ASSESSMENT OF THE SPECIAL STATUTORY FUNDING PROGRAM FOR TYPE 1 DIABETES RESEARCH

The Special Statutory Funding Program for Type 1 Diabetes Research has enabled the establishment of a unique, highly collaborative, scientifically comprehensive, and managerially sound research program. This program stands as an effective model for deploying funds that support cross-organizational initiatives of impressive scientific power and synergism. The special funds have both propelled and enabled researchers to capitalize on remarkable opportunities in diabetes research in ways not typically possible through traditional funding approaches and program-development mechanisms.

EVALUATION APPROACHES

Multiple evaluation approaches were taken to obtain information on the planning and implementation processes involved in administration of the Special Statutory Funding Program for Type 1 Diabetes Research, and on scientific accomplishments of initiatives supported by this program. It must be emphasized that achievement in biomedical research is a long-term process that reflects the progressive accumulation of knowledge. Although many significant scientific findings have begun to emerge from the early years of the special statutory funding program, FY 1998-2000, the research impact of this program cannot yet be fully assessed. New insights into the biology of type 1 diabetes and its therapy, which are attributable to this program, are continuing to develop. Importantly, the evaluation of the middle years of the program, FY 2001-2003, must necessarily focus on the effectiveness of the process for the deployment of the funds towards initiatives, many of which have just recently been launched, but which hold enormous promise for the future advancement of the scientific goals of the program. Thus, many results from the evaluation approaches described in this report represent only a preliminary assessment of the advances that can be expected to flow from the special statutory funding program.

Major parameters that guided the evaluation process include:

- Research accomplishments, as reflected in publications from peer-reviewed scientific journals;
- Professional, scientific judgment of external experts in the type 1 diabetes field garnered from a specific assessment of the program at a meeting convened at the NIH in May 2002;
- Assessment by program grantees of the impact of the special statutory funding on their research and careers, as obtained through their responses to a survey administered by the NIH;
- Other indicators of program effectiveness, such as recruitment of new investigators, as acquired through analysis of data from internal databases and archival sources.

EMPLOYMENT OF AN INNOVATIVE PARADIGM FOR TRANS-HHS, CROSS-DISCIPLINARY RESEARCH PLANNING AND MANAGEMENT

As designated by the Secretary, HHS, the NIDDK has coordinated the development of a sound planning, implementation, and evaluation process for the special statutory funding program. The allocation of funds has been performed in a scientifically competitive manner in cooperation with multiple institutes and centers of the NIH and other components of HHS with expertise in type 1 diabetes. A series of planning meetings—involving these agencies, institutes and centers, along with members of the diabetes voluntary community—resulted in two administrative plans—in 1998 and again in 2001—for allocation of the special funds. These plans established the framework for initiatives and research priorities to be pursued. Notably, the special funding program ties a set of HHS-wide research planning and evaluation efforts to the deployment of a specified amount of budgetary resources in a highly effective and efficient research management process.

Type 1 diabetes is an excellent model for a scientifically targeted and managerially integrated program because it is a systemic disease that is addressed by multiple NIH and HHS components. Type 1 diabetes involves the body's endocrine and metabolic functions (NIDDK) and immune system (NIAID); multi-organ complications affecting the heart (NHLBI), eyes (NEI), kidneys and urologic tract (NIDDK), nervous system (NINDS), and oral cavity (NIDCR); the special problems of a disease diagnosed primarily in children and adolescents (NICHD); critically important and complex genetic (NHGRI) and environmental (NIEHS) factors; and the need for specialized research resources, such as islet isolation centers (NCRR). Type 1 diabetes is also of importance to other HHS components, such as the CDC, FDA, and AHRQ. Thus, the Special Statutory Funding Program for Type 1 Diabetes Research has provided the seed money to catalyze and synergize the efforts of a wide range of HHS components.

Type 1 diabetes is one of the most frequent chronic childhood diseases. Approximately 1 in every 400 to 500 children and adolescents in the U.S. has type 1 diabetes. The Special Statutory Funding Program for Type 1 Diabetes provides support for research on the prevention and cure of this lifelong disease.

(Photo Credit: Juvenile Diabetes Research Foundation International)

INVOLVEMENT OF THE EXTERNAL DIABETES RESEARCH AND VOLUNTARY COMMUNITIES

The input of the diabetes research and voluntary communities in all aspects of planning, implementing, and evaluating the use of the special funds has been critical to the success of the program. Leading scientific and lay experts with respect to type 1 diabetes have participated in the priority-setting process for framing special type 1 diabetes research initiatives, helped to evaluate the accomplishments of the program, and identified new opportunities for future research that have emerged from the special statutory funding program.

Research Workshops and Conferences

Significant conduits for the input of diabetes investigators are research workshops and conferences. These meetings, which often focus on a specific aspect of diabetes prevention or treatment, report the most up-to-date research findings and, thus, highlight areas of emerging scientific importance.

Conferences that have been supported in part with the special funds include:

- 1998 Etiology of Type 1 Diabetes
- 1999 Advances in Neurobiology: A Key to Understanding Diabetic Neuropathy
- 2000 Hypoglycemia and the Brain
- 2001 Pancreatic Development, Proliferation, and Stem Cells
- 2001 Beta Cell Biology in the 21st Century
- 2001 Etiology and Epidemiology of Early Autoimmune Type 1 Diabetes in Humans
- 2001 Encapsulation and Immunoprotective Strategies of Islet Cells
- 2002 EDIC Diabetic Autonomic Neuropathy Advisory Group Meeting

1999 Diabetes Research Working Group Strategic Plan

In 1999, the independent, congressionally-established Diabetes Research Working Group (DRWG) issued its strategic research plan for conquering diabetes, including both type 1 and type 2 diabetes. This panel of scientific experts engaged in a year-long, in-depth process to gather input from the diabetes research and voluntary communities. The DRWG's recommendations of relevance to type 1 diabetes have informed the planning and implementation of the special type 1 diabetes funding program. These areas of DRWG emphasis include research opportunities identified in the areas of genetics; autoimmunity and the beta cell; clinical research and clinical trials; diabetic complications; special populations, including children; and resource needs.

Advisory Meetings

In 1997, a trans-NIH conference entitled "Diabetes Mellitus: Challenges and Opportunities" met to discuss the state of research on diabetes and its complications. Symposium participants recommended that diabetes research be intensified in order to close research gaps, take advantage of new technologies, and capitalize on highly promising research leads and advances. The specific conclusions of this group were a critical source of input when the Special Statutory Funding Program for Type 1 Diabetes Research was launched the next year. Moreover, the chairs of four relevant subpanels from the symposium reconvened in 1998 to advise the NIH on the initial deployment of the special funds.

Two additional advisory panels of external scientific experts have provided input on the implementation of the special funding program. In April 2000, scientific advisors helped to prioritize proposed research projects for the deployment of a portion of the special funds that became available after completion of short-term projects launched in FY 1998 and 1999. The deliberations of this group were especially valuable for rapidly identifying high-priority initiatives when the special funding program was expanded in time and amount in FY 2001. A similar panel of advisors met in May 2002 to review the use of the special funds to that time and to identify new research objectives and opportunities that arose from the expansion of research efforts on type 1 diabetes through the special funding program. The recommendations of this advisory panel constitute a significant guide to the NIH's ongoing research efforts on type 1 diabetes.

Peer-review

Grants, cooperative agreements, and contracts supported with the special funds have been subject to peer-review mechanisms of the NIH and CDC funding processes. This review system ensures that the funds are expended for scientifically- and technically-meritorious research that is responsive to the goals and priorities of the special statutory funding program. A limited number of supplemental research awards were also made to existing peer-reviewed projects.

Collaboration with the Diabetes Voluntary Community and Other Non-Federal Funding Sources

The major diabetes voluntary organizations—the ADA and JDRF—have been committed and essential partners with HHS in developing the scientific goals and strategies of the Special Statutory Funding Program for Type 1 Diabetes Research. Representatives of these groups have participated in the planning and advisory meetings that have aided in the formulation of a scientifically credible and productive plan for the use of the special funds. Moreover, by co-sponsoring several of the special type 1 diabetes research initiatives, these organizations help the HHS to maximize the resources available for achieving the goals of the program.

(Photo Credit: Richard Nowitz for NIDDK)

PURSUIT OF A SCIENTIFICALLY FOCUSED, BUT FLEXIBLE, BUDGETING PROCESS

Six major, scientific research goals that offer exceptional promise for the treatment and prevention of type 1 diabetes form the basis of the planning and allocation processes of the special funding program (Table 2):

- **Goal I: Identify the Genetic and Environmental Causes of Type 1 Diabetes**
  Type 1 diabetes results from complex interactions of inherited genes and unknown environmental triggers. Long-term epidemiological research is required to pinpoint environmental factors for this complex disease and to conduct large-scale collection and analysis of genetic samples.

- **Goal II: Prevent or Reverse Type 1 Diabetes**
  Type 1 diabetes is caused by autoimmune destruction of the pancreatic beta cells. Focused research on the immune system and well-designed clinical studies are critically important to advance understanding of the mechanism of diabetic autoimmunity and to find new means of blocking or reversing this process.

- **Goal III: Develop Cell Replacement Therapy**
  Replacement of the pancreatic beta cells that are lost in type 1 diabetes would relieve patients of the need for insulin therapy, restore proper glucose control, and drastically reduce the risk of long-term complications. Further research on beta cell biology, immune modulation, and islet transplantation protocols could transform these highly experimental, but promising, treatments into a viable cure for the type 1 diabetes population.

- **Goal IV: Prevent or Reduce Hypoglycemia in Type 1 Diabetes**
  Extremely low blood glucose—hypoglycemia—is a serious, acute complication of type 1 diabetes that can be life-threatening in extreme cases. It is the major factor that limits achievement of metabolic control shown to prevent complications. Research on the brain functions needed to recognize hypoglycemia, and on the development of sensors to optimize the daily management of blood glucose levels, could have a significant impact on the quality-of-life of diabetic individuals.

- **Goal V: Prevent or Reduce the Complications of Type 1 Diabetes**
  Over time, the high blood glucose levels of diabetes cause extensive damage to many of the body's organ systems. The development of new therapies to treat or prevent such complications could substantially reduce the health and financial costs of type 1 diabetes. Importantly, individuals with type 2 diabetes also benefit from research on diabetic complications.

- **Goal VI: Attract New Talent to Research on Type 1 Diabetes**
  Type 1 diabetes is an extremely complex disease, in terms of its origin, daily management, and clinical progression. The pace and scope of type 1 diabetes research would be greatly enhanced by recruiting researchers from a variety of scientific fields who have not yet applied their expertise to the study of diabetes, and by expanding the pool of talented researchers whose main focus is already on type 1 diabetes.

Based on this scientific framework, a comprehensive budget strategy has been used to promote maximal flexibility, to respond to new scientific opportunities, and to plan and initiate broad, multidisciplinary projects that could not have been undertaken without the special statutory funds. The program has included both short-term and long-term initiatives. Short-term grant supplements and pilot and feasibility grants have enabled the program to capitalize quickly on emerging research opportunities of high priority. Longer-term research grants and consortia and research infrastructure initiatives have been pursued to initiate large-scale research projects of critical importance.

The special funding program has also established targeted type 1 diabetes-relevant components within initiatives that are supported in part by regularly appropriated funds. This strategy has maximized the NIH and CDC's investment in type 1 diabetes research by building upon existing research infrastructure and ongoing clinical trials. Moreover, several initiatives launched with the special funds have attracted investment from private foundations, industry, or other non-federal government sources with an interest in type 1 diabetes research.

TABLE 2 Budget of the Special Statutory Funding Program for Type 1 Diabetes Research (FY 1998 - 2003)

	1998	1999	2000	2001	2002	2003 (est)‡
Goal I	493,436	2,070,192	4,463,743	32,285,131	18,615,452	18,614,012
Goal II	9,247,235	6,211,806	5,615,924	20,888,609	19,697,377	25,142,609
Goal III	6,379,977	6,293,237	5,881,222	25,204,681	19,346,899	15,892,126
Goal IV	3,470,740	3,672,012	2,579,693	2,674,074	8,993,845	7,780,348
Goal V	10,339,924	11,725,416	11,344,751	14,685,977	21,402,845	15,130,174
Goal VI	0*	0*	0*	4,049,000	11,793,551	14,064,830
Conferences	30,000	19,315	109,900	180,458	150,031	TBD
Balance	39,318	8,022	4,767	32,070	0	0
To be Distributed	0	0	0	0	0	3,375,901
TOTAL	**30,000,000**	**30,000,000**	**30,000,000**	**100,000,000**	**100,000,000**	**100,000,000**

* Prior to FY 2001, Goal VI was addressed by solicitations for research projects that encouraged the participation of new investigators and the submission of applications for pilot and feasibility awards. These early efforts relative to Goal VI are thus embedded in other goals during the FY1998-2000 period of the program. Starting in FY 2001, specific initiatives were launched relative to Goal VI.

‡ Estimated budget figures for FY 2003 are subject to change before the end of the fiscal year.

ESTABLISHMENT OF LARGE-SCALE, COLLABORATIVE, AND INFRASTRUCTURAL INITIATIVES

The special funds for type 1 diabetes research have enabled the establishment of large-scale, infrastructural projects of a highly collaborative nature. These initiatives, which have become a hallmark of the special funding program, could not otherwise have been undertaken at all, or not at a scientifically optimal scale of operation. These major projects include a genetics consortium, long-term epidemiological efforts, a beta cell biology consortium, and a type 1 diabetes clinical trials network. Such initiatives are significantly different in size, scope, duration, and nature from other type 1 diabetes research efforts supported through the regular NIH and CDC appropriations. Most NIH research takes the form of 3-5 year hypothesis-driven research grants, either initiated by investigators in the field, or submitted in response to NIH research solicitations. Such grants and funding initiatives often involve only a single NIH funding component and are carried out in a single, academic research laboratory. In contrast, the infrastructural and other large-scale research initiatives of the special funding program represent a new paradigm, in that overt trans-NIH and NIH-CDC collaborations are integral and essential to their successful operation, and the involvement of multiple research groups is required.

(Photo Credit: Richard Nowitz for NIDDK)

Research Solicitations

Research proposals for support by the special funding program are received through a variety of mechanisms, including Requests for Applications (RFAs) for grant and cooperative agreement awards, and requests for administrative supplements for pilot or ancillary studies related to ongoing projects. From FY 1998 through 2002, a total of 35 RFAs were issued for the support of focused research of critical importance to the prevention and cure of type 1 diabetes and its complications. They received full or partial support from the special funding program (Table 3). (One additional RFA issued for initiation of funding in FY 2003—DK03-001—had not been awarded at the time of this report.) RFAs solicit research on a specific scientific topic of high relevance to program goals; these announcements have a single date for receipt of grant applications and have a target funding level set aside. The RFAs of the special funding program invited applications for a range of research efforts from basic studies and resource development to clinical trials and clinical research in people with or at risk for type 1 diabetes (*see Appendix 1 for a complete list of RFAs*).

By creating a very focused mechanism for type 1 diabetes research, the special statutory funding program has attracted scientifically-meritorious grant applications from high-caliber research talent. These applications have been subject to rigorous scientific review by experts in the diabetes research field. Through the 35 RFAs, the NIH awarded 394 new, competing grants to extramural investigators, including 315 awards supported with the special funds (Table 3). The remaining 79 grants received funding from regularly appropriated funds and/or voluntary organizations. The 35 percent funding success rate of applications submitted in response to these RFAs reflects the highly competitive, peer-review award process and exceeds the 26 percent success rate of all new grant applications received at the NIH in FY 1998-2001.[7] Thus, the special statutory funds extended the NIH's ability to solicit and support highly-meritorious grant applications for critically important research on type 1 diabetes beyond what would have otherwise been possible. More importantly, as discussed below, the type of grants and the nature of the research projects differ substantially from what is typically funded.

7 The overall NIH success rate for all grant applications, including competing continuations of current grants and competing supplements, was 31.8 percent from FY 1998-2001.

TABLE 3 Research Solicitations (RFAs) (FY 1998 - 2002)

Requests for Applications Issued	35
Applications Received	1138
Total Grants* Awarded	394
Grants Awarded with Special Funds	315
Grants Awarded with Regular Appropriations	79
Overall Funding Success Rate	35%
NIH New Grant* Success Rate FY98-01	26%

* Includes research project grants and cooperative agreements.

Innovative and Clinically-Oriented Research

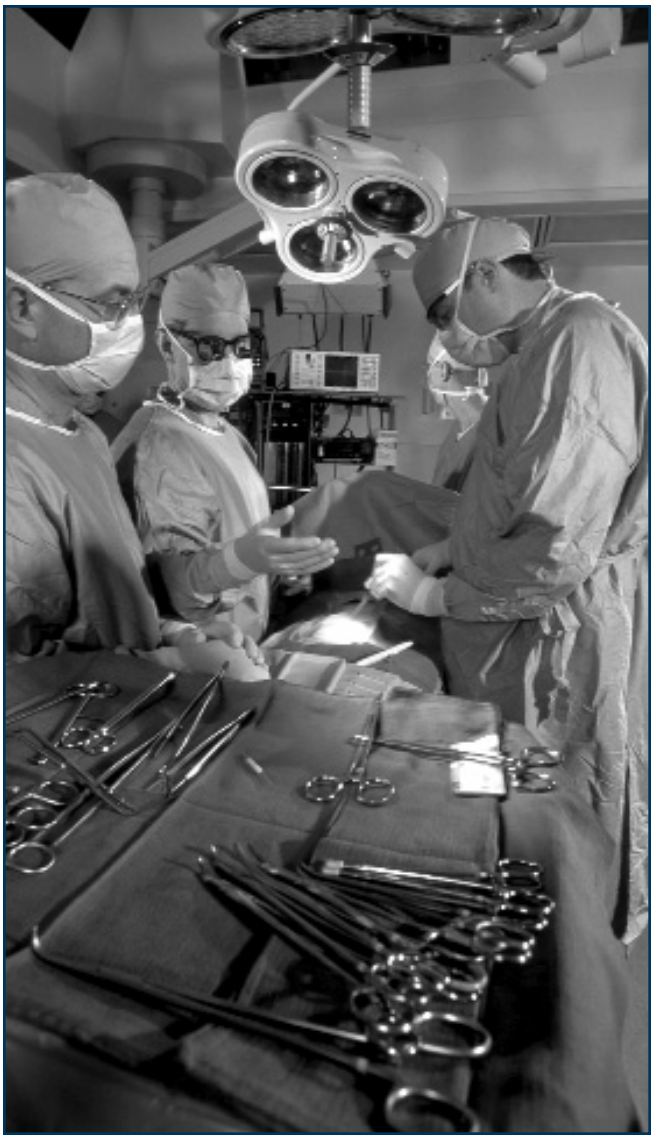
The special statutory funding program has promoted innovative, cutting-edge research that has the potential to quickly advance the field. The pilot and feasibility grant mechanism, known as an R21 grant, is one means of achieving this goal. In addition to supporting innovative, high-risk/high-impact investigations, R21 grants, which are typically 2-3 years in duration, help to ensure budget flexibility in the later years of the funding program. This flexibility allows the program to quickly respond to emerging research opportunities, while providing sufficient seed money for investigators to gather data for a full grant application if their hypotheses prove worthy of further pursuit. On the continuum of funding mechanisms, R01 research grants, which also support cutting-edge, investigator-initiated research, are often less risky and based on stronger preliminary evidence and, thus, may have a longer funding period, typically 4-5 years. These mechanisms are complementary, and pilot and feasibility grants can often gain the necessary preliminary data to facilitate a successful R01 grant application to the NIH or funding by a non-profit group or other research organization.

From FY 1998 through 2002, slightly more new R21 grants than R01 grants were awarded through the special funding program RFAs (Table 4). This level of R21 grant support differs markedly from the NIH-wide pattern, in which an estimated 6.6 times as many R01 grants as R21 grants were awarded during the same time period. In addition, more than 90 percent of grantees (86/93) who responded to a survey on the outcomes of grants awarded in the early years of the special funding program stated that these grants supported innovative or high-risk research that they otherwise would not have been able to pursue. Twelve survey respondents reported that a patent or patent application for a new invention has resulted from research supported by their type 1 diabetes grants funded through the special program.

TABLE 4 New Research Grants (FY 1998 - 2002)

	R21	R01	Other*	Total	R21:R01
Special Program RFAs	136	115	64	315	1:0.8
NIH-Wide Grant Funding	3,143	20,880	nd	nd	1:6.6

* Includes P01, R24, U01, U10, U19, U24, U42, T32, and K12 mechanisms. (nd: no data available)



(Photo Credit: Richard Nowitz for NIDDK)

In addition to encouraging innovative research studies, the special funding program has a clear focus on clinically-relevant research that can improve the health and well-being of individuals with or at risk for developing type 1 diabetes. Nearly 40 percent of respondents to the grantee survey reported that their research required approval from an Institutional Review Board (IRB) that is necessary for research on human subjects, and close to 60 percent described their research as clinically-relevant (Table 5). In addition, 6.5 percent of grantees reported that they used large animals (e.g., non-human primates), which is often indicative of preclinical research, in their studies. More recent bench-to-bedside research initiatives funded through the special program are bringing together basic researchers and clinical investigators for the translation of laboratory findings into new treatments for diabetic patients. Many of the newly-established consortia are clinical research networks—TrialNet, the Immune Tolerance Network, DirecNet, the Triggers and Environmental Determinants of Diabetes in Youth (TEDDY) consortium, and others. Thus, the special funding program has promoted the integration of basic research, which underpins future medical progress, with vitally important clinical research, which can quickly bring new advances to the patient's bedside. The impetus for clinical research provided by the special statutory funding program is reflected in the following table (Table 5) of responses from the survey of recipients of these funds.

TABLE 5 Grantee Survey - Clinically Oriented Research (FY 1998 - 2002)

Early Grantees Surveyed	171
Survey Responses	93
Required IRB Approval	37 (40%)
Clinically Relevant Research	55 (59%)
Used Large Animals	6 (6.5%)

A high priority of the special funding program is the recruitment and retention of new investigators into diabetes-related research. Understanding the underlying causes of type 1 diabetes and finding new ways to prevent and cure this disease requires the concerted efforts of many investigators with diverse expertise. Relevant fields of scientific inquiry that can contribute to diabetes research include genetics, epidemiology, bioinformatics, genomics and proteomics, immunology, pathogen discovery, cell biology, bioengineering, transplantation surgery, neuroscience, cardiology, nephrology, ophthalmology, radiology, and others.

New Investigators

The special statutory funding program has used several mechanisms to attract new talent to type 1 diabetes research. As noted previously, pilot and feasibility grants give new researchers the opportunity to test novel hypotheses that have conceptual promise, but that might not yet have extensive preliminary data to support them. This type of award is also useful for established investigators who want to explore a new application or direction for their research. In addition, new research talent has been recruited through initiatives that pair established diabetes investigators with other scientists who can bring a new perspective or technology to the field. These mechanisms can be a magnet for drawing bright, capable investigators with creative research ideas to undertake innovative studies.

From FY 1998 through 2002, R01 and R21 grants comprised 251 of the 315 competing grants awarded through the special funding program for investigator-initiated research. These 251 awards went to 234 individual scientists (Table 6). More than 60 percent of these researchers were either first-time NIH grantees (30 percent) or had not previously held an NIH grant for any type of diabetes-related research (32 percent). The percent of investigators who had never received a diabetes-related grant from any source could not be determined from NIH archival data, which does not track prior grant support from other government or private funding sources. However, in the survey of early grantees of the special statutory funding program, a majority of respondents with new grant awards identified themselves as having had no previous support for research on type 1 diabetes. Thus, the special funding program has been highly successful at bringing new scientific talent to bear on research issues in type 1 diabetes. Without this program, it is unlikely that these investigators would have ventured into the type 1 diabetes research field or explored new research concepts for the future benefit of patients. These data are summarized in the following table (Table 6).

TABLE 6 Recruitment of New Investigators to Type 1 Diabetes Research Through the Special Statutory Funding Program (FY 1998 - 2002)

R01 and R21 Grants Awarded	251
Principal Investigators	234
First NIH Grant	69 (30%)
First Diabetes-Related NIH Grant	75 (32%)

Continuation of Research Funding

Interestingly, from 60 R01 investigator-initiated grants initially awarded through the special statutory funding program with a project end date of September 29, 2002 or earlier, there were 23 applications to the NIH by the end of FY 2002 for continuation of support with regular NIH funds via recompetition through the peer-review system (Table 7). Funds were awarded for 39 percent of these applications for renewal. This rate for continuation of research studies that commenced under the special statutory funding program is comparable to the average NIH rate (43.5 percent)[8] for funding of unamended competing renewal applications from FY 2000-2002. These data are an extremely preliminary indicator of the success of grants awarded through the special statutory funding program and likely underestimate the continued funding rate of research. The rate of successful recompetition is expected to increase with time, as investigators have the opportunity to amend their applications for continued support, based on critiques received during peer-review. At the time of this writing, some additional applications for FY 2003 funding had been reviewed, but funding decisions were not yet made.

TABLE 7 Resubmission Rate of R01 Grants Funded by the Special Statutory Program Compared with General NIH Data (FY 2000 - 2002)

R01 Special Grants Eligible for Resubmission	60
Applications Reviewed	23
Competing Continuations Awarded	9 (39%)
Unamended NIH Competing Renewals Awarded	43.5%

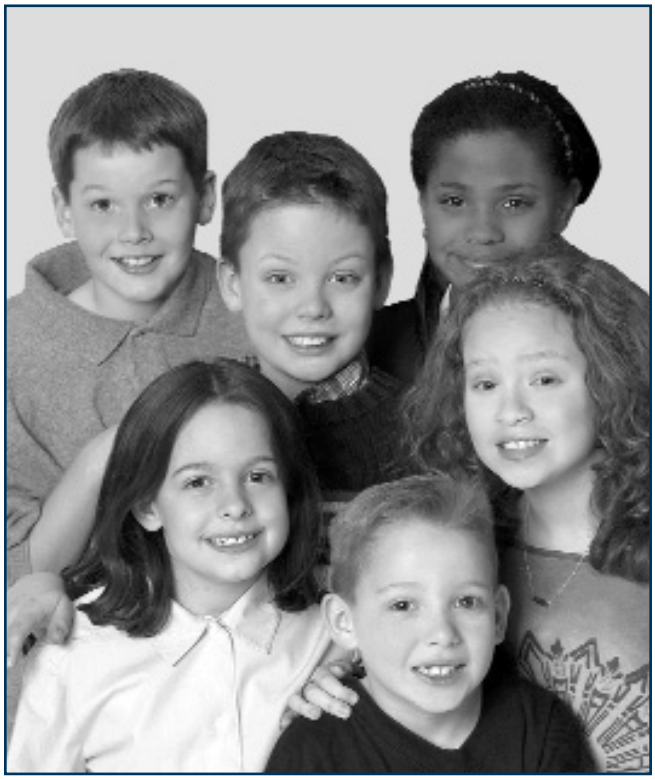
Importantly, 52 percent (45/87) of the subset of survey respondents, whose new grants (both R01 and R21 mechanisms) expired by the end of FY 2002, reported continued funding for the same line of research. Some investigators cited NIH support by means other than recompetition of the original grant (e.g., through participation in TrialNet or other research consortia). In addition, several researchers obtained continued funding from non-NIH sources, including: the American Diabetes Association, Canadian Diabetes Association, Canadian Institutes of Health Research, Endocrine Society, CDC, Juvenile Diabetes Research Foundation International, March of Dimes, Michigan Life Science Corridor Funding, National Health and Medical Research Council (Australia), and the New York State Department of Health. At the time of the survey, additional respondents reported being in the midst of preparing or having recently submitted grants for continued research funding. Together, these data indicate that the special type 1 diabetes research funds have enabled the establishment of a viable research enterprise that continues to make progress towards realizing the scientific goals of the program. Moreover, the research funded by this program has garnered support from a broad array of research funding agencies.

8 The NIH received more than 10,400 unamended, competing applications for continued grant support from FY 2000-2002. Moreover, those applications included renewals of long-term projects that had successfully competed in previous renewal applications. Thus, it is difficult to make a stringent comparison between the success rate of the relatively small number of grants resubmitted from the special statutory funding program and the NIH-wide data.

ADVANCEMENT OF RESEARCH ON THE UNDERSTANDING, PREVENTION, TREATMENT AND CURE OF TYPE 1 DIABETES

The Special Statutory Funding Program for Type 1 Diabetes Research has significantly advanced knowledge of the causes and medical consequences of type 1 diabetes and has accelerated the testing of new methods to prevent or treat this disease and its complications. Highlights of important scientific findings and promising lines of research supported by the special funding program are detailed in the following chapters for each of the six scientific goals. Each of these chapters incorporates substantiating data from the survey of grantees, who received support from the special funding program, and the May 2002 program review by *ad hoc* scientific experts. Because of the long-term nature of biomedical research, these advances mark only the beginning of the scientific gains related to type 1 diabetes that can be expected to ensue in the future from this targeted investment in type 1 diabetes research.

Additional supplemental information is available on the allocation of the special statutory funds (Appendix 1) and the planning, implementation, and evaluation processes (Appendix 2) of the special funding program.



(Photo Credit: Juvenile Diabetes Research Foundation International)