to enable young scientists to pursue bold new ideas, as well as to launch many new initiatives. As we move forward into the "post-doubling" period, we will carefully continue our scientific stewardship for the American people.

The past year has also been marked by far-reaching scientific achievements and new opportunities that will enhance our ability to advance the NIDDK mission. Through the tremendous achievement of an international, NIH-led consortium, the complete sequence of the human genome is now known. Widely available access to the information from the Human Genome Project and its databases will accelerate and facilitate efforts by NIDDK-supported researchers to find the genes involved in many chronic and acute disorders, including complex diseases–such as type 1 and type 2 diabetes, and inflammatory bowel disease–and single gene disorders with secondary modifiers–such as polycystic kidney disease and Cooley's anemia. At the same time, we foresee benefits from a new, NIH-wide strategic effort, spearheaded by the NIH Director–the NIH Roadmap for Biomedical Research. New initiatives created through the NIH Roadmap will strive to develop new technologies, build new research teams and disciplines, and re-engineer the clinical research enterprise–both in the translation of basic advances into clinical research, and the translation of clinical research into widespread application. Our participation in these cross-cutting initiatives, and our leadership of those on "metabolomics," interdisciplinary training, and translational research cores, will help to advance research progress in the diseases within the NIDDK mission.

The health problems within the NIDDK's purview exact a significant toll on the Nation. We have included in this year's document a new chapter devoted to obesity. This chapter highlights both new research findings and recent strategic planning processes and administrative changes at the NIDDK and at the NIH. Similarly, we have highlighted recent strategic efforts in liver disease that are meant to strengthen and facilitate research in this area. Two essays in this booklet capture the essence of scientific talks by NIDDK-supported scientists who are leaders in the fields of genomics and adult stem cell biology. As in past years, we also feature several "Stories of Discovery," which are intended to illustrate how today's science advances are built on a strong foundation of past research accomplishments. Within these pages you will also find profiles of several people affected by diseases for which the NIDDK bears research responsibility, such as diabetes, celiac disease, Cooley's anemia, and polycystic kidney disease. These personal accounts serve to remind us that the ultimate purpose of biomedical research is to preserve health and to benefit people touched by disease.

Our highlights of recent advances and emerging opportunities provide just a glimpse of the work being carried out by an immense network of basic scientists, clinical researchers, and patient volunteers. It is our hope that you will find these advances an exciting and promising reflection of the NIDDK's many contributions to the national biomedical research enterprise.

Allen M. Spiegel, MD
Director
National Institute of Diabetes and Digestive and Kidney Diseases
National Institutes of Health
Department of Health and Human Services